

Exxon Valdez Oil Spill Trustee Council

Wednesday, November 19, 2014

9:30 a.m. to 4:30 p.m.

800.315.6338 – NEW CODE: 72241

Motions

✓

Motions will be distributed at Nov 19 meeting

Draft Motions for November 19, 2014 Trustee Council meeting

Agenda Item 2: November 19, 2014 Agenda and April 8, 2014 Meeting Notes

I move we approve the November 19, 2014 draft meeting agenda.

I move we approve the April 8, 2014 draft Trustee Council meeting notes.

Agenda Item 3: Executive Director's Report

Investment Policy

I move we approve the revised Investment Policy, dated April 9, 2014.

Reporting Policy

I move we approve the revised Reporting Policies, dated October 9, 2014.

Agenda item #4: Investment Fund Asset Allocation

I move we approve the following Asset Allocation for FY15: Domestic Equities 47% +/- 7%, International Equities 23% +/- 7%, Domestic Bonds 30% +/- 5% and Cash Equivalents 0% + 1%/- 0%.

Agenda Item 8: Annual Program Development and Implementation (APDI) Budget, 15120100

I move we approve \$2,319,025, which includes GA, for FY15 funding of the Annual Program Development and Implementation Budget Project 15120100, revised as of October 9, 2014.

Agenda Item 9: Long-Term Programs

Motion regarding EVOSTC Long-Term Monitoring Program (GulfWatch Alaska), Long-Term Monitoring of Marine Conditions and Injured Resources and Services, 15120114

I move we approve funding of \$2,803,060, which includes GA, for FY15 funding of the Long-Term Monitoring of Marine Conditions and Injured Resources and Services Project 15120114, dated September 18, 2014.

Motion regarding Bochenek Supplemental Data Management Project, 15150114-T

I move we approve funding of \$121,803, which includes GA, for FY15 funding for work proposed in Supplemental Data Management Project 15150114-T for a Herring Program Data Coordinator and for work associated with becoming a DataOne.

Motion regarding PWS Herring and Monitoring Program, Herring Research and Monitoring, 15120111

I move we approve funding of \$1,365,678, which includes GA, for FY15 funding of the Herring Research and Monitoring Project 15120111, dated September 19, 2014.

Agenda Item 10: NOAA Harbor Protection Program Projects

NOAA Harbor Protection Projects - Project Management, 15120112

I move we approve funding \$6,104, which includes GA, for FY15 funding of Project 15120112, of the NOAA Harbor Protection/Project Management, dated August 29, 2014. This amount reflects a reduction from the proposed funding as we are excluding the funding for NOAA personnel to travel from D.C. to Anchorage.

NOAA Harbor Protection Program - Cordova Clean Harbor, 15120112-A

I move we approve funding \$72,996, which includes GA, for FY15 funding of Project 15120112-A, of the Exxon Valdez Oil Spill Marine Habitat Harbor Water Quality Improvement Program, dated August 18, 2014.

NOAA Harbor Protection Program - Snow Management Analysis, 15120112-B

I move we approve funding \$141,315, which includes GA, for FY15 funding of Project 15120112-B, of the EVOS Legacy: Reducing Cordova Snowmelt Pollution to Marine Habitat, dated August 28, 2014.

Agenda Item 11: Pigeon Guillemot Restoration Research in Prince William Sound, 15100853

I move we approve funding of \$391,206, which includes GA, for FY15 funding of Project 15100853, of the Pigeon Guillemot Restoration Research in Prince William Sound, Alaska, dated August 27, 2014.

Agenda Item 12: Marine Debris Removal Program, Northeast Montague Island Marine Debris Cleanup, 15120116

I move we approve funding of \$310,650, which includes GA, for FY15 funding of Project 15120116, of the Northeast Montague Island Marine Debris Cleanup, dated September 1, 2014.

Agenda Item 13: Lingering Oil in PWS Update, Lingering Oil in Prince William Sound, Alaska, 15150121

I move we approve funding of \$114,570, which includes GA, to fund Project 15120121, of the Lingering Oil in Prince William Sound, Alaska: 1) Update of the Spatial Synthesis of Lingering Oil Distribution Modeling with 2013 Population Data for Sea Otters; and 2) Selection and Treatment Methods/Costs for Priority Lingering Oil Sites, dated September 2, 2014. This funding is authorized for November 20, 2014 through January 31, 2016.

Agenda Item 14: Subsistence Survey Update, Update of the Status of Subsistence Uses in Exxon Valdez Oil Spill Area Communities 2014, 15150122

I move we approve funding of \$281,969, which includes GA, for FY15 funding of the Update of the Status of Subsistence Uses in Exxon Valdez Oil Spill Area Communities 2014, dated October 1, 2014.

Agenda Item 15: 2014 Update Injured Resources and Services

I move we approve the draft 2014 Update Injured Resources and Services, dated November 10, 2014, with the following revisions:

1. The Pacific Herring Status will remain unchanged as "not recovering;"
 2. Cutthroat Trout recovery status edits to remove additional statements after "Cutthroat trout are very likely recovered;"
 3. Rockfish recovery status to remain "Very likely recovered;"
-
-
-

Executive Session: personnel

I move we go into executive session to discuss personnel issues. We will adjourn from executive session without coming back to the public meeting. No action will take place during executive session.

Resolutions

Resolutions will be distributed at Nov 19 meeting

Womac, Cherri G (EVOSTC)

From: Womac, Cherri G (EVOSTC)
Sent: Friday, November 14, 2014 3:30 PM
To: Brookover, Thomas E (DFG); Cantor, James E (LAW); 'Hartig, Lawrence L (DEC)'; 'James Balsiger (jim.balsiger@noaa.gov)'; Pat Pourchot; 'Terri Marceron (tmarceron@fs.fed.us)'; Peter Keller; Kent, Lynn J T (DEC)
Subject: FW: Steiner Article in ADN Today
Attachments: 11.12.14 Unsolicited Proposals Background Info.docx

Hello Trustees,

Rick Steiner has an article in today's ADN: <http://www.adn.com/article/20141114/exxon-valdez-spill-isnt-over>. Earlier this week, he contacted our office regarding speaking during public comment so also attached is information circulated to you earlier this summer regarding his Herring Permit Buy-Back Proposal, should that be one of his topics. There is a three-minute limit on public comment.

Mr. Steiner's article discusses the draft IRS' Pacific Herring recovery status. Please note, we received new information on Tuesday from ADFG and, based on that information, revised the draft IRS to retain Pacific Herring as "not recovering." This recent revision will be discussed with you at next week's meeting. NOAA and ADFG were emailed notice of the change as they provided review for Pacific Herring.

Please let us know if you have any questions and we look forward to seeing you next week.

Elise

<11.12.14 Unsolicited Proposals Background Info.docx>

Womac, Cherri G (EVOSTC)

From: Womac, Cherri G (EVOSTC)
Sent: Thursday, October 23, 2014 1:07 PM
To: 'Hartig, Lawrence L (DEC)'; Brookover, Thomas E (DFG); Schorr, Jennifer L (LAW); Cantor, James E (LAW); 'Terri Marceron (tmarceron@fs.fed.us)'; 'James Balsiger (jim.balsiger@noaa.gov)'; Pat Pourchot; Kent, Lynn J T (DEC); Peter Keller
Cc: 'Hsieh, Elise M (EVOSTC)'
Subject: 1 of 2 sending Nov 19 meeting materials
Attachments: TC mtg materials for Nov 19.zip

Hello Trustees,

We look forward to meeting with you:

For an Informal Briefing: Tuesday, October 28, 2014, 1:00 p.m. to 2:30 p.m. for a pre-meeting briefing in preparation of the November 19, 2014 Trustee Council meeting. The briefing will include an update on Habitat matters and is scheduled to be held at the EVOSTC office, Grace Hall Conference Room 233, 4230 University Drive. Jim Balsiger, and anyone else who is out of town, can call into the conference room at: 907-786-7170.

For an in-person Trustee Council Meeting, Wednesday, November 19, 2014, 9:30 a.m. to 4:30 p.m. at the Glenn Olds Conference Room; lunch will be provided in the EVOSTC office in Grace Hall.

Regarding the Meeting Materials:

Cherri made notebooks for each of you, tabbed with each agenda item and all attachments to this email. The notebooks were delivered to your office Wednesday morning.

All proposals are confidential unless funded. Due to their volume, detailed budget sheets are not included in your notebook but are available from our office upon request.

Meeting Materials, excluding full proposals, are also available on the EVOSTC website at <http://www.evostc.state.ak.us/index.cfm?FA=events.home>

If documents are subsequently updated or added: Any documents that are updated will include a note with information identifying changes so that review can be limited to the revisions. Documents we anticipate may be updated or added in advance of the Council meeting:

Habitat: we will forward any developments re habitat to you for review

2014 Draft IRS: If agency comment results in revisions after October 31st, a revised IRS will be forwarded to you.

All FY15 references refer to the EVOSTC fiscal year: February 1, 2015 – January 31, 2016.

A draft motion sheet and draft resolution(s) will be provided to you at the meeting.

Notes regarding a few of the Agenda Items

Executive Director's Report

Investment Policy: The Investment Policy is updated to remove a reference to the Koniag Sub-Account in Section 14 as that Sub-Account was unencumbered and closed in early 2014.

Reporting Policy: EVOSTC staff continues to work with the EVOSTC Science Panel and the Long-Term Programs to refine reporting requirements. Changes are summarized in a comment on pg. 13.

FY17-21 Invitation Process: The first five-year EVOSTC long-term programs contract administered through NOAA ends in 2016. EVOSTC staff anticipates issuing a FY17-21 invitation Dec. 1, 2015. The PAC was excited and pleased to continue the long-term programs and also requested that the FY17-21 invitation include efforts regarding PSP effects on seabirds. Below is a draft timeline for drafting and review of the FY17-21 Invitation based on an anticipated continuation of the long-term programs in their current framework. If other topics or new frameworks are to be included in the draft invitation, a PAC and TC meeting may be required and perhaps earlier in the year (January or February):

2015 Invitation Prep draft schedule:

February 4-6, 2015: Long-Term Programs' Science Workshop with EVOSTC Science Panel
March 2015: EVOSTC staff drafts FY17-21 Invitation
April 15-16: EVOSTC Science Panel meeting to review draft Invitation
May: Draft circulates to Agency Personnel and Law, EVOSTC staff continues to refine draft
July 1: Draft Invitation circulates to TC and PAC for review
Mid-July: PAC telephonic one-hour meeting to review draft
Mid-July: If desired, TC telephonic one-hour meeting to review draft
August: EVOSTC staff refines draft as needed

2015 Fall Meeting Prep: Resume normal review cycle – with draft invitation alongside the annual work plan, budget, etc:

Mid-September: EVOSTC Science Panel review
Mid-October: PAC review
Late October – Nov.: Annual Trustee Council meeting review
December 1: FY17-21 Invitation Issued, proposals due April 1, 2016.

Asset Allocation

The EVOSTC Investment Working Group (IWG) recommends the Council maintain its current asset allocation for FY15. The IWG met in April 2015 and, based on their review of information presented by Callan, Assoc., the Council's independent investment advisor. At the Nov. 19th meeting, Callan Assoc. will review an investment fund performance presentation, which will be an updated version of that presented this spring to the IWG. ADOR will also be available to answer any questions.

FY15 EVOSTC Annual Program Development and Implementation (APDI) Budget

The APDI is reviewed annually by the Council and includes funding for the program administration and implementation, including the EVOSTC office and trust agency staff working with the EVOSTC program. For FY15, the APDI includes funding for proposals that in past years were funded outside the APDI: the ARLIS document digitizing proposal and the Great Land Trust contract. The APDI increases funding for additional habitat and ARLIS public response support due to the increase in activity in both areas.

FY15 Draft Work Plan

The Draft Work Plan contains abstracts for all proposals submitted for FY15 funding. It is a public document and is also available on the EVOSTC website homepage. The FY15 Draft Work Plan includes past and present funding recommendations by the EVOSTC Science Panel, Public Advisory Committee, Science Coordinator and the Executive Director.

For FY15, the Long-Term Programs and non-Program projects are moving along as scheduled and as expected. This year the Long-Term Programs, EVOSTC Science Panel and EVOSTC staff worked together to improve reporting and proposal submissions and this process continues to be helpful for review and coordination. Things are going smoothly overall as the majority of projects in the FY15 Work Plan are established: this is Year Four of the first Five-Year contract for the

Long-Term Programs and the independent projects are also into their subsequent years. New proposals for FY15 include the AOOS Data Supplemental, Fall/ADFG Subsistence Survey and the Michel Lingering Oil in PWS proposals.

At their meeting last week, the PAC supported the funding recommendations of the Science Panel and Science Coordinator to fund all projects and programs as proposed, with two exceptions and one condition:

1. *Jennings NOAA Harbor Protection - Project Management* (see 10.20.14 Draft Work Plan page 121): a reduction in NOAA personnel traveling from D.C. to Anchorage resulting in a total funding of \$6,104.
2. *Bochenek Supplemental Data Management Support* (see 10.20.14 Draft Work Plan Page 73): support funding for a Herring Program Data Coordinator and for work associated with becoming a DataOne node for a total funding of \$121,802. All parties support waiting on other two proposed activities related to preparing data for inclusion in additional databases.
3. *Fall Subsistence Survey Update* (see 10.20.14 Draft Work Plan page 17): the PAC noted the project should conduct outreach with the subject communities prior to surveying. The proposal does outline pre-survey community outreach activities.

EVOSTC Injured Resources and Services List (IRS)

The status of injured resources on the List provides the Trustees and the public a way to monitor recovery of ecological functions and human services that depend on those resources. The list has been updated five times since 1994 with the most recent update occurring in 2010. The 2010 update can be found, along with prior versions, on the EVOSTC website at: <http://www.evostc.state.ak.us/index.cfm?FA=status.injured>

Information for the 2014 update was gathered from the following sources:

1. Trust agency personnel – are reviewing the document, comments due by October 31.
2. Past and present EVOSTC researchers – have reviewed sections appropriate to their field of study.
 - Peer reviewed publications – both EVOSTC funded and non-EVOSTC funded publications were reviewed and incorporated where appropriate.
4. Agency reports and publications – were used for baseline population information and current agency policies.

While the document is quite lengthy, the primary revisions are as follows:

- Barrow's Goldeneye – move from Recovering to Recovered
- Clams - move from Recovering to Recovered
- Harlequin Ducks - move from Recovering to Recovered
- Kittlitz's Murrelets – move from Unknown to Recovering
- Marbled Murrelets – move from Unknown to Recovering
- Mussels - move from Recovering to Recovered
- Pacific Herring – move from Not Recovered to Recovering
- Rockfish - move from Very Likely Recovered to Recovered
- Sea Otters - move from Recovering to Recovered

The status of each resource and service is updated based on peer-reviewed scientific literature, agency reports and publications and final reports from EVOSTC-funded projects. Draft language for individual resources is sent to past and present EVOSTC researchers and recognized experts from outside organizations to review sections appropriate to their field of study. Sections were sent on a rolling basis as they were drafted starting from the end of April through May with comments due in June. As this was the beginning of the field season for many reviewers, it was difficult to get responses within the provided deadline and comments continued to roll in over the course of the summer.

II-draft Review to date:

June 17: A first draft that incorporated the comments received to that date was shared with legal counsel on June 17.

July 9: The science panel received a draft for review on July 9. The science panel's comments were minimal and there was no voiced concern with the proposed updates. Their comments were incorporated into the draft that is currently being reviewed by the agencies.

Sept. 3 and 9: Legal counsel provided additional comments on September 3 and September 9 and their comments were also incorporated into the draft which is attached here.

October 10: This updated draft was sent to agency representatives for their review and comments are due to our office by October 31.

If there are additional comments or revisions based on agency feedback, we will forward that information or any updates to you in advance of the November 19th Council meeting.

Elise

NOTE FROM CHERRI

This is one of two emails with a zip file of the meeting materials attached, it includes the Callan Presentation. The presentation was received late yesterday afternoon after the notebooks were distributed. Your notebook has a tab for the presentation. Please print and insert behind the Callan Presentation.

The attachment to the second email contains the FY 2015 proposals. These proposals were also included in your notebooks. They are not included in the meeting materials on the EVOSTC Events page.

Please contact me if you have any questions.

Cherri

Agenda

Exxon Valdez Oil Spill Trustee Council

4210 University Drive • Anchorage, AK 99508-4626 • 907 278 8012 • fax 907 276 7178



AGENDA

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

November 19, 2014, 9:30 A.M.

Anchorage, Alaska

Trustee Council Members:

LAURI ADAMS

Alternate for Attorney General

Michael C. Geraghty

Alaska Department of Law

JIM BALSIGER

Administrator, Alaska Region

National Marine Fisheries Service

U.S. Department of Commerce

LARRY HARTIG

Commissioner

Alaska Department of

Environmental Conservation

PAT POURCHOT

Special Assistant to the Secretary for

Alaska Affairs

Office of the Secretary

U.S. Department of the Interior

TOM BROOKOVER

Alternate for Commissioner Cora Campbell

Alaska Department of Fish and Game

TERRI MARCERON

Forest Supervisor

Chugach National Forest

U.S. Department of Agriculture

Meeting in Anchorage: USGS Alaska Pacific University Campus, Dr. Glenn A. Olds Hall Conference Room,
4210 University Drive, Anchorage

Teleconference number: 800.315.6338. Code: **72241#**

Federal Chair: Pat Pourchot

1. Call to Order – 9:30 A.M.

Federal Trustees

U.S. Department of the Interior

U.S. Department of Agriculture

National Oceanic and Atmospheric Administration

State Trustees

Alaska Department of Fish and Game

Alaska Department of Environmental Conservation

Alaska Department of Law

- | | | |
|---------------------------|--|--|
| 2 | Consent Agenda (10 min)
- Approval of Agenda*
- Approval of Meeting Notes*
April 8, 2014 | |
| 3. | Executive Director's Report (15 min)
- Investment Policy and Reporting Policy Updates*
- FY 2017-2020 Invitation Prep Schedule
- Great Land Trust Update | Elise Hsieh, Executive Director |
| 4 | Annual Asset Allocation*(5 min) | Elise Hsieh |
| 5 | Public Comment (3 minutes per person) | |
| 6 | Public Advisory Committee Update (5 min.) | Dr Philip Johnson, Designated Federal Officer |
| 7. | Public Advisory Committee Comments (5 min) | Kurt Eilo, PAC Chair |
| 8 | Annual Program Development and
Implementation (APDI) Budget 15120100*(10 min.) | Elise Hsieh
Linda Kilbourne, Admin Manager |
| 9 | Long-Term Programs Intro*(15 min)
- Herring Program 15120111*(15 min)
- Monitoring Program (GulfWatch Alaska)
15120114*(15 min.)
- Data Management 15120114-T*(5 min) | Catherine Boerner, Science Coordinator
Scott Pegau, Herring Program Team Lead
Molly McCammon, GulfWatch Alaska Team
Lead
Catherine Boerner |
| Lunch – 12 00 to 1 00 p m | | |
| 10 | NOAA Clean Harbor Projects*(15 min)
- Project 15120112 NOAA Clean Harbor (Admin)
- Project 15120112-A Cordova Clean Harbor
- Project 15120112-B Cordova Snow Mgmt | Catherine Boerner |
| 11 | Pigeon Guillemot Project*(10 min) | Catherine Boerner |
| 12. | Marine Debris Project 15120116*(10 min.) | Catherine Boerner |
| 13 | Lingering Oil Proposal*(10 min)
Project 15150121 | Catherine Boerner |
| 14 | Subsistence Survey Update*(10 min)
Project 15150122 | Catherine Boerner |
| 15 | Injured Resources and Services Update*(25 min) | Catherine Boerner |

Executive Session: Personnel matters

Adjourn by 4 30 P M

* Indicates potential action items

April 8, 2014 TC
Meeting Notes

Exxon Valdez Oil Spill Trustee Council

4210 University Drive • Anchorage, AK 99508-4626 • 907 278 8012 • fax 907 276 7178



TRUSTEE COUNCIL MEETING NOTES

Anchorage, Alaska

April 8, 2014

Chaired by. Tom Brookover
Trustee Council Member

Trustee Council Members Present

Terri Marceron, USFS
Pat Pourchot, USDOJ
Jim Balsiger, NMFS

Jennifer Schorr, ADOL **
•Tom Brookover, ADF&G *
Larry Hartig, ADEC

- Chair
- * Tom Brookover alternate for Cora Campbell
- ** Jennifer Schorr alternate for Michael Geraghty

The meeting convened at 1 00 p m , April 8, 2014 at the *Exxon Valdez* Oil Spill Trustee Council office, Suite 220, Grace Hall, 4230 University Drive, Anchorage

- 1 Approval of the Agenda and January 27, 2014 meeting notes by mutual consent

Public Comment **No public comments were offered.**

- 2 Approval of Northern Afognak and Triplet Island Conservation Package

APPROVED MOTION

Motion to approve funding of up to \$15,025,000 to the Alaska Department of Natural Resources for the purchase of the Northern Afognak and Triplet Islands Lands, conditioned upon. 1) due diligence reports, which are acceptable to the Alaska Department of Natural Resources and Alaska Department of Law, and 2) provided that the EVOSTC Executive Director, Alaska Department of Natural Resources and Alaska Department of Law find that it is in the best interest of the Council to move forward with acquisition of the Lands.

Federal Trustees

U S Department of the Interior
U S Department of Agriculture
National Oceanic and Atmospheric Administration

State Trustees

Alaska Department of Fish and Game
Alaska Department of Environmental Conservation
Alaska Department of Law

Authorization for funding the purchase of these
Lands shall terminate if a purchase agreement is
not executed by April 1, 2016

Motion by Hartig, second by Schorr

Adjourn

APPROVED MOTION

Motion to adjourn

Motion by Pourchot, second by Schorr

Off the record 1 50 p m

Briefing Summary

A. GROUP: Exxon Valdez Oil Spill (EVOS) Public Advisory Committee (PAC)

B. DATE/TIME: October 16, 2014

C. LOCATION: Dr. Glenn A. Olds Hall, Anchorage, AK

D. MEMBERS IN ATTENDANCE: (T = via teleconference)

<u>Name</u>	<u>Principal Interest</u>
Amanda Bauer	Commercial Tourism
Kurt Eilo	Sport Hunting/Fishing, PAC Chair
Gary Fandrei	Aquaculture/Mariculture
John French	Science/Technical
Stacy Studebaker	Public at Large
Steven Aberle	Commercial Fishing
Emile Springer	Recreation Users
Patience Andersen Faulkner	Subsistence, PAC Vice-chair
Kate McLaughlin	Conservation/Environmental
David Totemoff, Sr.	Native Landowner

E. NOT PRESENT:

<u>Name</u>	<u>Principal Interest</u>
N/A	

F. OTHER PARTICIPANTS:

<u>Name</u>	<u>Organization</u>
Elise Hsieh	Executive Director, Trustee Council (EVOSTC)
Philip Johnson	Designated Federal Official, Department of the Interior
Cherri Womac	Trustee Council Staff
Linda Kilbourne	Trustee Council Staff
Catherine Boerner	Trustee Council Science Coordinator
Carrie Holba	Alaska Resources Library and Information Services (ARLIS)
Katrina Hoffman	Prince William Sound Science Center (PWSSC)
Scott Pegau	Prince William Sound Oil Spill Recovery Institute (OSRI)
Sara Lindberg	Stantec
Jennifer Heindl (T)	Department of the Interior, Solicitor's Office
Matthew Parsons (T)	Department of the Interior, Solicitor's Office
Laurel Jennings (T)	National Oceanic and Atmospheric Administration
Molly McCammon	Alaska Ocean Observing System (GulfWatch)
Dede Bohn (T)	U.S. Geological Survey
Peter Hagen (T)	National Oceanic and Atmospheric Administration
Phil Shepard	Great Land Trust
Kristin Carpenter (T)	Copper River Water Shed Project
Tammy Neher (T)	NOAA Kasitsna Bay Laboratory

Kris Holderied (T)
Barat LaPorte

NOAA Kasitsna Bay Laboratory
Oles Morrison Rinker Baker, LLP

H. SUMMARY:

At 09:35 a.m. the Designated Federal Official (Philip Johnson) opened the meeting and took roll call of PAC members. All members were present, establishing a quorum. The meeting participants introduced themselves.

Chairman Kurt Eilo provided introductory remarks, noting that projects could be accepted "as is" or modified through resolution.

Motion: John French introduced a motion to accept the amended agenda. Seconded by Gary Fandrei. **Motion carried.**

Motion: Kate McLaughlin introduced a motion to approve the meeting notes from the last meeting. Seconded by Fandrei. **Motion carried.**

The draft meeting summary was signed by Chair Eilo.

FACA Briefing: Jennifer Heindl, with the Department of the Interior Office of the Solicitor provided a Federal Advisory Committee Act (FACA) briefing.

PAC Travel: Linda Kilbourne provided information regarding PAC travel and the reimbursement process.

Public Comment: The floor was open for public comment, either in person or telephonically. No members of the public requested the opportunity for comment.

Executive Director's Report:

Elise Hsieh discussed the federal government shutdown in 2013, which resulted in the PAC missing a meeting last year. Hsieh also noted that the EVOS Trustee Council (EVOSTC) accepts public comment at any time. Members of the public can email the EVOSTC Executive Director.

Hsieh provided the Executive Director's report, beginning with the financial report. Changes were made to the Reporting Policy and new forms were developed to enhance consistency and submission of information for review. Revised draft EVOSTC Investment and Reporting Policies have been developed and will be presented to the EVOSTC at their November 19, 2014 meeting.

Koniag sub-account funds were moved to the Habitat sub-account and the Conservation Easement with Koniag was terminated. This change will provide additional funds for the Habitat Program, which can then be used for other projects.

Habitat Program Report:

Hsieh reported that the Great Land Trust (GLT) continues their work with the EVOSTC and associated agencies, including the United States Fish and Wildlife Service (USFWS), and the

Alaska Departments of Natural Resources (ADNR) and Law (ADOL) on Habitat Program projects. GLT actively seeks significant grant funding from other sources to compliment EVOSTC funding to carry out the projects. Habitat projects require willing sellers and a government agency that will manage the lands

During the first year, 2013, GLT focused on the Kodiak Afognak Archipelago area using a Land Conservation Prioritization to identify high-ranking habitat for conservation. They met with Kodiak landowners, including several Native corporations, the Kodiak Borough Mayor, Manager and staff from Mental Health Trust Land Office, USFWS and other stakeholders during this process.

A number of potential projects emerged from these meetings and site visits. GLT ordered and obtained appraisals for several of these projects.

Great Land Trust has also applied for and received \$1,000,000 matching funding from USFWS for a project in Kodiak and is working with the Conservation Fund to coordinate the use of the mitigation funds available from the Kodiak airport expansion

For the second year, 2014, at the request of the Trustees, the GLT expanded their focus to include all of the spill area. Using a Land Conservation Prioritization that GLT developed specifically for the Kodiak Afognak Archipelago, GLT identified multiple high-ranking conservation projects and has begun due diligence and negotiations with landowners on six of the highest-ranking projects. GLT continued to meet with Kodiak landowners and pursued the protection of approximately 36,370 acres of land on Northern Afognak Island and the Triplet Islands, currently owned by Ouzinkie Native Corporation. This acquisition was approved by the EVOSTC in April 2014, the Alaska State Legislature, and the Governor, and is moving forward. Due diligence is nearly complete and a draft Purchase and Sale Agreement has been completed. In addition, other potential projects have been assessed and negotiations continue with landowners.

In Years 3 and 4, GLT will expand the Land Conservation Prioritization to include the entire spill area and will continue due diligence and negotiations. All potential projects need to be approved by the EVOSTC.

Also per Trustees' request at their meeting last spring, the Habitat Program is looking at subsurface rights for those parcels already funded or looking to be funded by the EVOSTC. The interest in subsurface rights is prompted by known potential subsurface commodities (e.g., granite mining for countertops) and the potential presence of other subsurface resources that may be of value in the future

Five-Year Invitational Cycle (2017-2021):

The upcoming Science Workshop scheduled for February 4-6, 2015 will provide an opportunity for the Science Panel to meet with the long-term programs and review up to years 3-4 of the programs. After the Workshop, EVOSTC staff will draft the FY17-21 Invitation and it will be circulated to the PAC in July 2015. The PAC will consider and act on this draft at their October 2015 meeting, followed by the Science Panel and the Council review later that fall

The PAC could have a telephonic meeting at the end of July 2015, if needed to discuss the Draft. Hsieh recognized the excellent work of Catherine Boerner, the EVOSTC Science Coordinator and

the EVOSTC staff.

Eilo recommended having a briefing for the PAC on the Draft in mid-July. If a quorum is not present, PAC members can still submit individual (public) comments to the EVOSTC Executive Director.

It should be noted that these actions will involve a new PAC, whose term will begin on or after December 1, 2014. After December 1, the DFO can call a meeting of the new PAC to ensure they are oriented and seated.

PAC Member Discussions:

David Totemoff, Sr. asked about long-term funding for EVOSTC projects and the EVOSTC. Hsieh clarified that the trust funds obtained from the EVOS settlement are not intended to be perpetual. The current vision set forth by the EVOSTC is to conduct a 20-year program for organized spend down of the funding. The EVOSTC uses long-term planning to anticipate spending and activities. However, the Council reviews the Restoration Program and approves funding on an annual basis.

With current market performance, the long-term spending scenario indicates an approximately 8% chance of not being able to complete the anticipated 20-years of long-term programs. However, this projection is highly speculative as it is based on fluctuating market performance. Totemoff expressed concerns about phasing out of the EVOSTC and the future of Prince William Sound (PWS) without the EVOSTC.

Emilie Springer asked about the present EVOSTC's vision. Hsieh thought they were pleased with the 20-year program, but the Executive Director cannot officially speak on their behalf.

The PAC Chair will attend the EVOSTC meeting and report on accomplishments from this meeting.

Steve Aberle asked what is the term of the EVOSTC members? The answer is there is no set term.

Annual Program Development and Implementation (APDI) Budget:

Hsieh noted that the APDI includes funding for projects (GLT and ARLIS document digitizing) and thus is larger than in the past when projects were separated out.

The Budget Summary Table on page 3 of the APDI shows an increase in funding for habitat protection. This can be attributed to GLT expenses for parcel acquisition and due diligence activities. It also reflects costs for ADOL and ADNRR staff time associated with the Habitat Program including oversight of land acquisitions and legal oversight.

Kilbourne summarized the remaining information found in the Summary Budget Table (page 3 of the APDI).

The Alaska Resource Library & Information Service (ARLIS) costs also increased. This includes contractual costs for Phase III of a project to digitize EVOS documents and provide electronic access to data. Media, public, government agency and NGO interest in EVOS information

increased post-Deepwater Horizon, and with the recent 25th Anniversary of the EVOS. Detailed information on the EVOSTC Document Digitizing Project was provided with the meeting materials.

ARLIS is the physical repository for the EVOSTC's collection of oil spill materials and, since 1992, houses some non-digital data from Natural Resource Damage Assessment Projects. A PAC member asked if ARLIS is funded in perpetuity. ARLIS is supported by the eight founding partners, currently including the EVOSTC.

French indicated that some of the digitized data are in large files that are hard to deal with and discourage access. Holba discussed long-term record retention and archiving for the state and federal governments.

Technology will continue to evolve and the EVOSTC will need to think long-term. The physical library of records will remain at ARLIS and be maintained pursuant to a partnership agreement between founding agencies. The EVOSTC website will need to be maintained by a Trust or resource agency.

Eilo recommended making the EVOSTC aware of the value of this data and increased interest in EVOS data post-Deepwater Horizon and following the 25th Anniversary of EVOS. Approximately 20% of questions at ARLIS are EVOS-related. Hsieh will send the annual ARLIS statistics to the PAC and TC in a monthly update to facilitate this awareness.

The PAC in the past has voiced a need to look at the future and data retention. The PAC Chair will highlight ARLIS statistics in the future.

French raised the issue of "relevant data" indicating that the Principal Investigator (PI) would evaluate this in the context of the original project proposal. French stated that the context and relevance of the data may change with time. Because of this he believes that the more data preserved, the better.

Fandrei noted that this is a FACA committee and thus the PAC term is two years. Eilo would like the PAC to be aware of past motions. Hsieh will work with the DFO to see if they can list past motions from the last couple years and circulate it before PAC meetings.

Hsieh asked if there were budget questions. She indicated that the draft budget, as with all TC meeting materials, continue to be reviewed up until the meeting and any substantive revisions will be forwarded to the PAC.

Ethics Briefing: Matt Parsons with the Department of the Interior's Office of the Solicitor provided the PAC with a briefing on Ethics during a working lunch.

Program Presentations:

Prince William Sound Herring Research and Monitoring Program - Pegau provided an update on this program. A primary goal of the research is to improve predictive models through observation and monitoring and to identify why the herring populations in PWS have not recovered.

Current research is testing existing assumptions to ensure they are still valid. Project categories

include monitoring, process, synthesis, and new techniques. Key aspects include Alaska Department of Fish & Game age structure analysis modeling, the Sound Ecosystem Assessment, PWS Herring Survey and a partnership with GulfWatch Alaska. Ongoing work includes disease monitoring, condition assessment, genetic analysis, population modeling, the energy content of young fish, and acoustic monitoring and tagging of herring.

Totemoff, Sr., discussed stress in herring. The herring roe he has collected in PWS since 1989 have shown broken blood vessels. Once that phenomenon ceases, he will know that the effects of the oil spill have subsided.

GulfWatch Alaska – Hoffman presented information on this integrated program, which includes 15 field monitoring projects studying environmental drivers, the pelagic ecosystem, benthic ecosystems and lingering oil.

Activities in 2013 and 2014 included establishing a data portal (with the Alaska Ocean Observing System), updating the website, public outreach events, school visits, lectures and Delta Sound Connections articles.

Increased temperatures in the Gulf of Alaska have been observed. Also observed during the same period is a ten-fold increase in the abundance of small copepods (a marine invertebrate).

GulfWatch Alaska's Pelagic Ecosystem Team has studied wintering seabirds, forage fish populations, humpback whales (including estimates of predation on herring), killer whales, and storm petrel declines.

The Nearshore Benthic Team has investigated mussel bed declines in Kenai Fjords and Katmai National Parks and in Prince William Sound. A study of sea otter populations in western PWS shows a return to population levels observed before the EVOS.

Lingering Oil studies show that physiological markers of oil exposure in Harlequin ducks (CYP1A) were not different between areas that were oiled during EVOS and unoiled areas. This suggests that this species is no longer exposed to oil, consistent with sea otter observations noted above.

A Synthesis Report is due in December 2014, which will be followed by a Science Workshop in February 2015.

During a discussion of pigeon guillemot spatial distribution, French asked if we knew where alcid seabirds overwinter in the Gulf of Alaska area. One of his concerns was the impact of Navy training activities along the productive shelf area.

Draft Work Plan for Fiscal Year 2015:

Boerner led this discussion, as EVOSTC Science Coordinator (SC). Revised proposal and reporting formats are being used this year that provide a more streamlined submission. The intent is to get at "real" information needs.

The EVOSTC Science Panel (SP) provided an overall recommendation to fund all projects in the Draft Work Plan for FY2015 (Work Plan) with the exception of two projects. They also had

comments regarding the Hollmen Project (15120114-I, page 53 of the Work Plan) and the specifics of its model. They will get more information from the PI at the February Workshop.

None of the projects in the Draft Work Plan are intended to go beyond FY 2016.

Some projects have altered their design to help improve the overall Synthesis.

Supplemental Data Management Project (15120114-T, page 88 of the Work Plan) was discussed. The goal is to put information into the “DataOne” system, to rapidly make the data accessible to other researchers and the public. The SP recommended funding this project at \$121,803 which is less than the original request but fund the first and second tasks in the proposal (Herring Data Coordinator and work to become a DataOne node).

The PWS Herring Program – The SP recommended funding all the Herring projects, as the data are being used by management agencies. The PAC had no questions regarding the Herring proposals.

The SP recommended that Project 15120112 (NOAA Harbor Protection – Project Management, page 145) be funded at a reduced level of \$6,104, which does not include funding for NOAA personnel flying from D.C. to Alaska.

The group discussed the Pigeon Guillemot Restoration Project (15100853, page 7). This is a project designed to cull and control (but not eradicate) mink populations in the Naked Island group in PWS. The SP had questions about the design, as mink can swim and concerns were raised about recolonization from nearby islands. This is an “active restoration” project, however, and it will be an interesting experiment that should add new scientific information. McLaughlin asked whether locals could help the trappers who are implementing this project. Hsieh noted local trappers were solicited and McLaughlin noted the low price of mink and thus lack of incentive. There was also discussion of the merits of exclusion techniques. While some concerns were noted, the PAC took no specific action regarding this project.

The PAC also discussed the Marine Debris Project (15120116, page 12). Discussion included the presence of debris related to the 2011 tsunami in Japan, questions about the merits of this work relative to how much debris is present in the ecosystem and financial justification for the project. While one PAC member suggested the project needed more funding, others mentioned large marine debris-related grants from NOAA and other funders. Given that this is a large and pervasive problem, the use of limited EVOSTC funds was questioned. The link to the EVOSTC’s overall plan and mission was also questioned. The Executive Director indicated that the project was nearing the end of its funding cycle. One PAC member (McLaughlin) wanted to see more science on this issue, including a look at the biological impacts of marine debris and water sampling.

The PAC discussed Project 15150121 (Lingering Oil in PWS, page 17). This is a one-year project to conduct spatial modeling of lingering oil relative to sea otter abundance (using 2013 data). Another aspect of the project involves evaluation of treatment and remediation methods including aeration techniques to accelerate removal of lingering oil. This project was viewed as an efficient and useful evaluation of existing data.

The PAC also discussed Project 15150122 (Subsistence Survey Update, page 19). This is an

update to previous studies conducted in 1998 and 2008. The same researcher (James Fall) who conducted the first two surveys will also conduct this project. The SP raised concerns regarding the limited information on survey design, high cost per household, and availability of alternative foods that could influence the project. The SP did however express a high degree of confidence in the PI.

The PAC discussion of the Subsistence Survey Update included concerns over survey design and the reluctance of some community members to discuss their subsistence activities. Pre-survey education/outreach efforts to the local communities were suggested to help impress upon the communities the importance of the survey. The SC pointed out that the proposal does include pre-survey outreach activities.

French stated that this type of data is important and the researchers need to use the same methods used in the previous two surveys. Maintaining consistency with the previous work is needed for analyzing trends.

Patience Andersen Faulkner, the Subsistence member of the PAC, stated it is important to do a survey.

The SP did not make a funding recommendation on this project as they had an earlier, less complete proposal draft.

Motion: The PAC recommends that the Subsistence Survey Update Project (15150122) be funded with the condition that the local communities are well informed before surveys are conducted.

Motion passed.

Motion: The PAC supports all funding recommendations made by the Science Panel and the Science Coordinator, including reduced funding amounts for two projects (15150114-T and 15120112). **Motion passed.**

Injured Resources and Services:

In 2010, the EVOSTC and PAC engaged in lengthy discussion and deliberation of the status of injured resources, language used in categorizing injured resources and other factors (such as regime shifts) which may complicate assessment of the extent of recovery.

Table 1 of the Draft 2014 Update of Injured Resources and Services was presented by the EVOSTC SC, highlighting species that have changed status.

Concern was raised regarding the proposed status of Kittlitz's murrelets because they are dependent on glacial ice presence in PWS and populations within the Sound appear to be declining.

There was discussion of adding an "asterisk" (*) to populations thought to be affected by other factors that are independent of oil exposure. Kittlitz's murrelets would be an example.

French raised concerns about pigeon guillemots and the predation model, as their populations are low throughout PWS, not just at Naked Island. He had questions regarding an increase in markers of oil exposure (P450), changes in forage fish populations, and the fact that this species feeds on

benthic invertebrates that may be exposed to lingering oil. The SC noted that the mink removal study would utilize a control island to account for other factors, and the reason for the project studying Naked Island is due to its previously large population of pigeon guillemots

The PAC expressed interest in other factors that could be affecting resource recovery such as paralytic shellfish poisoning (PSP) which can be found in clams and other invertebrates.

Motion: The PAC requests that the FY 2017-2021 Invitation [for Proposals] include paralytic shellfish poisoning (PSP) as a factor potentially affecting declining (including *recovering* or *not recovered*) seabird populations. **Motion passed.**

The SC asked for comments on the draft designations, and no concerns were expressed by the PAC. Eilo noted that with these new designations, none of the resources would be designated with an *Unknown* status which they felt was a positive shift.

Closing Remarks:

The PAC Chair will attend the November 19 EVOSTC meeting and report on this PAC meeting. It was noted that there will be new PAC membership (starting on or after December 1, 2014) and a new Chair. The date of the last appointment letters was November 30, 2012. The term of PAC membership is two years. Two years from the above date will be December 1, 2014.

While not explicitly discussed at the meeting, it should be noted that the 2-year term of each new PAC member will be effective on the date the appointment letter is signed by the Secretary of the Interior, which is expected to be on December 1, 2014. The terms of all 2014-2016 PAC members will expire on November 30, 2016.

Eilo requested a list of past motions and resolutions passed by the PAC. To do this the EVOSTC staff or DFO would need to search the records of past meetings to develop such a list.

Stacy Studebaker has been on the PAC for almost 20 years. Her view is that the process has gone well, and this meeting was less contentious than some past meetings. She thanked the Executive Director and EVOSTC Staff. She is thrilled with the emphasis on habitat restoration, which will leave a great legacy and long-term benefit.

Springer stated that she wished that the PAC term was longer than two years, as it takes time to come up to speed. It was noted during the PAC discussion that the two-year term is outlined in the PAC Charter and is due to FACA requirements.

The fact that there are few young people on the PAC was also discussed. Womac stated that the EVOSTC staff cast a wide net in recruiting new members and Hsieh noted that this is a voluntary process.

Andersen Faulkner also noted the graying of Boards and Commissions. She complimented the EVOSTC staff on providing excellent summaries that are distributed frequently. She also expressed regret that a meeting was not held last year.

Hsieh noted that following the government shutdown, there was not time to schedule a PAC meeting before the last EVOSTC meeting of 2013. She also noted that the "monthly" updates

depend on having “substance” to disseminate so may be later in the month or combined with another month if the timing and availability of the information warrants it.

French also remarked on the age of the group and expressed the need to engage younger generations. He noted that not only PSP could be a non-oil factor of concern, but other issues like domoic acid could also be a concern. French highlighted the need for information on wintering seabird distributions and behavior, and that telemetry studies are needed to interpret recovery of these species.

The Chair (Eilo) and the DFO (Johnson) thanked the PAC for their work.

The meeting was adjourned at 4:00 p.m.

I. FOLLOW-UP:

1. Eilo will provide an oral PAC report to the Trustee Council at their next meeting.
2. New PAC to be oriented and seated subsequent to December 1, 2014.
3. The PAC established on or after December 1, 2014 will attend a one-day Long-Term Programs Workshop in February 2015.

J. NEXT MEETINGS:

Trustee Council (Anchorage on November 19, 2014)
Science Workshop (Anchorage on February 4, 2015)

K. ATTACHMENTS (handed out at the meeting):

1. None

L. CERTIFICATION:

PAC Chairperson

Date

15120100 APDI
Includes ARLIS / GLT

Exxon Valdez Oil Spill Trustee Council
FY15 Annual Program Development and Implementation (APDI) Budget
February 1, 2015– January 31, 2016

This document describes Annual Program Development and Implementation (APDI) activities. For the actual amounts authorized for funding, please see the FY15 Annual Funding Overview (AFO).

This budget structure is designed to provide a clearly identifiable **12-month** allocation of the funds supporting Trustee Council activities. The program components are:

- Administration Management
- Data Management
- Science Program
- Public Advisory Committee (PAC)
- Habitat Protection Program
- Trustee Council Member Expenses
- Trustee Agency Support/Project Management
- Alaska Resources Library & Information Services (ARLIS)

The budget estimates detailed within those specified program components are projected based upon prior year actual expenditures and include the application of estimated merit step increases, as well as payroll benefits increases. The detailed budget component items cover necessary day-to-day operational costs of the *Exxon Valdez* Oil Spill Restoration Office and administrative costs associated with overseeing current Trustee Council program objectives.

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BUDGET SUMMARY INFORMATION - \$2,319,025

The Council's FY15 APDI Budget is funded by the *Exxon Valdez* Oil Spill Investment Fund which is managed by the Alaska Department of Revenue. The following summary tables show budget allocations by component, budgeted amount, and include 9% General Administration (GA) costs. The remainder of the document provides additional detail for each component and, where applicable, the agency distribution for the funds.

Component	FY14 Total Budget	FY15 Total Budget
Administration Management	\$710,545	\$729,754
Data Management	\$63,874	\$68,125
Science Program	\$286,877	\$300,420
Public Advisory Committee (PAC)	\$19,047	\$20,611
Trustee Council Member Expenses	\$1,962	\$2,180
Habitat Protection Program	\$242,634	\$668,758
Trust Agency Support/Project Management	\$326,312	\$339,395
Alaska Resources Library & Information Services (ARLIS)	\$118,304	\$189,782
Total	\$1,769,555	\$2,319,025

(\$549,470 more than FY14 allocations due to: The Great Land Trust (GLT) FY15 \$303,800 contract is included in the Habitat component of the APDI this year versus funded separately. Remaining increases fund agency support for habitat activities (ADNR & ADOL), habitat map updates (ADNR), and public/media information requests (ARLIS).

APDI 5-Year 12-Month Budget Comparison FY11 – FY15					
Component	FY11 Budget	FY12 Budget	FY13 Budget	FY14 Budget	FY15 Budget
Administration Management	\$813,693	\$708,137	\$726,893	\$710,545	\$729,754
Data Management	\$152,080	\$137,885	\$57,143	\$63,874	\$68,125
Science Management	\$231,336	\$287,471	\$160,662	\$286,877	\$300,420
Public Advisory Committee (PAC)	\$37,060	\$16,132	\$16,486	\$19,047	\$20,611
Trustee Council Member Direct Expenses	\$29,975	\$1,199	\$1,635	\$1,962	\$2,180
Habitat Protection Program	\$109,000	\$192,274	\$208,311	\$242,634	\$668,758
Trust Agency Support/Project Management	\$339,774	\$297,510	\$297,510	\$326,312	\$339,395
Alaska Resource Library & Information Services	\$137,119	\$71,182	\$75,406	\$118,304	\$189,782
Total	\$1,834,123	\$1,711,790	\$1,544,046	\$1,769,555	\$2,319,025

(Public Information & Outreach component added to Administration Management in FY2011)

APDI 5-Year 12-Month Cost Type Comparison FY11 – FY15					
Cost Type	FY11 Budget	FY12 Budget	FY13 Budget	FY14 Budget	FY15 Budget
Personnel	\$1,112,766	\$913,325	\$959,996	\$1,070,942	\$1,180,246
Travel	\$67,000	\$45,100	\$23,000	\$104,300	\$81,995
Contractual	\$473,095	\$554,775	\$395,634	\$407,040	\$826,305
Commodities	\$32,500	\$32,250	\$28,701	\$26,163	\$32,000
Equipment	\$24,500	\$25,000	\$9,225	\$15,000	\$7,000
Subtotal	\$1,682,681	\$1,570,450	\$1,416,556	\$1,623,445	\$2,127,546
GA – 9%	\$151,442	\$141,340	\$127,490	\$146,110	\$191,479
Total	\$1,834,123	\$1,711,790	\$1,544,046	\$1,769,555	\$2,319,025

Total FY15 APDI Budget from Restoration Sub-Account	
Admin Mgmt.	\$729,754
Data Mgmt.	\$68,125
Science Prgm.	\$300,420
PAC	\$20,611
TC Expense	\$2,180
Trust Agency	\$339,395
ARLIS	\$189,782
Total	\$1,650,267

Total FY15 Budget from Habitat Sub-Account	
Habitat	\$668,758
Total	\$668,758

APDI 8-Year 12-Month Budget Comparison FY08 – FY15								
Component	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Administration	\$743,824	\$720,572	\$804,663	\$813,693	\$708,137	\$726,893	\$710,545	\$729,754
Data Management	\$214,294	\$210,902	\$149,991	\$152,080	\$137,885	\$57,143	\$63,874	\$68,125
Science Management	\$368,202	\$696,129	\$468,539	\$231,336	\$287,471	\$160,662	\$286,877	\$300,420
Public Information & Outreach	\$40,330	\$183,665	\$136,850	\$0	\$0	\$0	\$0	\$0
Public Advisory Committee (PAC)	\$37,060	\$48,505	\$37,605	\$37,060	\$16,132	\$16,486	\$19,047	\$20,611
Trustee Council Member Direct Expenses	\$29,975	\$29,975	\$29,975	\$29,975	\$1,199	\$1,635	\$1,962	\$2,180
Habitat Protection Program	\$109,000	\$109,000	\$109,000	\$109,000	\$192,274	\$208,311	\$242,634	\$668,758
Trust Agency Support/Project Management	\$363,951	\$354,339	\$367,033	\$339,774	\$297,510	\$297,510	\$326,312	\$339,395
Alaska Resource Library & Information Services	\$167,533	\$177,565	\$166,372	\$137,119	\$71,182	\$75,406	\$118,304	\$189,782
Total	\$2,270,028	\$2,530,652	\$2,270,028	\$1,834,123	\$1,711,790	\$1,544,046	\$1,769,555	\$2,319,025

Total FY15 APDI Budget by Agency from Habitat Sub-Account						
Cost Type	ADF&G	ADOL (through ADFG RSA)	ADNR	DOI FWS	DOI BLM	Total Budget
Personnel	\$0	\$98,739	\$90,000	\$25,000	\$6,000	\$219,739
Travel	\$2,500	\$0	\$2,500	\$0	\$0	\$5,000
Contractual	\$0	\$0	\$75,000	\$303,800	\$2,000	\$380,800
Commodities	\$0	\$0	\$8,000	\$0	\$0	\$8,000
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$2,500	\$98,739	\$175,500	\$328,800	\$8,000	\$613,539
GA – 9%	\$225	\$8,887	\$15,795	\$29,592	\$720	\$55,219
Total	\$2,725	\$107,626	\$191,295	\$358,392	\$8,720	\$668,758

Total FY15 APDI Budget by Agency from Research Sub-Account									
Cost Type	ADF&G	ADEC	NOAA	DOI USGS	DOI FWS	DOI SEC	DOI OEPC	USFS	Total Budget
Personnel	\$730,226	\$0	\$90,000	\$55,972	\$9,400	\$25,000	\$6,909	\$43,000	\$960,507
Travel	\$73,495	\$0	\$1,500	\$0	\$0	\$2,000	\$0	\$0	\$76,995
Contractual	\$353,505	\$0	\$2,000	\$90,000	\$0	\$0	\$0	\$0	\$445,505
Commodities	\$21,000	\$0	\$0	\$3,000	\$0	\$0	\$0	\$0	\$24,000
Equipment	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,000
Subtotal	\$1,185,226	\$0	\$93,500	\$148,972	\$9,400	\$27,000	\$6,909	\$43,000	\$1,514,007
GA – 9%	\$106,670	\$0	\$8,415	\$13,407	\$846	\$2,430	\$622	\$3,870	\$136,260
Total	\$1,291,896	\$0	\$101,915	\$162,379	\$10,246	\$29,430	\$7,531	\$46,870	\$1,650,267

ADMINISTRATION MANAGEMENT - \$729,754

Cost Category	FY14 Total 12- Month Budget for Comparison	FY15 Total 12- Month Budget
Personnel	\$478,163	\$497,014
Travel	\$4,500	\$5,500
Contractual	\$145,050	\$145,485
Commodities	\$22,163	\$19,500
Equipment	\$2,000	\$2,000
Subtotal	\$651,876	\$669,499
GA - 9%	\$58,669	\$60,255
Total	\$710,545	\$729,754

(\$19,209 more than FY14 due to incremental contract increases throughout)

PERSONNEL - \$497,014

Position	Range /Step	Months	Monthly Cost	12-Month Cost
Executive Director – Elise Hsieh	28/F	12	\$15,271	\$183,254
Librarian III – Carrie Holba	19/O	6	\$12,184	\$73,106
Associate Coordinator – Cherri Womac	18/L	12	\$10,426	\$125,115
Administrative Manager – Linda Kilbourne	19/E	12	\$9,628	\$115,539
Personnel Total				\$497,014

Cost includes benefits. Librarian 12-month allocation split between ARLIS/Admin.

TRAVEL - \$5,500

These funds are for travel support for meetings and trainings.

CONTRACTUAL – \$145,485

- Professional Development**

\$250

Administrative funds are budgeted for in-state training and professional meetings with state, federal or program agency representatives on administrative, program or budget issues as necessary.

- Trustee Council's Office Space**

\$90,000

The Trustee Council's office relocated to Grace Hall on the Alaska Pacific University campus in Anchorage in summer 2012. The space for the Trustee Council's office is administered through a Memorandum of Agreement (MOA) with the U.S. Geological Survey of the Department of Interior.

- Agreed-Upon Services Contract**

\$21,510

These funds support an Agreed-Upon Procedures (AUP) contract (currently Elgee, Rehfeld, Mertz) for the review of targeted financial transactions of the Trustee Office and agencies receiving EVOSTC funds.

- **Investment Services Contract** **\$8,000**
These funds support investment consultation services (currently Callan Associates) in association with the Investment Working Group
 - **Telephone Service** **\$3,200**
These funds are for telecommunications, teleconferencing meetings, and long distance phone services. Also includes annual cell phone allowance each for ED and AM
 - **Public Notices** **\$2,100**
These funds are for advertising Trustee Council public meetings and workshops in newspapers in the spill-affected areas
 - **Postage & Courier Services** **\$325**
These funds are for US Postal Service mailings, express mailings, and courier services beyond those provided under interagency supplies below
 - **Transcription** **\$2,900**
These funds are for the transcription service contract to record and preserve Trustee Council meetings
 - **Water Service and Recycling** **\$1,200**
These funds are for water service to provide coffee, tea, and water for meetings held at the EVOSTC office and recycling service
 - **Interagency Contracted Services** **\$16,000**
These funds are for the Trustee Office's share of the Reimbursable Services Agreement costs relating to the EPR Telecommunications, Computer Services, ADA, Central Mail and AKSAS & AKPAY charge-backs paid by all ADF&G divisions These costs are based on the number of full time positions divided by the total cost
-

COMMODITIES - \$19,500

- **Office Supplies** **\$6,000**
These funds are for miscellaneous office supplies, paper, toner, meeting materials, etc. Also includes supplies needed to complete the official record
 - **Trustee Council Meetings** **\$2,500**
These funds are for materials and incidentals for one teleconferenced and one in-person TC meeting.
 - **Administrative Operations** **\$8,000**
These funds are for unanticipated expenses due to the extensive tailoring of the budget
 - **Interagency Supplies** **\$3,000**
These funds are for the Trustee Office's share of USGS costs for office supplies, postage usage, office equipment usage, Glen Olds Hall receptionist, flu shots
-

EQUIPMENT - \$2,000

These funds are to purchase equipment (i e fax, scanner, and /or printer) as needed to meet the needs of the EVOSTC office as equipment ages out

AGENCY DISTRIBUTION:

Admin Management Cost Category	ADF&G	USGS	12- Month TOTAL
Personnel	\$497,014	\$0	\$497,014
Travel	\$5,500	\$0	\$5,500
Contractual	\$55,485	\$90,000	\$145,485
Commodities	\$16,500	\$3,000	\$19,500
Equipment	\$2,000	\$0	\$2,000
Subtotal	\$576,499	\$93,000	\$669,499
GA - 9%	\$51,885	\$8,370	\$60,255
Component Total	\$628,384	\$101,370	\$729,754

DATA MANAGEMENT - \$68,125

Cost Category	FY14 Total 12- Month Budget for Comparison	FY15 Total 12- Month Budget
Personnel	\$0	\$0
Travel	\$0	\$0
Contractual	\$42,100	\$54,000
Commodities	\$3,500	\$3,500
Equipment	\$13,000	\$5,000
Subtotal	\$58,600	\$62,500
GA - 9%	\$5,274	\$5,625
Total	\$63,874	\$68,125

(\$4,251 more than FY14 due to COLA)

PERSONNEL - \$0

TRAVEL - \$0

CONTRACTUAL – \$54,000

- **Equipment Maintenance**

\$1,500

These funds are for minor equipment maintenance and repairs.

- **IT Services RSA: Alaska Dept. of Fish & Game**

\$52,500

The funds are for supporting the IT needs of the Trustee Council office (\$40,500 for Sport Fish IT group and \$12,000 for DAS IT group).

COMMODITIES - \$3,500

- **Computer Software, Hardware & Upgrades**

\$3,000

These funds are for necessary purchases and upgrades to computer hardware, software, software licenses, and networking equipment for the Trustee Council Office (i.e. annual Microsoft licensing Agreement).

- **Equipment Supplies**

\$500

These funds are for miscellaneous supplies.

EQUIPMENT - \$5,000

These funds are for replacement of existing equipment and/or new equipment purchases.

AGENCY DISTRIBUTION

Data Management Cost Category	ADF&G 12- Month TOTAL
Personnel	\$0
Travel	\$0
Contractual	\$54,000
Commodities	\$3,500
Equipment	\$5,000
Subtotal	\$62,500
GA - 9%	\$5,625
Component Total	\$68,125

SCIENCE PROGRAM – \$300,420

Cost Category	FY14 Total 12- Month Budget for Comparison	FY15 Total 12- Month Budget
Personnel	\$0	\$0
Travel	\$86,500	\$58,995
Contractual	\$176,690	\$216,620
Commodities	\$0	\$0
Equipment	\$0	\$0
Subtotal	\$263,190	\$275,615
GA - 9%	\$23,687	\$24,805
Component Total	\$286,877	\$300,420

(\$13,543 more than FY14 due to scheduled meetings)

PERSONNEL – \$0**TRAVEL - \$58,995**

- Travel & Support**

\$6,500

This provides support and travel for science oversight, TC meetings, and symposia and to allow for unanticipated additional participants at science review sessions.

- Science Coordinator Travel**

\$7,000

This provides travel support costs for the EVOSTC Science Coordinator to represent EVOSTC at Trustee Council, PAC, annual Long-Term Programs', Science Panel, and other meetings as deemed necessary by the Executive Director.

- Science Workshop (February 2015)**

\$3,500

This provides support and travel for unanticipated additional participants and expenses. (See also costs allocated in FY2014 budget.)

- Science Panel Meeting (April 2015)**

\$20,222

These funds support for travel to the Science Panel, EVOSTC staff, and other individuals (12 participants for 1-2 days) to discuss the FY17 Invitation. Estimated costs include:

1. Airfare	\$ 9,525
2. Lodging	\$ 4,577
3. Per Diem	\$ 2,120
4. Surface Transportation	\$ 500
5. Catering /Meeting Space	\$ 3,500
Total	\$20,222

(Funds for Science Panel participation [contractual services] will be paid out of authorized contracts.)

- Science Panel Meeting (Fall 2015)**

\$21,773

These funds support for travel to the Science Panel, EVOSTC staff, and other individuals (12 participants for 2 days) to include:

6. Airfare	\$ 10,060
7. Lodging	\$ 5,174
8. Per Diem	\$ 2,039

9	Surface Transportation	\$ 1,000
10	Catering/Meeting Space	\$ 3,500
	Total	\$ 21,773

(Funds for Science Panel participation [contractual services] will be paid out of authorized contracts)

CONTRACTUAL - \$216,620

◦ Science Coordinator Contract: Catherine Boerner of Natura Consulting \$120,120

This contract provides science management services including project management, proposal coordination, implementation and oversight, and Work Plan support

◦ Science Panel \$90,000

The Science Panel provides advice and feedback to the Executive Director and Council. Their work includes providing funding recommendations on scientific proposals to the Executive Director, providing assistance on special projects at the Executive Director's or Trustee Council's request, and participating at one in-person meeting

The members are George Boehlert, Gary Cherr, Douglas Hay, Gordon Kruse, Steven Morgan, Roger Nisbet, Ronald O'Dor, Charles Peterson, Robert Spies, and John Stachowicz. Each contract covers services provided for the period of February 1, 2015 through January 31, 2016, and payable by actual time invoiced. The contracts are set at \$9,000 each

◦ Herring Program Oversight Committee \$4,000

This group works with the Long-Term Herring Program to ensure the Program meets its goals, assist setting future research priorities, and to provide feedback to the Council, through the Executive Director. Members approved by the EVOSTC Executive Director, in consultation with the Program, ADF&G and NOAA. Current members include Herring Program Team Lead: W. Scott Pegau; ADF&G representative: Sherri Dressel, NOAA representative: Stanley 'Jeep' Rice, and an Academic position: Steven Martell; and Peter Hagan, NOAA. Contracts for Jeep and Steven are set at \$2,000 each.

◦ Peer Review Contracts \$2,500

To ensure the scientific integrity of findings, and to assist with the review of the Council's programs, the Trustee Council requires peer review by nationally-recognized experts within applicable scientific and technical disciplines

COMMODITIES - \$0

EQUIPMENT - \$0

AGENCY DISTRIBUTION:

Science Program Cost Category	ADF&G TOTAL	NOAA TOTAL	12- Month TOTAL
Personnel	\$0	\$0	\$0
Travel	\$57,495	\$1,500	\$58,995
Contractual	\$214,620	\$2,000	\$216,620
Commodities	\$0	\$0	\$0
Equipment	\$0	\$0	\$0
Subtotal	\$272,115	\$3,500	\$275,615
GA - 9%	\$24,490	\$315	\$24,805
Component Total	\$296,605	\$3,815	\$300,420

PUBLIC ADVISORY COMMITTEE (PAC) - \$20,611

Cost Category	FY14 Total 12- Month Budget for Comparison	FY15 Total 12- Month Budget
Personnel	\$6,774	\$6,909
Travel	\$9,000	\$9,500
Contractual	\$1,200	\$1,500
Commodities	\$500	\$1,000
Equipment	\$0	\$0
Subtotal	\$17,474	\$18,909
GA - 9%	\$1,573	\$1,702
Component Total	\$19,047	\$20,611

(\$1,564 more than FY14 for COLA)

PERSONNEL - \$6,909

Annual funds are provided for the **designated federal officer** (currently Philip Johnson) assigned to the PAC as required by the Federal Advisory Committee Act (FACA). This individual coordinates the scheduling of meetings and development of the agenda, prepares meeting minutes and presents outcomes to the EVOSTC Executive Director and TC Council, and provides assistance to the PAC Chair and the EVOSTC Restoration Office as needed.

TRAVEL - \$9,500

Travel support for **10** PAC members for one teleconferenced PAC meeting and to attend one in-person PAC meeting at an estimated average cost of **\$950** per person per trip to include: airfare, ground transportation, per diem, and lodging.

CONTRACTUAL - \$1,500

These funds are for advertising PAC meetings in newspapers in the spill-affected areas.

COMODITIES - \$1,000

These funds are for materials and incidentals for one teleconferenced and one in-person PAC meeting.

AGENCY DISTRIBUTION

PAC Cost Category	ADF&G	DOI-OEPC	12-Month Total
Personnel	\$0	\$6,909	\$6,909
Travel	\$9,500	\$0	\$9,500
Contractual	\$1,500	\$0	\$1,500
Commodities	\$1,000	\$0	\$1,000
Equipment	\$0	\$0	\$0
Subtotal	\$12,000	\$6,909	\$18,909
GA - 9%	\$1,080	\$622	\$1,702
Component Total	\$13,080	\$7,531	\$20,611

TRUSTEE COUNCIL MEMBER EXPENSES- \$2,180

Cost Category	FY14 Total 12- Month Budget for Comparison	FY15 Total 12- Month Budget
Personnel	\$0	\$0
Travel	\$1,800	\$2,000
Contractual	\$0	\$0
Commodities	\$0	\$0
Equipment	\$0	\$0
Subtotal	\$1,800	\$2,000
GA - 9%	\$162	\$180
Component Total	\$1,962	\$2,180

(\$218 than FY14 due to additional travel costs)

PERSONNEL - \$0**TRAVEL - \$2,000**

- **DOI Trustee Council Member Travel**

\$2,000

Travel support for the Trustee Council member or Alternate's travel expenses to participate in one meeting in Anchorage.

CONTRACTUAL - \$0**COMMODITIES - \$0****EQUIPMENT - \$0****AGENCY DISTRIBUTION**

Trustee Council Cost Category	ADF&G	ADEC	ADOL	NOAA	USFS	DOI- SEC	12-Month Total
Personnel	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Travel	\$0	\$0	\$0	\$0	\$0	\$2,000	\$2,000
Contractual	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Commodities	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0	\$0	\$2,000	\$2,000
GA - 9%	\$0	\$0	\$0	\$0	\$0	\$180	\$180
Component Total	\$0	\$0	\$0	\$0	\$0	\$2,180	\$2,180

HABITAT PROTECTION PROGRAM - \$668,758

Cost Category	FY14 Total 12- Month Budget for Comparison	FY15 Total 12- Month Budget
Personnel	\$178,100	\$219,739
Travel	\$2,500	\$5,000
Contractual	\$42,000	\$380,800
Commodities	\$0	\$8,000
Equipment	\$0	\$0
Subtotal	\$222,600	\$613,539
GA - 9%	\$20,034	\$55,219
Component Total	\$242,634	\$668,758

(\$426,124 more than FY14 due to habitat catalog and map update, inclusion of GLT costs, COLA)

PERSONNEL - \$219,739

- **ADOL**

\$98,739

Funds are for an RSA to cover salary costs for designated ADOL personnel (currently Jennifer Schorr and Lauri Adams) to provide legal oversight for habitat acquisitions, easements, timber rights, etc., and information to the public and Council regarding this program.

- **ADNR**

\$90,000

Funds are for designated habitat personnel (currently Samantha Carroll) to oversee large and small parcel habitat acquisitions, easements, timber rights, etc., and provide information to the public and Council regarding this program (i.e. Habitat Acquisition Catalog update). The Habitat Protection Program has moved from a passively-managed program to an active program with the Great Land Trust pursuing restoration projects on behalf of the Council. The Great Land Trust is currently negotiating several large land acquisitions that involve determinations regarding the State's long-term management of restoration lands. This increase in activities places a greater demand on DNR staff time and resources.

- **DOI-FWS/DOI-BLM**

\$31,000

Funds provided to assist with habitat acquisitions, easements, timber rights, etc.

➤ DOI-FWS	\$25,000
➤ <u>DOI-BLM</u>	<u>\$6,000</u>
Total	\$31,000

TRAVEL - \$5,000

Funds provided for designated travel.

➤ ADOL	\$2,500
➤ <u>ADNR</u>	<u>\$2,500</u>
Total	\$5,000

CONTRACTUAL - \$380,800

◦ PARCEL ACQUISITION

\$42,000

Funds are provided in support of agency efforts to bring viable proposals to the Council for consideration. Expenses such as title review, hazmat review and survey review and similar expenses are appropriate due diligence efforts which may be undertaken by sponsoring agencies under this program. The budgeted due diligence expenditures under contractual services are those contracted out by the agency as most efficient and/or cost effective. The purchase of any interest in land requires additional Trustee Council review and approval.

➤ ADNR	\$40,000
➤ DOI-BLM	\$2,000
Total	\$42,000

◦ PARCEL ACQUISITION

\$303,800

Funds are provided in support of Great Land Trust's efforts, through USFWS, to bring viable proposals to the Council for consideration. Expenses such as title review, hazmat review and survey review and similar expenses are appropriate due diligence efforts. The purchase of any interest in land requires additional Trustee Council review and approval. See proposal dated 08/29/2014.

◦ MAP UPDATE

\$35,000

As the primary trust agency for the EVOSTC Habitat Protection Program, the Alaska Department of Natural Resources (DNR) is responsible for holding title for restoration lands and limited interests in lands, as funded by the Council. The DNR Land Administration Records (LAS) and the EVOSTC Habitat Protection and Acquisition Catalog require periodic review and updates of land status. The Catalog was last updated in 2006 and DNR, at the direction of the Council office, is currently working on 2015 update. This task includes intensive title research and identifying LAS data that is incorrect with regard to EVOSTC-funded properties. Correcting this data will allow DNR reference maps to display accurate land status for such properties. Accurate record keeping and maintenance is vital to the overall management of EVOSTC lands and for the dissemination of information, including in responding to inquiries by the public, media and governmental agencies.

COMMODITIES - \$8,000

◦ ADNR

Interpretive Information

\$8,000

These funds are to purchase materials to produce documents, including those for meetings, public outreach, and general information regarding habitat acquisition. It includes bringing the current Habitat Protection and Acquisition Catalog up to date and updating the series of maps associated with each project. This task includes researching what projects took place in the interim, researching each project to determine the interests acquired and the associated costs, writing project narratives and creating associated GIS maps, including resolution of land status discrepancies.

EQUIPMENT - \$0

AGENCY DISTRIBUTION

Habitat Cost Category	ADF&G	ADOL	ADNR	DOI- FWS	DOI- BLM	12-Month Total
Personnel	\$0	\$98,739	\$90,000	\$25,000	\$6,000	\$219,739
Travel	\$2,500	\$0	\$2,500	\$0	\$0	\$5,000
Contractual	\$0	\$0	\$75,000	\$303,800	\$2,000	\$380,800
Commodities	\$0	\$0	\$8,000	\$0	\$0	\$8,000
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$2,500	\$98,739	\$175,500	\$328,800	\$8,000	\$613,539
GA - 9%	\$225	\$8,887	\$15,795	\$29,572	\$720	\$55,219
Component Total	\$2,725	\$107,626	\$191,295	\$358,392	\$8,720	\$668,758

TRUST AGENCY SUPPORT/PROJECT MANAGEMENT – \$339,395

Cost Category	FY14 Total 12- Month Budget for Comparison	FY15 Total 12- Month Budget
Personnel	\$299,369	\$310,372
Travel	\$0	\$1,000
Contractual	\$0	\$0
Commodities	\$0	\$0
Equipment	\$0	\$0
Subtotal	\$299,369	\$311,372
GA - 9%	\$26,943	\$28,023
Component Total	\$326,312	\$339,395

(\$13,083 more than FY14 due to COLA increases)

PERSONNEL - \$310,372**Project Management – USGS & NOAA - \$135,972**

Project Management funds to provide lead Trustee Agency staff with funds necessary to manage contracts and report on the status of projects; to facilitate communication between the agencies, Principal Investigators, and the Restoration Office; to assist with the annual financial audit; and perform other administrative functions necessary for implementation of projects authorized by the Trustee Council. Project management funds are also included below for management of multi-year projects that have been previously authorized.

DOI/USGS – Dede Bohn or other USGS staff	\$55,972
NOAA – Shawn Carey	\$40,000
<u>NOAA – Bonita Nelson</u>	<u>\$40,000</u>
TOTAL	\$135,972

Project Management: ADF&G Herring Program Coordinator - \$75,000

This funding provides for 70% of an ADF&G Fisheries Specialist I to coordinate with the Council's Herring program. This position will provide review and feedback to the Council and work with the Program to ensure coordination and relevancy with ADF&G resource management and Council goals.

<u>ADF&G – Sherri Dressel or other ADF&G staff</u>	<u>\$75,000</u>
TOTAL	\$75,000

Project Management- USFS - \$34,000

This funding provides for administration of the issuance of special use permits for EVOSTC projects on Chugach National Forest lands and USFS staff to support Trustee Council activities. It includes the environmental assessment and tribal consultation work needed to issue special use permits related to EVOSTC projects within Prince William Sound. These funds also include development of the Minimum Guidance documents related to projects within the Prince William Sound Wilderness Study area.

<u>DOI/USFS – Carole Jorgensen or other USFS staff</u>	<u>\$34,000</u>
TOTAL	\$34,000

Trustee Council Staff Support - \$65,400

Trustee Council Staff Support funds to cover staff costs related to preparing for, communicating with and representation of the Trustee Agency at EVOSTC sponsored meetings or when participating in EVOSTC program activities, and providing future program direction, unless waived by the agency

ADF&G – Tom Brookover or other ADF&G staff	\$12,000
USFS – Carole Jorgensen or other USFS staff	\$9,000
NOAA – Pete Hagen	\$10,000
DOI /FWS – Veronica Varela or other FWS staff	\$9,400
DOI/SEC – Federal Budget Officer – Bruce Nesslage	\$25,000
TOTAL	\$65,400

TRAVEL - \$1,000

This funding provides travel support for the Herring Program Coordinator to attend the annual HRM PI meeting in Anchorage

CONTRACTUAL - \$0

COMODITIES - \$0

EQUIPMENT - \$0

AGENCY DISTRIBUTION:

Agency Support Cost Category	ADEC	ADF&G	ADNR	DOI/USGS	USFS	NOAA	FWS	DOI/SEC	12-Month Total
Personnel	\$0	\$87,000	\$0	\$55,972	\$43,000	\$90,000	\$9,400	\$25,000	\$310,372
Travel	\$0	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000
Contractual	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Commodities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$88,000	\$0	\$55,972	\$43,000	\$90,000	\$9,400	\$25,000	\$311,372
GA - 9%	\$0	\$7,920	\$0	\$5,037	\$3,870	\$8,100	\$846	\$2,250	\$28,023
Component Total	\$0	\$95,920	\$0	\$61,009	\$46,870	\$98,100	\$10,246	\$27,250	\$339,395

**ALASKA RESOURCES LIBRARY & INFORMATION SERVICES – \$189,782
(ARLIS)**

Cost Category	FY14 Total 12- Month Budget for Comparison	FY15 Total 12- Month Budget
Personnel	\$69,636	\$146,212
Travel	\$0	\$0
Contractual	\$38,900	\$27,900
Commodities	\$0	\$0
Equipment	\$0	\$0
Subtotal	\$108,536	\$174,112
GA – 9%	\$9,768	\$15,670
Component Total	\$118,304	\$189,782

(\$71,478 more than FY14 due to additional ARLIS/UAA staffing to process the increase in media, NGO, and public information requests)

PERSONNEL – \$146,212

Position	Range/Step	Months	Monthly Cost	12-Month Cost
Librarian III – Carrie Holba	19/O	6	\$12,184	\$73,106
ARLIS or UAA staff member		6	\$12,184	\$73,106
Personnel Total				\$146,212

Cost is with benefits. 12-month allocation split between ARLIS/Admin

Funding provides two .5 FTE librarians (½ C. Holba salary, plus ½ other ARLIS and/or UAA staff) to meet the ongoing information and research needs of the Trustee Council staff, Public Advisory Committee, researchers, and the general public; manage the EVOS collection at ARLIS; and represent the Trustee Council on the ARLIS Management Team. With the reorganization in 2009-2011, the Restoration Program's need for ARLIS services was expected to diminish and ARLIS's funding was reduced. However, the Deepwater Horizon oil spill refocused attention on EVOS and increased the demand for EVOS-related information. FY15 funding increases the Council's ARLIS contribution to \$146,212 to ensure staffing levels are appropriate to meet the EVOS information needs of government agencies, NGOs, researchers, the media, and the public.

TRAVEL – \$0

CONTRACTUAL – \$27,900

Phase III ARLIS EVOSTC Document Digitization Services

Funding continues the digitizing of EVOSTC office files begun in FY13. Phase 1 digitized the Restoration Planning Work Group and 1994 Restoration Plan Environmental Impact Statement Administrative Records (1990-1994) and was completed in January 2014. Phase 2 is underway to digitize the Project Files (1989-present) and Chief Scientist files (1992-2002) and will be completed by January 2015. Phase 3 will digitize files for the Habitat Protection Program (1993-present), Public Advisory Committee (1992-present), Scientific and Technical Advisory Committee (2000-2006), and Community Involvement (1996-2000). Future Phases will include the EVOSTC Official Record (1991-present), and project data and other EVOS documents housed at ARLIS. See proposal dated 06/12/2014.

COMMODITIES – \$0

EQUIPMENT – \$0

AGENCY DISTRIBUTION:

ARLIS Cost Category	ADF&G 12-Month Total
Personnel	\$146,212
Travel	\$0
Contractual	\$27,900
Commodities	\$0
Equipment	\$0
Subtotal	\$174,112
GA - 9%	\$15,670
Component Total	\$189,782

FY15 AFO: Annual Funding Overview

Document Revised as of 11/10/14

The AFO (Annual Funding Overview) provides an overview of individual projects, and habitat support funding for that fiscal year.								
It is not intended to capture project total funding across years.								
The AFO is updated periodically to include additional funding, and to indicate release of funds.								
Funding Period: EFY15 - February 1, 2015 - January 31, 2016, unless otherwise noted in column 3.								
REMINDER: If the Council authorizes funding for the "current" FY, it may entail updating a different AFO.								
For DRAFT AFO used for TC meeting review, pending amounts in columns 3 and 8 will not be red.								
Key to color codes:								
Corrections made to existing documents								
Funding is included under 14120111-O								
APDI budget, excluding habitat support								
Habitat (parcels and/or APDI habitat support)								
NOAA Clean Water Projects								
Funding Totals								

FY15 AFO: Annual Funding Overview
Document Revised as of 11/10/14

1) Project or Parcel Number and Lead PI (grouped by Agency):	2) Date of Most Recent Proposal, APDI, or Habitat Benefit Report:	3) Date, Source, and Revision When proposal/report is not resubmitted with a new date. Red: funding not approved. Blue: funding not CN released.	4) Amount Requested for FY15 (includes any pending amount in column 3):	5) GA (9%):	6) Total Requested Amount for FY15 (includes any pending amounts in column 3):	7) Agency:	8) Most Recent Resolution Number and Amount; and (in red) Any Amount Pending Review:	9) FY15 Funding Court Notice (CN) Number and amount; Blue: Any Amount not Released
15120114-G Doroff	9/2/2014	9/2/14 FY15 Proposal: Long-Term Monitoring of Oceanographic Conditions in Cook Inlet/Kachemak Bay	\$104,600	\$9,400	\$114,000	ADFG		
15120116 Pallister	9/1/2014	9/1/14 FY15 Proposal: Marine Debris	\$285,000	\$25,650	\$310,650	ADFG		
15150121 Michel	9/2/2014	9/2/14 FY15 Proposal: Spatial Synthesis of Lingering Oil per PHagan 10.31.14 Funding period 11/20/14 - 01/31/16	\$105,110	\$9,460	\$114,570	ADFG		
15150122 Fall	10/2/2014	10/2/14 FY15 Proposal: Update of Subsistence Uses	\$258,687	\$23,282	\$281,969	ADFG		
		Total:	\$1,954,323	\$175,875	\$2,130,198	ADFG		
15120100 - APDI: Habitat Support	10/9/2014	9/17/14 Draft FY15 APDI - Habitat Support	\$175,500	\$15,795	\$191,295	ADNR		
					\$0	ADNR		
					\$0	ADNR		
		Total:	\$175,500	\$15,795	\$191,295	ADNR		
15120100 - APDI: Habitat Support	10/9/2014	9/12/14 Draft FY15 APDI - Habitat Support per D. Blaisdell email / through ADFG RSA	\$98,739	\$8,887	\$107,626	ADOL		

FY15 AFO: Annual Funding Overview
Document Revised as of 11/10/14

1) Project or Parcel Number and Lead PI (grouped by Agency):	2) Date of Most Recent Proposal, APDI, or Habitat Benefit Report:	3) Date, Source, and Revision When proposal/report is not resubmitted with a new date. Red: funding not approved. Blue: funding not CN released.	4) Amount Requested for FY15 (includes any pending amount in column 3):	5) GA (9%):	6) Total Requested Amount for FY15 (includes any pending amounts in column 3):	7) Agency:	8) Most Recent Resolution Number and Amount; and (in red) Any Amount Pending Review:	9) FY15 Funding Court Notice (CN) Number and amount; Blue: Any Amount not Released
		Total:	\$98,739	\$8,887	\$107,626	ADOL		
15120100 - APDI	10/9/2014	9/17/14 Draft FY15 APDI	\$0	\$0	\$0	ADEC		
		Total:	\$0	\$0	\$0	ADEC		
15100853 Irons	8/27/2014	08/27/14 FY15 Proposal: Pigeon Guillemot (PIGU) Restoration	\$358,904	\$32,301	\$391,206	USFWS		
15120100 - APDI	10/9/2014	9/17/14 Draft FY15 APDI	\$9,400	\$846	\$10,246	USFWS		
15120100 - APDI: Habitat Support	9/17/2014	9/17/14 Draft FY15 APDI - Habitat Support	\$25,000	\$2,250	\$27,250	USFWS		
15120100 - APDI: Habitat Support	9/17/2014	9/17/14 Draft FY15 APDI - Habitat Support	\$303,800	\$27,342	\$331,142	USFWS		
15120114-K Kuletz	9/2/2014	9/2/14 FY15 Proposal: PWS Marine Bird Surveys	\$22,200	\$2,000	\$24,200	USFWS		
		Total:	\$719,304	\$64,739	\$784,044	USFWS		
15120100 - APDI	10/9/2014	9/17/14 Draft FY15 APDI	\$93,500	\$8,415	\$101,915	NOAA		
15120111-A Bishop	8/31/2014	FY15 Proposal: PWS Herring Pgm - Validation of Acoustic Surveys	\$129,400	\$11,646	\$141,046	NOAA		
15120111-C Bochenek	8/8/2014	FY15 Proposal: Data Management Support / Funding [\$23,217] is included in PJ 14120111-O)	\$0	\$0	\$0	NOAA		

FY15 AFO: Annual Funding Overview
Document Revised as of 11/10/14

1) Project or Parcel Number and Lead PI (grouped by Agency):	2) Date of Most Recent Proposal, APDI, or Habitat Benefit Report:	3) Date, Source, and Revision When proposal/report is not resubmitted with a new date. Red: funding not approved. Blue: funding not CN released.	4) Amount Requested for FY15 (includes any pending amount in column 3):	5) GA (9%):	6) Total Requested Amount for FY15 (includes any pending amounts in column 3):	7) Agency:	8) Most Recent Resolution Number and Amount; and (in red) Any Amount Pending Review:	9) FY15 Funding Court Notice (CN) Number and amount; Blue: Any Amount not Released
15120111-E Buckhorn	8/15/2014	FY15 Proposal: PWS Herring Pgm - Expanded Adult Herring Surveys	\$83,100	\$7,479	\$90,579	NOAA		
15120111-F Buckhorn	8/15/2014	FY15 Proposal: PWS Herring Pgm - Juvenile Herring Abundance Index	\$77,900	\$7,011	\$84,911	NOAA		
15120111-G Buckhorn	8/15/2014	FY15 Proposal: PWS Herring Pgm - Intensive Surveys of Juvenile Herring	\$6,200	\$558	\$6,758	NOAA		
15120111-H Hoover	8/15/2014	FY15 Proposal: PWS Herring Pgm - Outreach & Education	\$33,000	\$2,970	\$35,970	NOAA		
15120111-L Heintz/Gorman	8/15/2014	FY15 Proposal: PWS Herring Pgm - Herring Condition Monitoring	\$230,800	\$20,772	\$251,572	NOAA		
15120111-O Pegau	8/15/2014	FY15 Proposal: PWS Herring Pgm - Coordination & Logistics	\$311,016	\$27,991	\$339,007	NOAA		
15120111-P Guyon/Wildes	8/15/2014	FY15 Proposal: PWS Herring Pgm - Herring Genetics	\$48,700	\$4,383	\$53,083	NOAA		
15120111-Q Branch	8/18/2014	FY15 Proposal: Population Dynamics Modeling / Funding [\$100,407] is included in PJ 14120111-O)	\$0	\$0	\$0	NOAA		
15120111-R Pegau	9/2/2014	FY15 Proposal: PWS Herring Pgm - Aerial Surveys	\$65,000	\$5,850	\$70,850	NOAA		

FY15 AFO: Annual Funding Overview
Document Revised as of 11/10/14

1) Project or Parcel Number and Lead PI (grouped by Agency):	2) Date of Most Recent Proposal, APDI, or Habitat Benefit Report:	3) Date, Source, and Revision When proposal/report is not resubmitted with a new date. Red: funding not approved. Blue: funding not CN released.	4) Amount Requested for FY15 (includes any pending amount in column 3):	5) GA (9%):	6) Total Requested Amount for FY15 (includes any pending amounts in column 3):	7) Agency:	8) Most Recent Resolution Number and Amount; and (in red) Any Amount Pending Review:	9) FY15 Funding Court Notice (CN) Number and amount; Blue: Any Amount not Released
15120112 Jennings	8/29/2014	10.16.14 FY15 Proposal: Harbor Protection - Project Management reduced funding per SC, SP, ED, PAC	\$5,600	\$504	\$6,104	NOAA		
15120112-A Patton	8/18/2014	8/18/14 FY15 Proposal: Harbor Protection - Cordova Clean Harbor	\$66,969	\$6,027	\$72,996	NOAA		
15120112-B Carpenter	9/21/2014	09/21/14 FY15 Proposal: Harbor Protection - Cordova Snow Management	\$129,647	\$11,668	\$141,315	NOAA		
15120114-A Batten	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Continuous Plankton Recorders	\$64,900	\$5,800	\$70,700	NOAA		
15120114-B Hoffman	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Coordination & Logistics	\$269,200	\$24,200	\$293,400	NOAA		
15120114-C Bishop	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Seabird Abundance in Fall & Winter	\$76,500	\$6,900	\$83,400	NOAA		
15120114-D Bochenek	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Data Management	\$150,400	\$13,500	\$163,900	NOAA		
15120114-E Campbell	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Oceanographic Conditions in PWS	\$186,900	\$16,800	\$203,700	NOAA		

FY15 AFO: Annual Funding Overview

Document Revised as of 11/10/14

1) Project or Parcel Number and Lead PI (grouped by Agency):	2) Date of Most Recent Proposal, APDI, or Habitat Benefit Report:	3) Date, Source, and Revision When proposal/report is not resubmitted with a new date. Red: funding not approved. Blue: funding not CN released.	4) Amount Requested for FY15 (includes any pending amount in column 3):	5) GA (9%):	6) Total Requested Amount for FY15 (includes any pending amounts in column 3):	7) Agency:	8) Most Recent Resolution Number and Amount; and (in red) Any Amount Pending Review:	9) FY15 Funding Court Notice (CN) Number and amount; Blue: Any Amount not Released
15120114-G Doroff	9/2/2014	9/2/14 FY15 Proposal: Long-Term Monitoring of Oceanographic Conditions in Cook Inlet/Kachemak Bay	\$18,100	\$1,600	\$19,700	NOAA		
15120114-H Holderied	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Science Coordination & Synthesis	\$134,000	\$12,100	\$146,100	NOAA		
15120114-I Hollmen	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Conceptual Ecological Modeling	\$72,100	\$6,500	\$78,600	NOAA		
15120114-J Hopcroft	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Seward Line Monitoring	\$95,400	\$8,600	\$104,000	NOAA		
15120114-L Konar	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Ecological Communities in Kachemak Bay	\$44,100	\$4,000	\$48,100	NOAA		
15120114-M Matkin	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Long-Term Killer Whale Monitoring	\$121,400	\$10,900	\$132,300	NOAA		
15120114-N Moran	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Humpback Whale Predation on Herring	\$129,900	\$11,700	\$141,600	NOAA		
15120114-P Weingartner	9/2/2014	9/2/14 FY15 Proposal: LTM Program - GAK1 Monitoring	\$109,200	\$9,800	\$119,000	NOAA		

FY15 AFO: Annual Funding Overview

Document Revised as of 11/10/14

1) Project or Parcel Number and Lead PI (grouped by Agency):	2) Date of Most Recent Proposal, APDI, or Habitat Benefit Report:	3) Date, Source, and Revision When proposal/report is not resubmitted with a new date. Red: funding not approved. Blue: funding not CN released.	4) Amount Requested for FY15 (includes any pending amount in column 3):	5) GA (9%):	6) Total Requested Amount for FY15 (includes any pending amounts in column 3):	7) Agency:	8) Most Recent Resolution Number and Amount; and (in red) Any Amount Pending Review:	9) FY15 Funding Court Notice (CN) Number and amount; Blue: Any Amount not Released
15120114-R Ballachey	9/2/2014	9/2/14 FY15 Proposal: Nearshore Benthic Systems in the Gulf of AK / agency distribution per 9.18.14 D. Bohn email	\$12,500	\$1,125	\$13,625	NOAA		
15120114-S Carls	9/2/2014	9/2/14 FY15 Proposal: Oil Level & Weathering Tracking	\$155,200	\$14,000	\$169,200	NOAA		
15120120 Jones	9/2/2014	9/2/14 FY15 Proposal: Data Management & Synthesis	\$347,900	\$31,300	\$379,200	NOAA		
15150114-T Bochenek	9/29/2014	9/29/14 FY15 Proposal: Data Management - Tasks 1 & 2 only (per SC/SP/PAC recommendation)	\$111,746	\$10,057	\$121,803	NOAA		
		Total:	\$3,380,278	\$304,156	\$3,684,434	NOAA		
15120114-R Ballachey	9/2/2014	9/2/14 FY15 Proposal: Nearshore Benthic Systems in the Gulf of AK / agency distribution per 9.18.14 D. Bohn email	\$40,000	\$3,600	\$43,600	NPS		
		Total:	\$40,000	\$3,600	\$43,600	NPS		
15120100 - APDI	10/9/2014	9/17/14 Draft FY15 APDI	\$148,972	\$13,407	\$162,379	USGS		
15120111-K Hershberger	8/15/2014	8/15/14 FY15 Proposal: PWS Herring Pgm -Herring Disease	\$254,600	\$22,914	\$277,514	USGS		
15120114-O Piatt	9/2/2014	9/2/14 FY15 Proposal: LTM Program - Forage Fish Distribution	\$185,700	\$16,700	\$202,400	USGS		

FY15 AFO: Annual Funding Overview

Document Revised as of 11/10/14

1) Project or Parcel Number and Lead PI (grouped by Agency):	2) Date of Most Recent Proposal, APDI, or Habitat Benefit Report:	3) Date, Source, and Revision When proposal/report is not resubmitted with a new date. Red: funding not approved. Blue: funding not CN released.	4) Amount Requested for FY15 (includes any pending amount in column 3):	5) GA (9%):	6) Total Requested Amount for FY15 (includes any pending amounts in column 3):	7) Agency:	8) Most Recent Resolution Number and Amount; and (in red) Any Amount Pending Review:	9) FY15 Funding Court Notice (CN) Number and amount; Blue: Any Amount not Released
15120114-R Ballachey & Dean	9/2/2014	9/2/14 FY15 Proposal: Nearshore Benthic Systems in the Gulf of AK / agency distribution per 9.18.14 D. Bohn email	\$231,500	\$20,835	\$252,335	USGS		
		Total:	\$820,772	\$73,856	\$894,628	USGS		
15120100 - APDI	10/9/2014	9/17/14 Draft FY15 APDI	\$43,000	\$3,870	\$46,870	USFS		
15120116 Pallister	9/2/2014	Marine Debris: USDA FS - FY14 Work Plan & Budget Sheets	\$0	\$0	\$0	USFS		
		Total:	\$43,000	\$3,870	\$46,870	USFS		
15120100 - APDI	10/9/2014	9/17/14 Draft FY15 APDI	\$6,909	\$622	\$7,531	DOI-OPEC		
15120100 - APDI	10/9/2014	9/17/14 Draft FY15 APDI	\$27,000	\$2,430	\$29,430	DOI-SEC		
15120100 - APDI: Habitat Support	10/9/2014	9/17/14 Draft FY15 APDI - Habitat Support	\$8,000	\$720	\$8,720	DOI-BLM		
		Total:	\$41,909	\$3,772	\$45,681	DOI		
		Grand Total:	\$7,273,825	\$654,550	\$7,928,376			

**FY15 AFC (Annual Funding Cross-check)
(Work Plan, APDI, and Habitat Parcels)**

Table Revised as of 11/10/14

The AFC (Annual Funding Crosscheck) is an internal document used to verify the amounts in the AFO (Annual Funding Overview) by cross-checking the AFO amounts. The purpose is to find errors before the AFO is used externally to authorize funding. It is updated periodically to include additional funding authorized or released.

FY15 Totals (based on most recent revision):	<u>Amount</u>	<u>GA</u>	<u>Total</u>	<u>Tab</u>
Funding by Projects (FY15 Annual Funding Overview)	\$7,273,825	\$654,550	\$7,928,376	1
Funding by Resolution	\$7,928,376	inc.	\$7,928,376	3
Funding by All Funds from Workplan and Other	\$7,928,376	inc.	\$7,928,376	3
Funding by All Funds in Court Memo	\$7,928,376	inc.	\$7,928,376	3
Funding by Agency	\$7,928,376	inc.	\$7,928,376	4
Funding by Agency Distribution on Resolutions	\$7,928,376	inc.	\$7,928,376	4

Notes:

The totals on this page are populated/linked to corresponding tabs in workbook.

Key to color codes:	
Corrections made to existing documents	
Funding is included under 14120111-O	
Part of the APDI budget, but not habitat	
Habitat (parcels and/or APDI habitat support)	
NOAA Clean Water Projects	
Additional Highlighted changes--these corrections will be applied to the CN, Resolutions, Court Memo	

FY15 AFC (Annual Funding Crosscheck): Funding by Court Notice (CN)

Document Revised as of 11/10/14

The AFC (Annual Funding Crosscheck) is an internal document used to verify the amounts in the AFO (Annual Funding Overview) by cross-checking the AFO amounts. The purpose is to find errors before the AFO is used externally to authorize funding. It is updated periodically to include additional funding authorized.

Funding by Court Notice

COURT NOTICE MEMO	total	State	Fed	total	state	Fed
Agency:	habitat fund	habitat fund	habitat fund	restoration fund	restoration fund	restoration fund
NOAA	\$0		\$0	\$3,684,434		\$3,684,434
DOI-BLM	\$8,720		\$8,720	\$0		\$0
DOI-SEC	\$0		\$0	\$29,430		\$29,430
DOI-OEPC	\$0		\$0	\$7,531		\$7,531
NPS	\$0		\$0	\$43,600		\$43,600
USGS	\$0		\$0	\$894,628		\$894,628
FWS	\$358,392		\$358,392	\$425,652		\$425,652
USFS	\$0		\$0	\$46,870		\$46,870
ADEC	\$0	\$0		\$0	\$0	
ADOL	\$107,626	\$107,626		\$0	\$0	
ADNR	\$191,295	\$191,295		\$0	\$0	
ADFG	\$2,725	\$2,725		\$2,127,473	\$2,127,473	
Subtotals:	\$668,758	\$301,646	\$367,112	\$7,259,618	\$2,127,473	\$5,132,145

		\$5,499,257 total Fed
		\$2,429,119 total State
		\$7,928,376 GRAND TOTAL
Key to color codes:		
Corrections made to existing documents		
Funding is included under 14120111-O		
Part of the APDI budget, but not habitat		
Habitat (parcels/APDI habitat support)		
NOAA Clean Water Projects		

\$7,928,376

FY15 AFC (Annual Funding Cross-Check): Funding by Court Notice (CN)

Document Revised as of 11/10/14

Funding Totals	
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FY15 Workplan amts for Res 14-xx only overview	total	Projects in Separate Resolution & Habitat	Total Allocation to Agency	Habitat Funds	Restoration Funds	Notes:
NOAA	\$3,684,434	\$0	\$3,684,434		\$3,684,434	
DOI-BLM	\$8,720	\$0	\$8,720	\$8,720		
DOI-SEC	\$29,430	\$0	\$29,430		\$29,430	
DOI-OEPC	\$7,531	\$0	\$7,531		\$7,531	
NPS	\$43,600	\$0	\$43,600		\$43,600	
USGS	\$894,628	\$0	\$894,628		\$894,628	
FWS	\$784,044	\$0	\$784,044	\$358,392	\$425,652	
USFS	\$46,870	\$0	\$46,870		\$46,870	
ADEC	\$0	\$0	\$0		\$0	
ADOL	\$107,626	\$0	\$107,626	\$107,626		
ADNR	\$191,295	\$0	\$191,295	\$191,295		
ADFG	\$2,130,198	\$0	\$2,130,198	\$2,725	\$2,127,473	
				\$668,758	\$7,259,618	Total
					Restoration Funds Federal Total	\$5,132,145
				\$7,928,376	Restoration Funds State Total	\$2,127,473
						\$7,259,618

\$7,928,376

0

\$7,928,376

\$7,928,376

TOTAL BY RESOLUTION (includes GA)		
using total(s) from Funding Overview		(FY14 item)
Res. 14-xx	\$331,142	(GLT)
Res. 14-xx	\$0	(parcel)
Res. 14-xx	\$114,570	(Lingering Oil)
Res. 14-xx	\$310,650	(Marine Debris)
Res. 14-xx	\$391,206	(PIGU)
Res. 14-xx	\$220,415	(NOAA Harbor)
Res. 14-xx	\$6,560,393	(A+ B)

FY15 AFC (Annual Funding Cross-Check): Funding by Court Notice (CN)

Document Revised as of 11/10/14

(Restoration PJs) 13-14 part A	\$4,572,510
(APDI) 13-14 part B	\$1,987,883
\$7,928,376	total

FY15 AFC (Annual Funding Crosscheck): Funding by Agency

Document Revised as of 11/10/14

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Funding by Agency

									Final Figures	
	Total by Agency using PJ budgets	9% GA	Subtotal to Agency	AMOUNTS IN RESOLUTIONS showing distribution to agencies						
				Res. 14-xx	Res. 14-xx	Res. 14-xx	Res. 14-xx	Res. 14-xx	Res-14-xx	
ADFG	\$1,954,323	\$175,875	\$2,130,198						\$2,130,198	
ADNR	\$175,500	\$15,795	\$191,295						\$191,295	
ADOL	\$98,739	\$8,887	\$107,626						\$107,626	
DOI-BLM	\$8,000	\$720	\$8,720						\$8,720	
DOI-OPEC	\$6,909	\$622	\$7,531						\$7,531	
DOI-SEC	\$27,000	\$2,430	\$29,430						\$29,430	
FWS	\$719,304	\$64,739	\$784,044						\$784,044	
NOAA	\$3,380,278	\$304,156	\$3,684,434						\$3,684,434	
NPS	\$40,000	\$3,600	\$43,600						\$43,600	
USFS	\$43,000	\$3,870	\$46,870						\$46,870	
USGS	\$820,772	\$73,856	\$894,628						\$894,628	
\$7,273,825			\$654,550	\$7,928,376	\$0	\$0	\$0	\$0	\$0	\$7,928,376
total to Feds									\$5,499,257	
total to State									\$2,429,119	
									\$7,928,376	
									State total Res. 14-xx	\$2,429,119
									Fed total Res. 14-xx	\$5,499,257

FY15 AFC (Annual Funding () -check): Funding by Agency

Document Revised as of 11/10/14

NOAA Clean Water Projects	
Funding Totals	

FY15 AFC (Annual Funding Crosscheck): Long-Term Programs Only

Document Review as of 11/10/14

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Agency	PJ #	GulfWatch Projects
ADFG	15120114-G	\$114,000
FWS	15120114-K	\$24,200
NOAA	15120114-A	\$70,700
NOAA	15120114-B	\$293,400
NOAA	15120114-C	\$83,400
NOAA	15120114-D	\$163,900
NOAA	15120114-E	\$203,700
NOAA	15120114-G	\$19,700
NOAA	15120114-H	\$146,100
NOAA	15120114-I	\$78,600
NOAA	15120114-J	\$104,000
NOAA	15120114-L	\$48,100
NOAA	15120114-M	\$132,300
NOAA	15120114-N	\$141,600
NOAA	15120114-P	\$119,000
NOAA	15120114-R	\$13,625
NOAA	15120114-S	\$169,200
NOAA	15150114-T	\$121,803
NOAA	15120120	\$379,200
NPS	15120114-R	\$43,600
USGS	15120114-O	\$202,400
USGS	15120114-R	\$252,335
Total from Research		\$2,924,863

Herring Projects	PJ #	Agency
\$ 14,388	15120111-K	ADFG
\$ 141,046	15120111-A	NOAA
\$ -	15120111-B	NOAA
\$ 90,579	15120111-E	NOAA
\$ 84,911	15120111-F	NOAA
\$ 6,758	15120111-G	NOAA
\$ 35,970	15120111-H	NOAA
\$ 251,572	15120111-L	NOAA
\$ -	15120111-M	NOAA
\$ 339,007	15120111-O	NOAA
\$ 53,083	15120111-P	NOAA
\$ 70,850	15120111-R	NOAA
\$ 277,514	15120111-K	USGS
\$ 1,365,678		Total From Research

Key to color codes:	
Corrections made to existing documents	
Funding is included under 14120111-O	
Part of the APDI budget, but not habitat	
Habitat (parcels/APDI habitat support)	
NOAA Clean Water Projects	
Funding Totals	

\$7,928,376 Grand Total All Projects

APDI	PJ #	Agency
\$ 1,291,896	15120100	ADFG
\$ 2,725	15120100	ADFG
\$ 191,295	15120100	ADNR
\$ 107,626	15120100	ADOL
\$ 10,246	15120100	USFWS
\$ 358,392	15120100	USFWS
\$ 101,915	15120100	NOAA
\$ 162,379	15120100	USGS
\$ 46,870	15120100	USFS
\$ 7,531	15120100	DOI-OPEC
\$ 29,430	15120100	DOI-SEC
\$ 8,720	15120100	DOI-BLM
\$ 1,650,267	Total From Research	
\$ 668,758	Total From Habitat	
\$ 2,319,025		Total APDI

Non-Program Projects	PJ #	Agency
\$ 6,104	15120112	NOAA
\$ 72,996	15120112-A	NOAA
\$ 141,315	15120112-B	NOAA
\$ -	15120116	USFS
\$ 310,650	15120116	ADFG
\$ 114,570	15150121	ADFG
\$ 281,969	15150122	ADFG
\$ 391,206	15100853	USFWS
\$ 1,318,810		Total From Research

Pete Hagan on NOAA

Long-Term Projects:

14120114-R	Ballachey	LTM Program - Nearshore Benthic Systems in the Gulf of Alaska
14120114-A	Batten	LTM Program - Continuous Plankton Recorder
14120111-A	Bishop	PWS Herring Program - Validation of Acoustic Surveys
14120114-C	Bishop	LTM Program - Seabird Abundance in Fall and Winter
14120111-C	Bochenek	PWS Herring Program - Data Management Support
14120114-D	Bochenek	LTM Program - Data Management
14120114-T	Bochenek	Data Management Supplemental Project
14120111-Q	Branch	PWS Herring Program - Population Dynamics Modeling
14120111-E	Buckhorn	PWS Herring Program - Expanded Adult Herring Surveys
14120111-F	Buckhorn	PWS Herring Program - Juvenile Herring Abundance Index
14120111-G	Buckhorn	PWS Herring Program - Intensive surveys of juvenile herring
14120114-E	Campbell	LTM Program - Oceanographic Conditions in PWS
14120114-S	Carls	LTM Program - Oil Level and Weathering Tracking
14120112-B	Carpenter	Snow Management Analysis
14120114-G	Doroff	LTM Program - Oceanographic Monitoring in Cook Inlet
14120111-P	Guyon	PWS Herring Program - Herring Genetics
14120111-L	Heintz / Gorman	PWS Herring Program - Herring Condition Monitoring
14120114-B	Hoffman	LTM Program - Coordination and Logistics

14120114-H	Holderied	LTM Program - Science Coordination and Synthesis
14120114-I	Hollmen	LTM Program - Conceptual Ecological Modeling
14120111-H	Hoover	PWS Herring Program - Outreach and Education Program
14120114-J	Hopcroft	LTM Program - Seward Line Monitoring
14120112	Jennings	PWS Harbor Cleanup Project
14120120	Jones	Collaborative Data Management and Holistic Synthesis
14120114-L	Konar	LTM Program - Ecological Communities in Kachemak Bay
14120114-M	Matkin	LTM Program - Long-term killer whale monitoring
14120114-N	Moran	LTM Program - Humpback Whale Predation on Herring
14120112-A	Patton	Cordova Clean Harbor
14120111-R	Pegau	PWS Herring Program - Aerial Survey Support
14120111-O	Pegau	PWS Herring Program - Coordination and Logistics
14120111-M	Pegau / Heintz	PWS Herring Program - Juvenile Herring Intensive Monitoring
14120114-P	Weingartner	LTM Program - Continuing GAK1 Monitoring

Non-Program Continuing Projects:

No projects		
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Dede Bohn - USGS**Long-Term Projects:**

14120114-R	Ballachey	LTM Program - Nearshore Benthic Systems in the Gulf of Alaska
14120111-K	Hershberger	PWS Herring Program -Herring Disease Program
14120114-O	Piatt	LTM Program - Forage Fish Distribution & Abundance,

Non-Program Continuing Projects:

No projects		
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Catherine Boerner - EVOSTC**Long-Term Projects:**

No Projects		
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Non-Program Continuing Projects:

No Projects		
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Linda Kilbourne & Elise Hsieh - EVOSTC**Non-Program Continuing Projects:**

15120116	Pallister	Marine Debris Removal
15150121	Michel	Spatial Synthesis of Lingering Oil
15150122	Fall	Update of Subsistence Uses

EVOSTC DOCUMENT DIGITIZING PROJECT

Phase 3: File Collections:

Habitat Protection Program
Public Advisory Committee
Science and Technology Advisory Committee
Community Involvement

June 12, 2014

ARLIS

PROPOSAL SUMMARY *This proposal provides details on the project listed in the ARLIS section of the APDI.*

In February 2013, the EVOS Trustee Council began a multi-phase project to digitize select EVOSTC files for ease of retrieval, to facilitate web access where appropriate, save future storage/office space and expense, and ensure long-term preservation of information.

Phase 1: Completed: This phase was funded in February 2013 to digitize the administrative records of the Restoration Planning Work Group (RPWG) and Restoration Plan Final Environmental Impact Statement (FEIS) and was completed in December 2013.

Phase 2: in progress, to be completed by January 31, 2015: Funded for FY14, this phase addresses a need identified by the National Center for Ecological Analysis and Synthesis (NCEAS) to consolidate project information, which was a mix of paper and digital formats. When the EVOSTC project database was created in 2005, subsequent projects were entered into the database. Some digital conversion was done for older projects, however, gaps remained. In addition, the paper files contain documents, such as correspondence documenting the administration of projects, letters of support, and publicity, which the project database cannot currently accommodate. Staff must check the database plus two sets of paper files, the EVOSTC Project Files 1991-2009 and the Chief Scientist Project Files 1992-2002, to ensure that information retrieval on older projects is complete. The EVOSTC Project Files 1991-2009 and the Chief Scientist Files 1992-2002 are being digitized as the first step in consolidating the project information into one location. Additional database work will be needed to complete the consolidation.

Proposed Phase 3: This phase proposes to digitize the following active and/or historical file collections: Habitat Protection Program (1993-present), Public Advisory Committee (1992-present), Science and Technology Advisory Committee (2000-2006), and Community Involvement (1996-2000).

Future Phases: Future phases will propose to digitize the EVOSTC Official Record (1991-present), Natural Resource Damage Assessment project data and other EVOS documents housed at ARLIS.

PROPOSAL DETAILS

Background: Alaska Resources Library and Information Services (ARLIS, www.arlis.org), is a special library focusing on the natural and cultural resources of Alaska and arctic areas. Established in 1997 and located on the campus of the University of Alaska Anchorage, ARLIS is an innovative partnership of state, federal and university entities whose primary purpose is to meet the information needs of its founding agencies: the Alaska Department of Fish and Game, Exxon Valdez Oil Spill Trustee Council, U.S. Bureau of Land Management, U.S. Bureau of Ocean Energy Management, U.S. Fish and Wildlife Service, U.S. National Park Service, U.S. Geological Survey and University of Alaska Anchorage. ARLIS is open to the public and also serves the university community, non-profits, and the private sector. ARLIS is directed by the ARLIS Management Team, which is responsible to the ARLIS Founders Board. The Board consists of representatives from the above founding agencies.

ARLIS serves as the EVOSTC repository for EVOS-related materials and has housed this collection since the Trustee Council's Oil Spill Public Information Center became part of ARLIS in 1997. ARLIS also maintains the EVOSTC Public Record and public versions of the administrative records of the Restoration Planning Work Group (RPWG) and Restoration Plan Final Environmental Impact Statement (FEIS).

Phase 3 Proposed Scope: Phase 3 of the project will digitize the files of the Habitat Protection Program (1993-present), Public Advisory Committee (1992-present), Science and Technology Advisory Committee (2000-2006), and Community Involvement (1996-2000). The final deliverable will be a collection of searchable full-text digital versions of the documents contained in these files. The digitized documents will be provided to the EVOSTC office and added to the intranet by EVOSTC staff or associated IT staff. The documents will be searchable in-house via the Google Search Box. The documents are not publicly available, as they may contain sensitive information pertaining to land parcels, peer review comments, and other confidential information; however, EVOSTC staff use the files to respond to questions pertaining to the EVOSTC restoration program, and electronic files will reduce response time and ensure a complete response.

Habitat Protection Program Files: Volume – 34 boxes, 510 inches, 102,000 pages. This file collection documents the administration of the Habitat Protection Program. Housed in four four-drawer file cabinets, this file collection is largely letter- and legal-sized papers in folders or binders, with several oversized maps. Some documents are contained with staples, clips, or rubber bands, and about 5% of the items have comb or glue bindings. The collection contains some handwritten notes.

Public Advisory Committee Files: Volume – 15 boxes, 225 inches, 45,000 pages These files document the activities of the Public Advisory Committee and its predecessor, the Public Advisory Group. Housed in one four-drawer file cabinet and 10 file boxes, this collection is largely letter- and legal-sized papers in folders, with a few oversized maps. Some documents are

contained with staples, clips or rubber bands, and about 5% of the items have comb or glue bindings. The collection contains some handwritten notes.

Scientific and Technical Advisory Committee Files: Volume – 2 boxes, 30 inches, 6,000 pages. This file collection documents the activities of the Scientific and Technical Advisory Committee. Housed in two file boxes, this file collection is largely letter- and legal-sized papers in folders or binders, with several oversized maps. Some documents are contained with staples, clips, or rubber bands, and about 5% of the items have comb or glue bindings. The collection contains some handwritten notes.

Community Involvement Files: Volume – 9 boxes, 135 inches, 27,000 pages. This file collection documents activities related to Community Involvement efforts. Housed in nine file boxes, this file collection is largely letter- and legal-sized papers in folders or binders. Some documents are contained with staples, clips, or rubber bands, and a few items have comb or glue bindings. The collection contains some handwritten notes.

Total: 60 boxes, 900 inches, 180,000 pages

Process: Scanning will be done from originals to ensure image quality and collection completeness. Non-print items, such as audio or video tapes, CDs or DVDs, and documents protected by copyright will not be scanned, but will be noted with an entry that will refer the user to a source for the item. Metadata will be created as needed for handwritten documents. Boxes of documents will be sent to ARLIS and returned to the EVOSTC office via the UAA courier.

EVOSTC staff will:

- Provide ARLIS with instructions as needed, including guidance on file names.
- Review the files to identify bound items without marginalia that have already been scanned.
- Provide extra copies of bound items without marginalia, as available, that will not require reassembly after scanning.
- Identify items protected by copyright that will not be scanned, and provide citations for these items, to be included in the digital collection.
- Box the files, label the boxes, and route them to ARLIS via the UAA courier.
- Unbox and re-file the documents after scanning.
- After delivery of the digital documents, add the files to the EVOSTC intranet.

ARLIS staff will:

- Prepare the documents for scanning, including removing staples, other fasteners, and bindings.
- Scan each file into a separate electronic file, including all file folder contents, post-it notes, and the folder itself, if there notes written on it or fastened to it.

- Apply Optical Character Recognition (OCR) software to each file for searchability.
- Provide each file with an appropriate file name that indicates the file collection and provides for ease of identification.
- Create metadata for handwritten documents, as needed.
- Provide quality assurance by reviewing each file for image quality and OCR.
- Re-fasten each document to pre-scanning condition and return to the original folder or binder.
- Return the folders and binders to the appropriate box, in the original order, and return the boxes to the EVOSTC office via the UAA courier.
- Deliver the digital documents to the EVOSTC office.

Final Deliverable: The final deliverable of the Phase 3 project will be a collection of searchable full-text digital versions of the documents contained in the EVOSTC file collections for the Habitat Protection Program, Public Advisory Committee, Scientific and Technical Advisory Committee and Community Involvement. The digitized documents will be provided to the EVOSTC office and added to the intranet by EVOSTC staff or associated IT staff. The documents will be searchable in-house via the Google Search Box.

Timeline: This project will begin February 1, 2015 and be completed by January 31, 2016.

BUDGET

Staff	Tasks	Cost	Funding
Student labor	Habitat Protection Program Files – 34 boxes – Prep, scan, return documents to pre-scanning condition, QA, create metadata as needed, and file transfer	\$325 per box	\$11,050
	Public Advisory Committee Files – 15 boxes – Prep, scan, return documents to pre-scanning condition, QA, create metadata as needed, and file transfer		\$4,875
	Scientific and Technical Advisory Committee Files – 2 boxes – Prep, scan, return documents to pre-scanning condition, QA, create metadata as needed, and file transfer		\$ 650
	Community Involvement Files – 9 boxes – Prep, scan, return documents to pre-scanning condition, QA, create metadata as needed, and file transfer		\$ 2,925
Librarian	Oversee the project – 120 hours	\$70/hour	\$8,400
	Total		\$27,900



September 25, 2014
GLT Proposal for TC
Confidential

EVOSTC Great Land Trust Spill Area Ecosystem Habitat Conservation Project YEARS 3 (FY15) & 4 (FY16)

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Project Summary

Great Land Trust (GLT) requests funding from the *Exxon Valdez* Oil Spill Trustee Council (EVOSTC) Habitat Acquisition Fund to continue work on up to five conservation projects that will implement habitat conservation actions to aid in the recovery and enhancement of the long term health and viability of those resources injured by the *Exxon Valdez* oil spill (EVOS) and spill area ecosystems. GLT will carry out this work over a multi-year period. Beginning in 2013, the first year of the project, GLT focused on the Kodiak Afognak Archipelago area; the scope broadened to include all of the spill area in 2014, the second year of the project. Using a land conservation prioritization that GLT developed specifically for the Kodiak Afognak Archipelago, we identified multiple high ranking conservation projects and have begun due diligence and negotiations with landowners on six of the highest ranking projects. During Years 3 and 4, GLT will expand the land conservation prioritization to include the entire spill area and will continue due diligence and negotiations.

GLT will work closely with EVOSTC, United States Fish and Wildlife Service (USFWS), and the Alaska Departments of Natural Resources and Law in order to complete these projects. GLT will actively seek significant grant funding from other sources to compliment EVOS funding to carry out the top projects. Of the projects developed, we intend to complete or make substantial progress on at least two or three large-scale (greater than 1,000 acres) conservation projects with landowners in the entire spill area during years 3 and 4.

Project Narrative

Statement of Need

This project seeks to contribute to the objectives of the EVOSTC to aid in the recovery and enhancement of the long term health and viability of the resources injured by the EVOS. This project will seek to acquire priority lands within the EVOS area and increase the capacity of the existing, established EVOS habitat program.

This proposal will provide funding for Year 3 (FY15) of a multi-year project.

GLT has completed significant projects with a wide range of partners including the Municipality of Anchorage, the Mat-Su Borough, State of Alaska Department of Fish and Game, State of Alaska Department of Natural Resources and State Parks, USFWS, Army Corps of Engineers,

NOAA, Alaska Native Corporations, Ducks Unlimited, Pacific Coast Joint Venture and numerous private businesses and landowners. GLT has experience raising and managing significant public and private funding, having completed nearly \$14 million in conservation projects over the last 36 months. GLT also has extensive experience with mitigation funding, having operated an In-lieu Fee program under a Memorandum of Understanding with the Army Corps of Engineers since 1998. As part of this program, GLT has completed 9 conservation projects and received hundreds of payments totaling over \$12 million. Two recent projects are described below.

The Campbell Creek Estuary Conservation Project:

GLT succeeded in raising \$7.5 million dollars to purchase and conserve Campbell Creek Estuary, the last undeveloped estuary of the original seven salmon streams in Anchorage. GLT worked with the Municipality of Anchorage and many other partners for three years to raise funds to purchase the 60-acre parcel and donate it to the Municipality as a new Natural Area; GLT retained a conservation easement. The Project conserved ½ mile of Campbell Creek's lower reaches including the Estuary and its critical tidal marsh habitat as well as 25 acres of coastal forest. This parcel also provides access to the Anchorage Coastal Wildlife Refuge. Project funding included dollars to clean up the property, develop a park plan, create a modest trailhead and gravel trails, as well as monitor and address the conservation needs of the property annually.

Knik Islands Conservation Project:

The Knik Islands Conservation Project was completed in the fall of 2011 as a partnership between GLT and Eklutna, Inc. The project permanently conserves nearly 4800 acres at the mouth of the Knik and Matanuska Rivers with a conservation easement. This land will remain under the ownership of Eklutna, Inc. and traditional uses such as hunting and fishing by Shareholders, and public access through permits, will continue. This property contains excellent habitat for all five species of salmon in Cook Inlet as well as many other wildlife species. In addition, the property provides a wildlife and recreational corridor between Palmer Hay Flats State Game Refuge and Chugach State Park. Scenic views of the property are well known by travelers crossing the Knik River Bridge on the Glenn Highway. This project was made possible through a collaborative effort with the Mat-Su Salmon Partnership, USFWS, the Army Corps of Engineers, NOAA Fisheries, Alaska Department of Fish and Game, and CIRI. Funding for this conservation easement was made possible through resources set aside to offset habitat losses associated with the expansion of the Port of Anchorage.

Update on Year 1 and 2 Project Accomplishments

This FY2015 proposal will fund Year 3 of a multi-year project. During Year 1 GLT accomplished numerous tasks from our list of deliverables for the grant. Using data from the Kodiak prioritization completed early in 2013, GLT staff met numerous times with key landowners, both in Kodiak and here in Anchorage. Landowners included the Koniag Regional Native Corporation, Ouzinkie Native Corporation, Lesnoi Native Corporation, Natives of Kodiak Corporation, as well as the Kodiak Borough Mayor, Manager and staff from Mental Health Trust Land Office. In addition, GLT met multiple times with the realty staff at USFWS as well as Kodiak Refuge staff and numerous Fish and Game staff in Kodiak. GLT staff met with Kodiak

Soil and Water Conservation District staff and staff at both Rep. Austerman's and Sen. Steven's Offices. GLT met with Alaska State Parks staff several times and consulted with staff at NOAA and The Conservation Fund regarding conservation projects on Kodiak. In gathering data for the prioritization we consulted with additional staff including individuals from Kodiak Island Borough, Koncor, Pacific Coast Joint Venture, Audubon Alaska and the others mentioned above.

During the grant period GLT made site visits to numerous properties and were accompanied by staff from Alaska State Parks and Alaska Department of Law in addition to representatives from the landowners on several visits.

Potential projects that have emerged from the meetings and site visits include ownerships held by Ouzinkie Native Corporation on northern Afognak Island, the Triplets (also owned by Ouzinkie Native Corporation), Long Island and Termination Point (owned by Leisnoi, Inc), Sheratin Bay (owned by Mental Health Land Trust), Long Lagoon and Perenos Bay parcels (owned by Koniag, Inc). Appraisals were ordered for Termination Point, Long Island and the Ouzinkie lands.

Great Land Trust has also applied for and received \$1,000,000 matching funding from USFWS for the Perenos Bay parcels owned by Koniag, Inc. and is working with the Conservation Fund to coordinate the use of the mitigation funds available from the Kodiak airport expansion.

During Year 2, GLT staff traveled to Kodiak several times to meet with agency staff and key landowners to continue work on due diligence activities and negotiations for acquiring a number of parcels. The project parcels focused on during this year were Termination Point, Long Island, Chiniak Coast, American and Olds Rivers (Leisnoi, Inc.), Northern Afognak Island and the Triplet Islands (Ouzinkie Native Corporation), and Perenos Bay (Koniag Native Corporation). The Northern Afognak and Triplet Islands project has been approved by the EVOS Trustee Council, the AK State Legislature, and the Governor, and is moving forward. Due diligence is nearly complete and a draft Purchase and Sale agreement has been completed. In addition, other potential projects have been assessed and negotiations continue with landowners, including Paramanof Bay (Koniag, Inc), Sharatin Bay (Alaska Mental Health Trust) and Wide Bay (University of Alaska). GLT has also met with Chugach Alaska Corporation, Eyak Corporation and is scheduling meetings with CIRI and BBNC.

During this project period GLT continued meetings with EVOS staff, Federal agency realty officials including USFWS, NPS, and USFS and State agency officials and continued data collection and methodology development for a spill-wide area prioritization. Biologists, land managers, and agency partners were contacted to contribute data to the prioritization effort. Several meetings were held with stakeholders to provide comments on the draft prioritization maps for the entire spill area. In addition landowners and regional and local government officials were contacted to obtain land status information for both surface and subsurface for the entire spill area. Maps of the prioritization and land status are attached.

Project Goals and Objectives

GLT seeks to continue to permanently conserve important habitat in the EVOS-affected area with the acquisition of fee title properties of high conservation value. GLT will continue to implement a multi-year project by expanding the Kodiak Archipelago conservation prioritization to include the entire spill area. GLT will continue negotiations and due diligence for high priority projects identified in the Kodiak Prioritization and will contact landowners of parcels with high ranking conservation value in the entire spill area to determine their interest in habitat conservation. During the period of performance for this grant, GLT will develop up to 5 large acquisition projects within the EVOS area. GLT will contract a phased appraisal (described below) of the highest ranking parcels with willing landowners. GLT will seek matching funds for projects appropriate for EVOS funding, and working closely with partners, will complete or make substantial progress on at least 2-3 large scale conservation projects within the grant period.

Project Activities, Methods and Timetable

Funding Compliance

GLT intends to adhere to the following conditions regarding project methodology. The following conditions are from Resolution 13-03 of the EVOSTC:

- a. The funds are to be used by GLT, as described in the Proposal, to facilitate the acquisition of lands and interests in lands (e.g., fee title, conservation easements, mineral rights, timber rights) important to the conservation and protection of marine and coastal resources, ecosystems, and habitats in order to aid in the overall recovery of, and to enhance the long-term health and viability of, those resources injured by the *Exxon Valdez* oil spill and the spill-area ecosystems;
- b. GLT shall pursue parcels only from willing sellers and the sellers shall complete the relevant Council nomination form;
- c. GLT shall pursue protection, including identification, appraisal, commitments and approvals, of any specific parcel only after consultation and agreement by the entities that would own or manage the interests in the parcel and with the U.S. Fish and Wildlife Service (USFWS), Alaska Department of Natural Resources (ADNR), and the Alaska Department of Law (ADOL);
- d. GLT shall ensure that any entity which would own or manage the interests in the parcel, as well as USFWS, ADNR, and ADOL, shall review and approve all conveyance documents and required actions, such as determining the required appraisal instructions, environmental reviews and site visits;
- e. GLT shall submit quarterly updates to ADNR, ADOL and the EVOSTC Executive Director in addition to the semi-annual reports it submits to the USFWS, as per the USFWS reporting schedule, and shall ensure the reports convey the information needed by USFWS, ADNR, ADOL and EVOSTC.
- f. GLT shall acquire parcels only after unanimous approval of the Council; the approval process shall include reasonable and adequate public notice about the proposed acquisition and an opportunity for public comment.

Great Land Trust proposes to carry out the project objectives in the EVOS area through a multi-step process:

1. Project Identification

GLT will use a recently completed conservation prioritization for the entire spill area to identify habitat with the highest conservation value (see Prioritization maps). GLT will utilize these maps for the entire spill area to identify habitat with the highest conservation value. These prioritizations incorporate the latest information on land ownership including all projects previously completed with EVOS funding. All unprotected private lands, in addition to State lands owned by Mental Health Trust, are ranked for their conservation value. The prioritization includes current bird distribution data for all special status species as well as subwatershed rankings for anadromous fish diversity throughout the spill area. GLT will continue to obtain feedback on the prioritizations from EVOS Trustees, staff, USFWS, ADFG, ADNR, ADOL, and other key landowners and government officials.

2. Landowner Contact

GLT will contact the landowners of high-ranking parcels to determine their willingness to sell fee simple or a conservation easement. This will also include discussions with the landowners regarding acreage and parcel configuration, timelines, and due diligence. GLT will meet frequently with agency and EVOSTC staff during this phase of the project to get feedback on the projects that seem to have the most promise.

3. Appraisal

GLT will contract a phased appraisal of the highest ranking parcels with willing landowners based on the meetings conducted in step two. The first phase of the appraisal will include a meeting with the appraiser after research has been conducted by the appraiser. The appraiser will report the expected high and low range of values for the value of the property. A full appraisal will be completed only if the initial range of values is acceptable to both the buyer and the seller.

4. Matching Funds Partner Outreach

GLT will seek matching funds for projects that appear to be a good fit for EVOS funding. This will include funding from sources including the Forest Legacy Program, USFWS National Coastal Wetlands Program, and private foundations. This process takes 6-18 months but can yield significant funding that may allow more acres to be purchased.

5. Final Project Completion

GLT will work closely with EVOS Trustee Council Staff, DNR, USFWS, ADNR, ADOL, and other partners to complete up to approximately \$100 million in high priority conservation projects with willing landowners in the Spill Area as part of this project.

Project Milestones:

April 15-September 30, 2013:

- Finish project parcel identification using recently completed Kodiak archipelago conservation prioritization.

June 1- August 30, 2013:

- Initiate site assessments of 3-5 high ranking projects.

October 1, 2013- March 30, 2014:

- Develop conservation prioritization of the entire spill area.
- Continue landowner outreach on Kodiak Archipelago.
- Complete 2-3 appraisals of high-ranking projects on Kodiak Archipelago.
- Initiate Kodiak Archipelago project negotiations.

April 1, 2014- January 31, 2015

- Landowner outreach to landowners of high ranking parcels in the entire spill area to determine willing parties.
- Complete due diligence on 2-3 Kodiak Archipelago projects.
- Submit Kodiak Archipelago project packages to EVOSTC for full funding.
- Continue landowner outreach in the entire spill area.
- Complete 1-2 appraisals of high ranking projects in the spill area outside of Kodiak.
- Initiate project negotiations for projects in the greater spill area.

February 1, 2015 – January 31, 2016

- Complete due diligence on 2-3 additional spill area projects.
- Submit additional spill area project packages to EVOSTC for full funding.

February 1, 2016 – January 31, 2017

- Complete due diligence on 2-3 additional spill area projects.
- Submit additional spill area project packages to EVOSTC for full funding.

Budget:

		Year 3 (FY15)	Year 4 (FY16)
		Feb 1, 2015 – Jan 31, 2016	Feb 1, 2016 – Jan 31, 2017
GLT Staff	3 staff, 30hr/wk for 40 weeks @ \$50/hour	\$180,000	\$180,000
Travel	Airfare from ANC to KOD (or Prince William Sound, Alaska Peninsula, and other Spill area project locations) \$1,200/trip/staff @ 5 trips for 2 staff = \$4,800; travel within Travel via float plane @ \$650/hr @ 25 hrs = \$16,250; \$3,750 food, lodging, rental car.	\$32,000	\$32,000
Appraisal	Appraisals @ \$25,000 each	\$50,000	\$50,000
Phase I Environmental Site Assessment	Phase I ESA reports @ \$7,000 - \$10,000 each	\$27,000	\$27,000
Legal	@ \$370/ hr	\$14,800	\$14,800
Total		\$303,800	\$303,800

Anticipated Products/Outputs

Anticipated outputs for this grant include the prioritization and acquisition of high priority fee title properties within the EVOS area. In addition, some projects may be conservation easements held by USFWS or ADNR. Specific goals below:

- Substantial progress toward completion of fee title property acquisition of 30,000 acres within the EVOS area.
- Permanent protection of 5,000 acres of wetlands within the EVOS area.
- Permanent protection of up to 10 miles of coastline within the EVOS area.
- Permanent protection of up to 10 miles of anadromous streams within the EVOS area.

Project Monitoring and Evaluation

GLT will submit quarterly updates to USFWS, ADNR, ADOL, and EVOSTC on the status of the completion of project objectives. Upon completion of purchase of habitat with EVOSTC funding, a permanent conservation easement will be held by either ADNR or USFWS requiring annual monitoring of conservation values.

Description of Organization Undertaking the Project

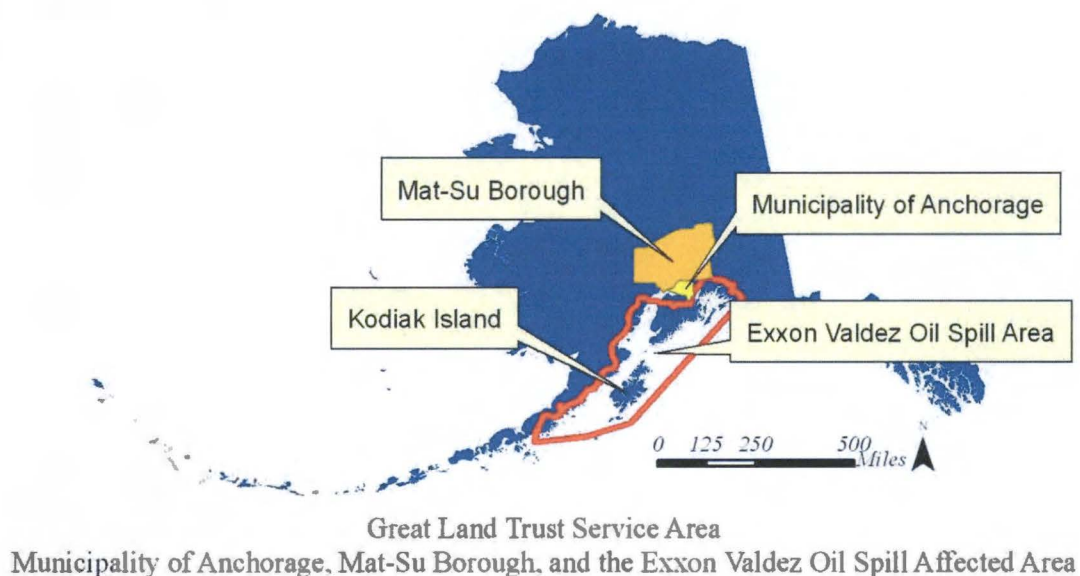
GLT is Southcentral Alaska's regional land trust. It is an independent nonprofit land conservation organization founded by and for Alaskans in 1995. Our service area includes more than 50 percent of Alaska's total population and ranges from the Alaska Range in the North to Prince William Sound and Kodiak in the south. GLT is the only Alaska-based land trust working in Kodiak and is in an excellent position to work there because of our broad expertise. The other adjacent land trusts and national conservation organizations in Alaska were consulted prior to GLT's expansion to Kodiak and felt GLT was in the best position to work in this important area. GLT works in partnership with willing private and public landowners to permanently conserve special lands, signature landscapes, and waters essential to the quality of life and economic health of communities in the region. We seek to protect the integrity of the natural ecosystems, wetlands and streams, access to recreational lands, and conserve lands important for towns and cities.

GLT, an accredited land trust, has extensive experience with wildlife habitat and wetland conservation projects. Since 1995, GLT has completed 27 land conservation projects totaling nearly 8500 acres in Southcentral Alaska, including over 40 miles of salmon streams. GLT has professional staff skilled at carrying out complex land transactions. GLT has been nationally recognized for wetland conservation successes including the LTA Living Lands Publication, the Coastal America 2007 Partnership Award, the US DOI Cooperative Conservation Award 2008 and was awarded the Outstanding Partner Award by the Region 7 Director of USFWS for 2011. In addition, GLT recently became the first land trust in Alaska and one of only 200 nationwide to achieve accreditation with the Land Trust Alliance Accreditation Commission.

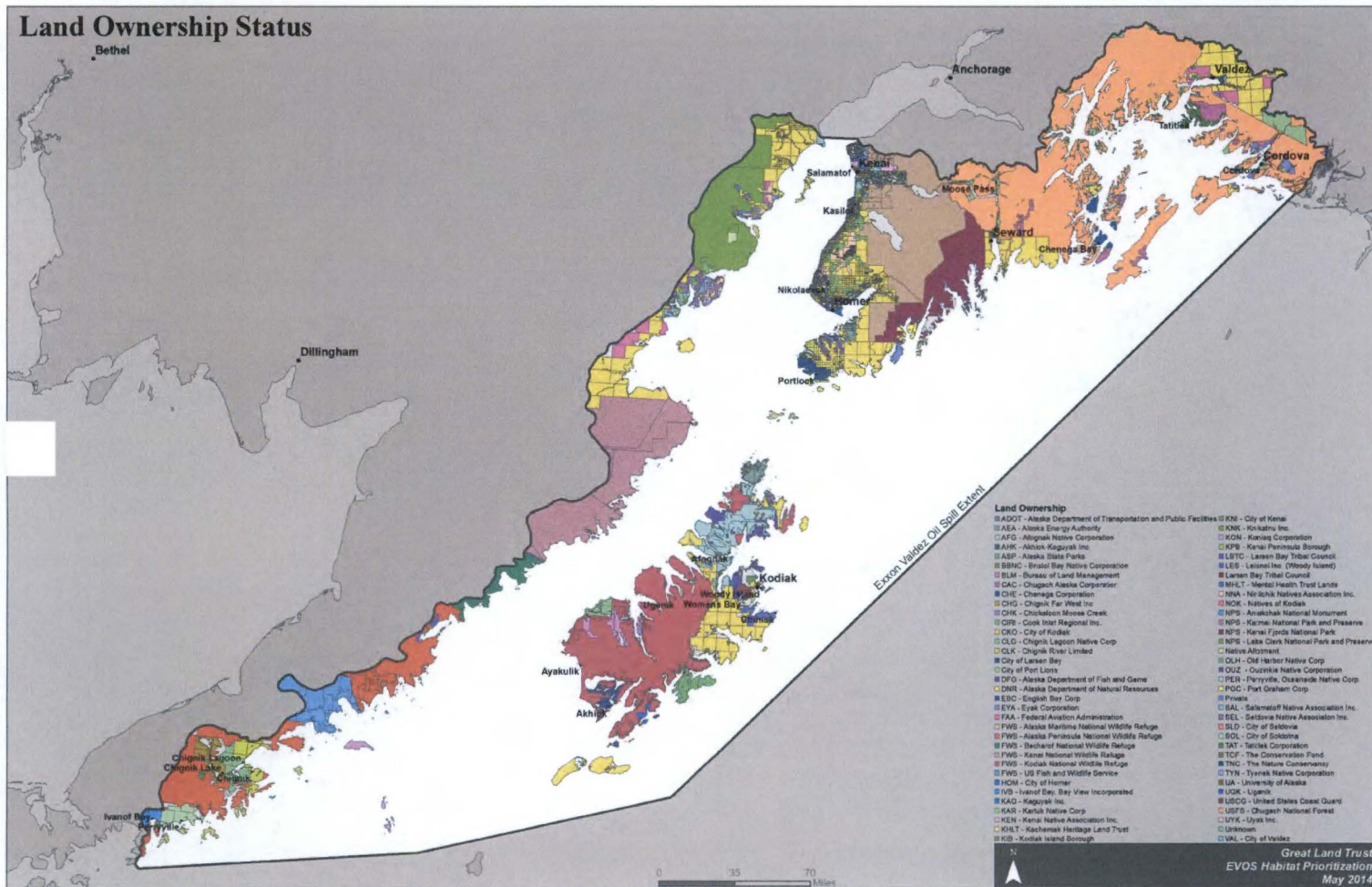
Sustainability

Upon completion of purchase of habitat with EVOSTC funding, a permanent conservation easement will be held by either ADNR or USFWS.

Map of Project Area

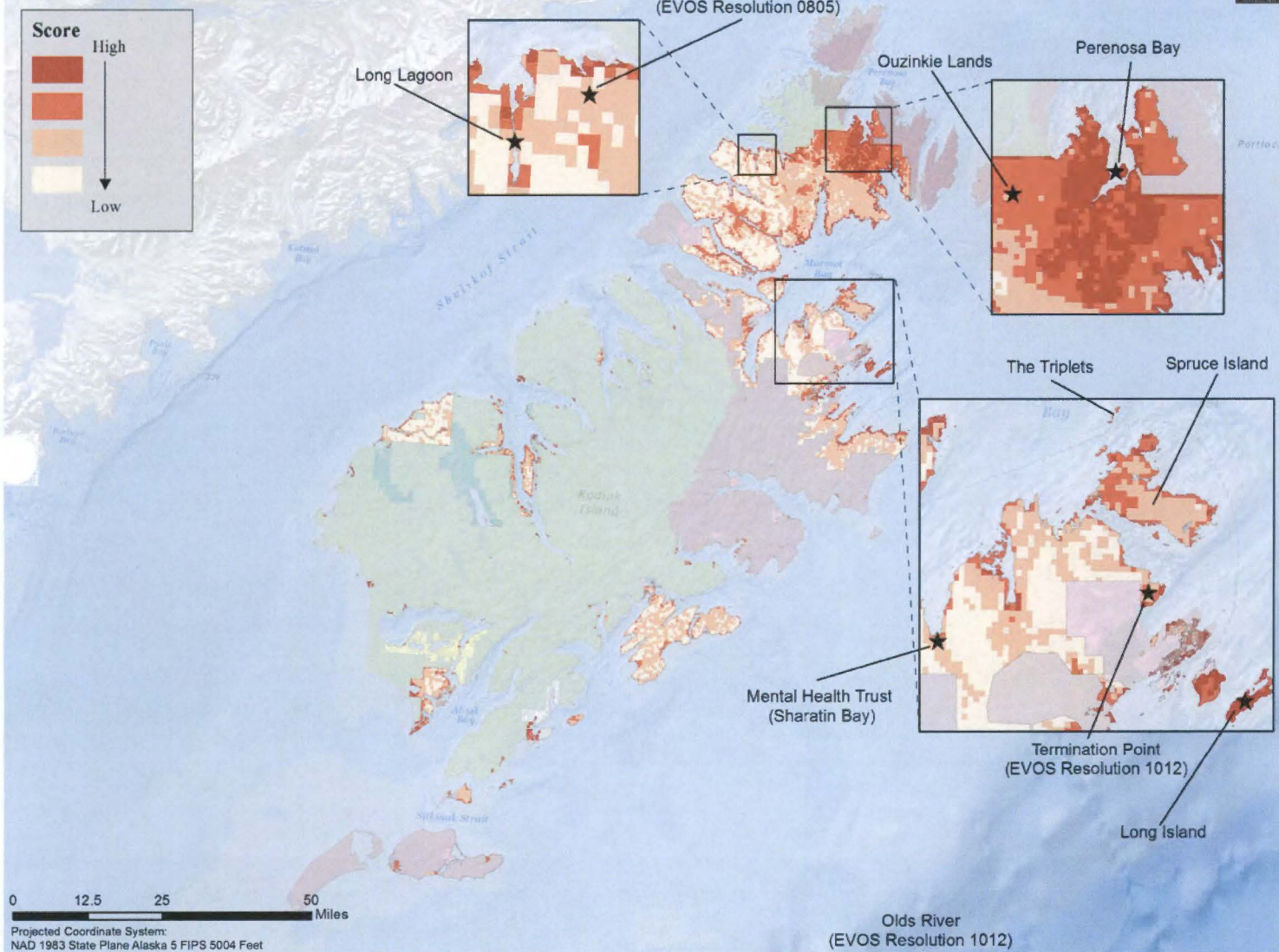


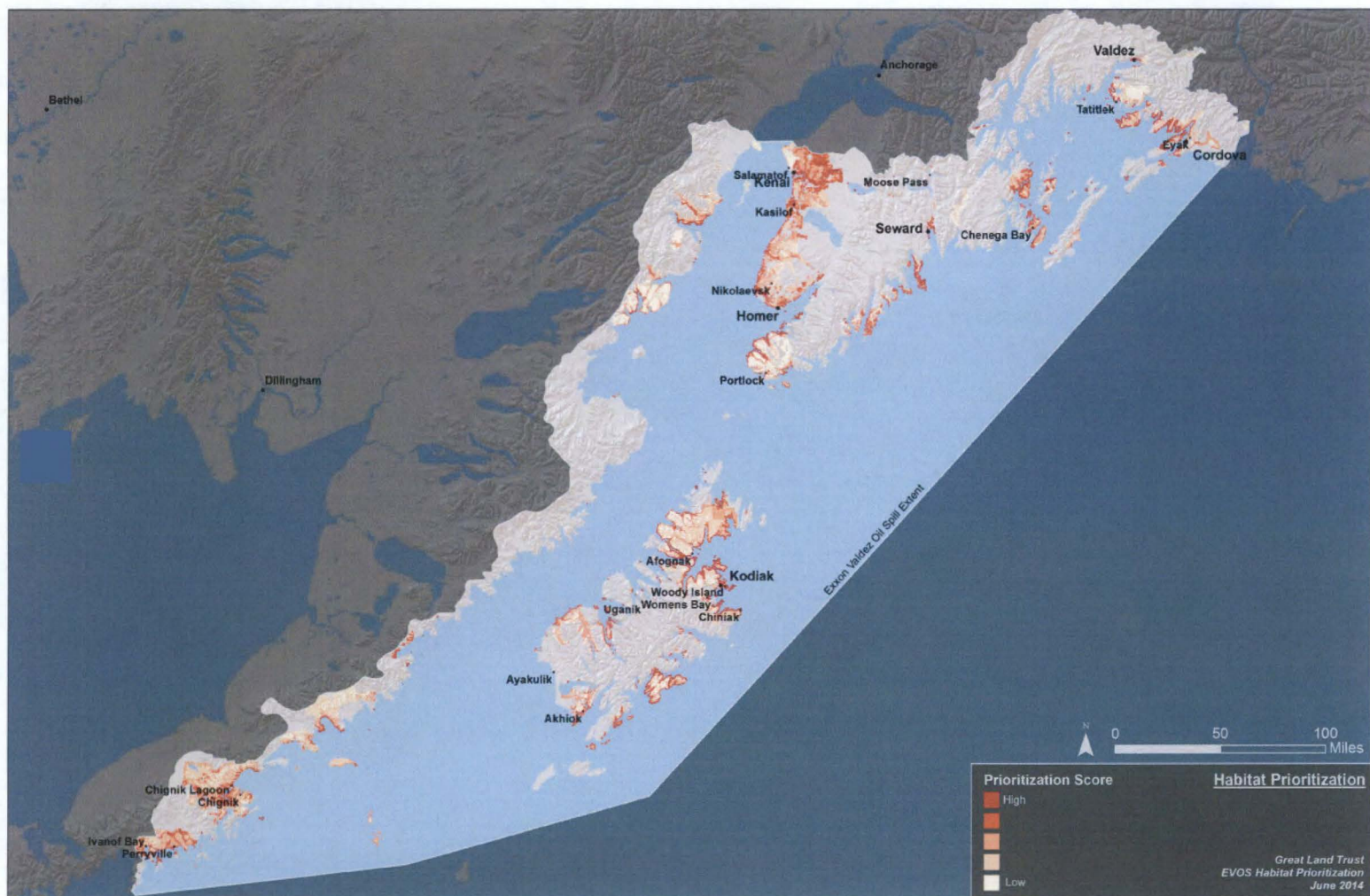
Land Ownership Status



Great Land Trust
EVOS Habitat Prioritization
May 2014

Prioritization Results for Kodiak







EVOSTC Great Land Trust Spill Area Ecosystem Habitat Conservation Project YEARS 3 (FY15) & 4 (FY16)

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GLT will work closely with EVOSTC, United States Fish and Wildlife Service (USFWS), and the Alaska Departments of Natural Resources and Law in order to complete these projects. GLT will actively seek significant grant funding from other sources to compliment EVOS funding to carry out the top projects. Of the projects developed, we intend to complete or make substantial progress on at least two or three large-scale (greater than 1,000 acres) conservation projects with landowners in the entire spill area during years 3 and 4.

Project Narrative

Statement of Need

This project seeks to contribute to the objectives of the EVOSTC to aid in the recovery and enhancement of the long term health and viability of the resources injured by the EVOS. This project will seek to acquire priority lands within the EVOS area and increase the capacity of the existing, established EVOS habitat program.

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GLT has completed significant projects with a wide range of partners including the Municipality of Anchorage, the Mat-Su Borough, State of

Alaska Department of Fish and Game, State of Alaska Department of Natural Resources and State Parks, USFWS, Army Corps of Engineers, NOAA, Alaska Native Corporations, Ducks Unlimited, Pacific Coast Joint Venture and numerous private businesses and landowners. GLT has experience raising and managing significant public and private funding, having completed nearly \$14 million in conservation projects over the last 36 months. GLT also has extensive experience with mitigation funding, having operated an In-lieu Fee program under a Memorandum of Understanding with the Army Corps of Engineers since 1998. As part of this program, GLT has completed 9 conservation projects and received hundreds of payments totaling over \$12 million.

Update on Year 1 and 2 Project Accomplishments

This FY2015 proposal will fund Year 3 of a multi-year project. During Year 1 GLT accomplished numerous tasks from our list of deliverables for the grant. Using data from the Kodiak prioritization completed early in 2013, GLT staff met numerous times with key landowners, both in Kodiak and here in Anchorage. Landowners included several Native corporations, as well as the Kodiak Borough Mayor, Manager and staff from Mental Health Trust Land Office. In addition, GLT met multiple times with the realty staff at USFWS as well as Kodiak Refuge staff and numerous Fish and Game staff in Kodiak. GLT staff met with Kodiak Soil and Water Conservation District staff and staff at both Rep. Austerman's and Sen. Steven's Offices. GLT met with Alaska State Parks staff several times and consulted with staff at NOAA and The Conservation Fund regarding conservation projects on Kodiak. In gathering data for the prioritization we consulted with additional staff including individuals from Kodiak Island Borough, Koncor, Pacific Coast Joint Venture, Audubon Alaska and the others mentioned above.

During the grant period GLT made site visits to numerous properties and were accompanied by staff from Alaska State Parks and Alaska Department of Law in addition to representatives from the landowners on several visits.

A number of potential projects emerged from these meetings and site visits, and GLT ordered and obtained appraisals for several of these projects.

Great Land Trust has also applied for and received \$1,000,000 matching funding from USFWS for a project in Kodiak and is working with the Conservation Fund to coordinate the use of the mitigation funds available from the Kodiak airport expansion.

During Year 2, GLT staff traveled to Kodiak several times to meet with agency staff and key landowners to continue work on due diligence activities and negotiations for acquiring a number of parcels. In addition to working on other potential projects, GLT pursued the acquisition of approximately 36,370 acres of land on Northern Afognak Island and the Triplet Islands, currently owned by Ouzinkie Native Corporation. This acquisition was approved by the EVOS Trustee Council, the AK State Legislature, and the Governor, and is moving forward. Due diligence is nearly complete and a draft Purchase and Sale agreement has been completed. In addition, other potential projects have been assessed and negotiations continue with landowners.

During this project period GLT continued meetings with EVOS staff, Federal agency realty officials including USFWS, NPS, and USFS and State agency officials and continued data collection and methodology development for a spill-wide area prioritization. Biologists, land managers, and agency partners were contacted to contribute data to the prioritization effort. Several meetings were held with stakeholders to provide comments on the draft prioritization maps for the entire spill area. In addition landowners and regional and local government officials were contacted to obtain land status information for both surface and subsurface for the entire spill area.

Project Goals and Objectives

GLT seeks to continue to permanently conserve important habitat in the EVOS-affected area with the acquisition of fee title properties of high conservation value. GLT will continue to implement a multi-year project by expanding the Kodiak Archipelago conservation prioritization to include the entire spill area. GLT will continue negotiations and due diligence for high priority projects identified in the Kodiak Prioritization and will contact landowners of parcels with high ranking conservation value in the entire spill area to determine their interest in habitat conservation. During the period of performance for this grant, GLT will develop up to 5 large acquisition projects within the EVOS area. GLT will contract a phased appraisal (described below) of the highest ranking parcels with willing landowners. GLT will seek matching funds for projects appropriate for EVOS funding, and working closely with partners, will complete or make substantial progress on at least 2-3 large scale conservation projects within the grant period.

Project Activities, Methods and Timetable

Funding Compliance

GLT intends to adhere to the following conditions regarding project methodology. The following conditions are from Resolution 13-03 of the EVOSTC:

- a. The funds are to be used by GLT, as described in the Proposal, to facilitate the acquisition of lands and interests in lands (e.g., fee title, conservation easements, mineral rights, timber rights) important to the conservation and protection of marine and coastal resources, ecosystems, and habitats in order to aid in the overall recovery of, and to enhance the long-term health and viability of, those resources injured by the EVOS and the spill-area ecosystems;
- b. GLT shall pursue parcels only from willing sellers and the sellers shall complete the relevant Council nomination form;
- c. GLT shall pursue protection, including identification, appraisal, commitments and approvals, of any specific parcel only after consultation and agreement by the entities that would own or manage the interests in the parcel and with the U.S. Fish and Wildlife Service (USFWS), Alaska Department of Natural Resources (ADNR), and the Alaska Department of Law (ADOL);
- d. GLT shall ensure that any entity that would own or manage the interests in the parcel, as well as USFWS, ADNR, and ADOL, shall review and approve all conveyance documents and required actions, such as determining the required appraisal instructions, environmental reviews and site visits;

- e. GLT shall submit quarterly updates to ADNR, ADOL and the EVOSTC Executive Director in addition to the semi-annual reports it submits to the USFWS, as per the USFWS reporting schedule, and shall ensure the reports convey the information needed by USFWS, ADNR, ADOL and EVOSTC.
- f. GLT shall acquire parcels only after unanimous approval of the Council; the approval process shall include reasonable and adequate public notice about the proposed acquisition and an opportunity for public comment.

Great Land Trust proposes to carry out the project objectives in the EVOS area through a multi-step process:

1. Project Identification

GLT will use a recently completed conservation prioritization for the entire spill area to identify habitat with the highest conservation value. These prioritizations incorporate the latest information on land ownership including all projects previously completed with EVOS funding. All unprotected private lands, in addition to State lands owned by Mental Health Trust, are ranked for their conservation value. The prioritization includes current bird distribution data for all special status species as well as subwatershed rankings for anadromous fish diversity throughout the spill area. GLT will continue to obtain feedback on the prioritizations from EVOS Trustees, staff, USFWS, ADFG, ADNR, ADOL, and other key landowners and government officials.

2. Landowner Contact

GLT will contact the landowners of high-ranking parcels to determine their willingness to sell fee simple or a conservation easement. This will also include discussions with the landowners regarding acreage and parcel configuration, timelines, and due diligence. GLT will meet frequently with agency and EVOSTC staff during this phase of the project to get feedback on the projects that seem to have the most promise.

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GLT will contract a phased appraisal of the highest ranking parcels with willing landowners based on the meetings conducted in step two. The first phase of the appraisal will include a meeting with the appraiser after research has been conducted by the appraiser. The appraiser will report the expected high and low range of values for the value of the property. A full appraisal will be completed only if the initial range of values is acceptable to both the buyer and the seller.

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GLT will seek matching funds for projects that appear to be a good fit for EVOS funding. This will include funding from sources including the Forest Legacy Program, USFWS National Coastal Wetlands Program, and private foundations. This process takes 6-18 months but can yield significant funding that may allow more acres to be purchased.

5. Final Project Completion

GLT will work closely with EVOS Trustee Council Staff, DNR, USFWS, ADNR, ADOL, and other partners to complete up to approximately \$100 million in high priority

conservation projects with willing landowners in the Spill Area as part of this project.

Project Milestones:

April 15-September 30, 2013:

- Finish project parcel identification using recently completed Kodiak archipelago conservation prioritization.

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- Initiate site assessments of 3-5 high ranking projects.

October 1, 2013- March 30, 2014:

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- Continue landowner outreach on Kodiak Archipelago.
- Complete 2-3 appraisals of high-ranking projects on Kodiak Archipelago.
- Initiate Kodiak Archipelago project negotiations.

April 1, 2014- January 31, 2015

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- Submit Kodiak Archipelago project packages to EVOSTC for full funding.
- Continue landowner outreach in the entire spill area.
- Complete 1-2 appraisals of high ranking projects in the spill area outside of Kodiak.
- Initiate project negotiations for projects in the greater spill area.

February 1, 2015 – January 31, 2016

- Complete due diligence on 2-3 additional spill area projects.
- Submit additional spill area project packages to EVOSTC for full funding.

February 1, 2016 – January 31, 2017

- Complete due diligence on 2-3 additional spill area projects.
- Submit additional spill area project packages to EVOSTC for full funding.

Budget:

		Year 3 (FY15)	Year 4 (FY16)
		Feb 1, 2015 – Jan 31, 2016	Feb 1, 2016 – Jan 31, 2017
GLT Staff	3 staff, 30hr/wk for 40 weeks @ \$50/hour	\$180,000	\$180,000
Travel	Airfare from ANC to KOD (or Prince William Sound, Alaska Peninsula, and other Spill area project locations) \$1,200/trip/staff @ 5 trips for 2 staff = \$4,800; travel within Travel via float plane @ \$650/hr @ 25 hrs = \$16,250; \$3,750 food, lodging, rental car.	\$32,000	\$32,000
Appraisal	Appraisals @ \$25,000 each	\$50,000	\$50,000
Phase I Environmental Site Assessment	Phase I ESA reports @ \$7,000 - \$10,000 each	\$27,000	\$27,000
Legal	@ \$370/ hr	\$14,800	\$14,800
Total		\$303,800	\$303,800

Anticipated Products/Outputs

Anticipated outputs for this grant include the prioritization and acquisition of high priority fee title properties within the EVOS area. In addition, some projects may be conservation easements held by USFWS or ADNR. Specific goals below:

- Substantial progress toward completion of fee title property acquisition of 30,000 acres within the EVOS area.
- Permanent protection of 5,000 acres of wetlands within the EVOS area.
- Permanent protection of up to 10 miles of coastline within the EVOS area.
- Permanent protection of up to 10 miles of anadromous streams within the EVOS area.

Project Monitoring and Evaluation

GLT will submit quarterly updates to USFWS, ADNR, ADOL, and EVOSTC on the status of the completion of project objectives. Upon completion of purchase of habitat with EVOSTC funding, a permanent conservation easement will be held by either ADNR or USFWS requiring annual monitoring of conservation values.

Description of Organization Undertaking the Project

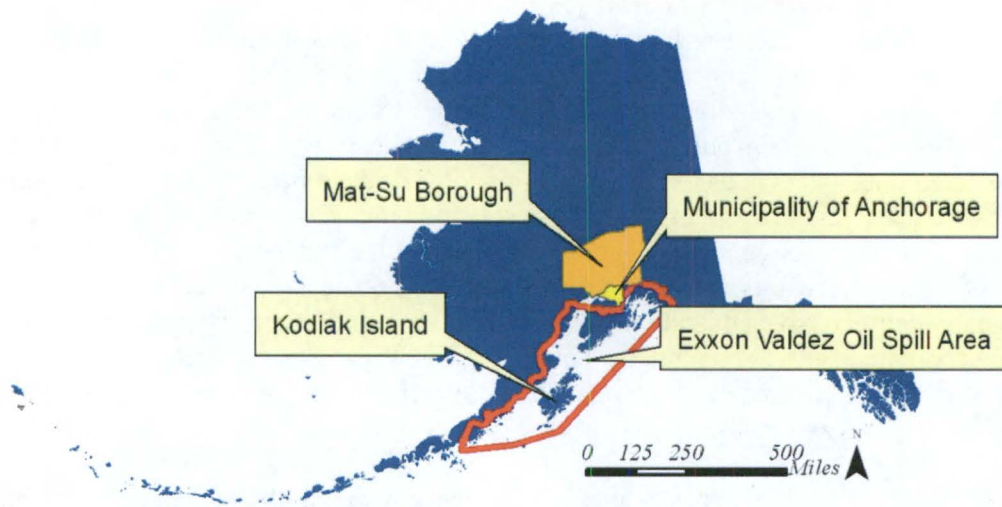
GLT is Southcentral Alaska's regional land trust. It is an independent nonprofit land conservation organization founded by and for Alaskans in 1995. Our service area includes more than 50 percent of Alaska's total population and ranges from the Alaska Range in the North to Prince William Sound and Kodiak in the south. GLT is the only Alaska-based land trust working in Kodiak and is in an excellent position to work there because of our broad expertise. The other adjacent land trusts and national conservation organizations in Alaska were consulted prior to GLT's expansion to Kodiak and felt GLT was in the best position to work in this important area. GLT works in partnership with willing private and public landowners to permanently conserve special lands, signature landscapes, and waters essential to the quality of life and economic health of communities in the region. We seek to protect the integrity of the natural ecosystems, wetlands and streams, access to recreational lands, and conserve lands important for towns and cities.

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Sustainability

Upon completion of purchase of habitat with EVOSTC funding, a permanent conservation easement will be held by either ADNR or USFWS.

Map of Project Area



Great Land Trust Service Area
Municipality of Anchorage, Mat-Su Borough, and the Exxon Valdez Oil Spill Affected Area



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September 25, 2014
GLT Proposal for TC
Confidential

EVOSTC Great Land Trust Spill Area Ecosystem Habitat Conservation Project YEARS 3 (FY15) & 4 (FY16)

Project Summary

Great Land Trust (GLT) requests funding from the *Exxon Valdez* Oil Spill Trustee Council (EVOSTC) Habitat Acquisition Fund to continue work on up to five conservation projects that will implement habitat conservation actions to aid in the recovery and enhancement of the long term health and viability of those resources injured by the *Exxon Valdez* oil spill (EVOS) and spill area ecosystems. GLT will carry out this work over a multi-year period. Beginning in 2013, the first year of the project, GLT focused on the Kodiak Afognak Archipelago area; the scope broadened to include all of the spill area in 2014, the second year of the project. Using a land conservation prioritization that GLT developed specifically for the Kodiak Afognak Archipelago, we identified multiple high ranking conservation projects and have begun due diligence and negotiations with landowners on six of the highest ranking projects. During Years 3 and 4, GLT will expand the land conservation prioritization to include the entire spill area and will continue due diligence and negotiations.

GLT will work closely with EVOSTC, United States Fish and Wildlife Service (USFWS), and the Alaska Departments of Natural Resources and Law in order to complete these projects. GLT will actively seek significant grant funding from other sources to compliment EVOS funding to carry out the top projects. Of the projects developed, we intend to complete or make substantial progress on at least two or three large-scale (greater than 1,000 acres) conservation projects with landowners in the entire spill area during years 3 and 4.

Project Narrative

Statement of Need

This project seeks to contribute to the objectives of the EVOSTC to aid in the recovery and enhancement of the long term health and viability of the resources injured by the EVOS. This project will seek to acquire priority lands within the EVOS area and increase the capacity of the existing, established EVOS habitat program.

This proposal will provide funding for Year 3 (FY15) of a multi-year project.

GLT has completed significant projects with a wide range of partners including the Municipality of Anchorage, the Mat-Su Borough, State of Alaska Department of Fish and Game, State of Alaska Department of Natural Resources and State Parks, USFWS, Army Corps of Engineers,

NOAA, Alaska Native Corporations, Ducks Unlimited, Pacific Coast Joint Venture and numerous private businesses and landowners. GLT has experience raising and managing significant public and private funding, having completed nearly \$14 million in conservation projects over the last 36 months. GLT also has extensive experience with mitigation funding, having operated an In-lieu Fee program under a Memorandum of Understanding with the Army Corps of Engineers since 1998. As part of this program, GLT has completed 9 conservation projects and received hundreds of payments totaling over \$12 million. Two recent projects are described below.

The Campbell Creek Estuary Conservation Project:

GLT succeeded in raising \$7.5 million dollars to purchase and conserve Campbell Creek Estuary, the last undeveloped estuary of the original seven salmon streams in Anchorage. GLT worked with the Municipality of Anchorage and many other partners for three years to raise funds to purchase the 60-acre parcel and donate it to the Municipality as a new Natural Area; GLT retained a conservation easement. The Project conserved ½ mile of Campbell Creek's lower reaches including the Estuary and its critical tidal marsh habitat as well as 25 acres of coastal forest. This parcel also provides access to the Anchorage Coastal Wildlife Refuge. Project funding included dollars to clean up the property, develop a park plan, create a modest trailhead and gravel trails, as well as monitor and address the conservation needs of the property annually.

Knik Islands Conservation Project:

The Knik Islands Conservation Project was completed in the fall of 2011 as a partnership between GLT and Eklutna, Inc. The project permanently conserves nearly 4800 acres at the mouth of the Knik and Matanuska Rivers with a conservation easement. This land will remain under the ownership of Eklutna, Inc. and traditional uses such as hunting and fishing by Shareholders, and public access through permits, will continue. This property contains excellent habitat for all five species of salmon in Cook Inlet as well as many other wildlife species. In addition, the property provides a wildlife and recreational corridor between Palmer Hay Flats State Game Refuge and Chugach State Park. Scenic views of the property are well known by travelers crossing the Knik River Bridge on the Glenn Highway. This project was made possible through a collaborative effort with the Mat-Su Salmon Partnership, USFWS, the Army Corps of Engineers, NOAA Fisheries, Alaska Department of Fish and Game, and CIRI. Funding for this conservation easement was made possible through resources set aside to offset habitat losses associated with the expansion of the Port of Anchorage.

Update on Year 1 and 2 Project Accomplishments

This FY2015 proposal will fund Year 3 of a multi-year project. During Year 1 GLT accomplished numerous tasks from our list of deliverables for the grant. Using data from the Kodiak prioritization completed early in 2013, GLT staff met numerous times with key landowners, both in Kodiak and here in Anchorage. Landowners included the Koniag Regional Native Corporation, Ouzinkie Native Corporation, Lesnoi Native Corporation, Natives of Kodiak Corporation, as well as the Kodiak Borough Mayor, Manager and staff from Mental Health Trust Land Office. In addition, GLT met multiple times with the realty staff at USFWS as well as Kodiak Refuge staff and numerous Fish and Game staff in Kodiak. GLT staff met with Kodiak

Soil and Water Conservation District staff and staff at both Rep. Austerman's and Sen. Steven's Offices. GLT met with Alaska State Parks staff several times and consulted with staff at NOAA and The Conservation Fund regarding conservation projects on Kodiak. In gathering data for the prioritization we consulted with additional staff including individuals from Kodiak Island Borough, Koncor, Pacific Coast Joint Venture, Audubon Alaska and the others mentioned above.

During the grant period GLT made site visits to numerous properties and were accompanied by staff from Alaska State Parks and Alaska Department of Law in addition to representatives from the landowners on several visits.

Potential projects that have emerged from the meetings and site visits include ownerships held by Ouzinkie Native Corporation on northern Afognak Island, the Triplets (also owned by Ouzinkie Native Corporation), Long Island and Termination Point (owned by Leisnoi, Inc), Sheratin Bay (owned by Mental Health Land Trust), Long Lagoon and Perenosa Bay parcels (owned by Koniag, Inc). Appraisals were ordered for Termination Point, Long Island and the Ouzinkie lands.

Great Land Trust has also applied for and received \$1,000,000 matching funding from USFWS for the Perenosa Bay parcels owned by Koniag, Inc. and is working with the Conservation Fund to coordinate the use of the mitigation funds available from the Kodiak airport expansion.

During Year 2, GLT staff traveled to Kodiak several times to meet with agency staff and key landowners to continue work on due diligence activities and negotiations for acquiring a number of parcels. The project parcels focused on during this year were Termination Point, Long Island, Chiniak Coast, American and Olds Rivers (Leisnoi, Inc.), Northern Afognak Island and the Triplet Islands (Ouzinkie Native Corporation), and Perenosa Bay (Koniag Native Corporation). The Northern Afognak and Triplet Islands project has been approved by the EVOS Trustee Council, the AK State Legislature, and the Governor, and is moving forward. Due diligence is nearly complete and a draft Purchase and Sale agreement has been completed. In addition, other potential projects have been assessed and negotiations continue with landowners, including Paramanof Bay (Koniag, Inc), Sharatin Bay (Alaska Mental Health Trust) and Wide Bay (University of Alaska). GLT has also met with Chugach Alaska Corporation, Eyak Corporation and is scheduling meetings with CIRI and BBNC.

During this project period GLT continued meetings with EVOS staff, Federal agency realty officials including USFWS, NPS, and USFS and State agency officials and continued data collection and methodology development for a spill-wide area prioritization. Biologists, land managers, and agency partners were contacted to contribute data to the prioritization effort. Several meetings were held with stakeholders to provide comments on the draft prioritization maps for the entire spill area. In addition landowners and regional and local government officials were contacted to obtain land status information for both surface and subsurface for the entire spill area. Maps of the prioritization and land status are attached.

Project Goals and Objectives

GLT seeks to continue to permanently conserve important habitat in the EVOS-affected area with the acquisition of fee title properties of high conservation value. GLT will continue to implement a multi-year project by expanding the Kodiak Archipelago conservation prioritization to include the entire spill area. GLT will continue negotiations and due diligence for high priority projects identified in the Kodiak Prioritization and will contact landowners of parcels with high ranking conservation value in the entire spill area to determine their interest in habitat conservation. During the period of performance for this grant, GLT will develop up to 5 large acquisition projects within the EVOS area. GLT will contract a phased appraisal (described below) of the highest ranking parcels with willing landowners. GLT will seek matching funds for projects appropriate for EVOS funding, and working closely with partners, will complete or make substantial progress on at least 2-3 large scale conservation projects within the grant period.

Project Activities, Methods and Timetable

Funding Compliance

GLT intends to adhere to the following conditions regarding project methodology. The following conditions are from Resolution 13-03 of the EVOSTC:

- a. The funds are to be used by GLT, as described in the Proposal, to facilitate the acquisition of lands and interests in lands (e.g., fee title, conservation easements, mineral rights, timber rights) important to the conservation and protection of marine and coastal resources, ecosystems, and habitats in order to aid in the overall recovery of, and to enhance the long-term health and viability of, those resources injured by the *Exxon Valdez* oil spill and the spill-area ecosystems;
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- f. GLT shall acquire parcels only after unanimous approval of the Council; the approval process shall include reasonable and adequate public notice about the proposed acquisition and an opportunity for public comment.

Great Land Trust proposes to carry out the project objectives in the EVOS area through a multi-step process:

1. Project Identification

GLT will use a recently completed conservation prioritization for the entire spill area to identify habitat with the highest conservation value (see Prioritization maps). GLT will utilize these maps for the entire spill area to identify habitat with the highest conservation value. These prioritizations incorporate the latest information on land ownership including all projects previously completed with EVOS funding. All unprotected private lands, in addition to State lands owned by Mental Health Trust, are ranked for their conservation value. The prioritization includes current bird distribution data for all special status species as well as subwatershed rankings for anadromous fish diversity throughout the spill area. GLT will continue to obtain feedback on the prioritizations from EVOS Trustees, staff, USFWS, ADFG, ADNR, ADOL, and other key landowners and government officials.

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Anticipated outputs for this grant include the prioritization and acquisition of high priority fee title properties within the EVOS area. In addition, some projects may be conservation easements held by USFWS or ADNR. Specific goals below:

- Substantial progress toward completion of fee title property acquisition of 30,000 acres within the EVOS area.
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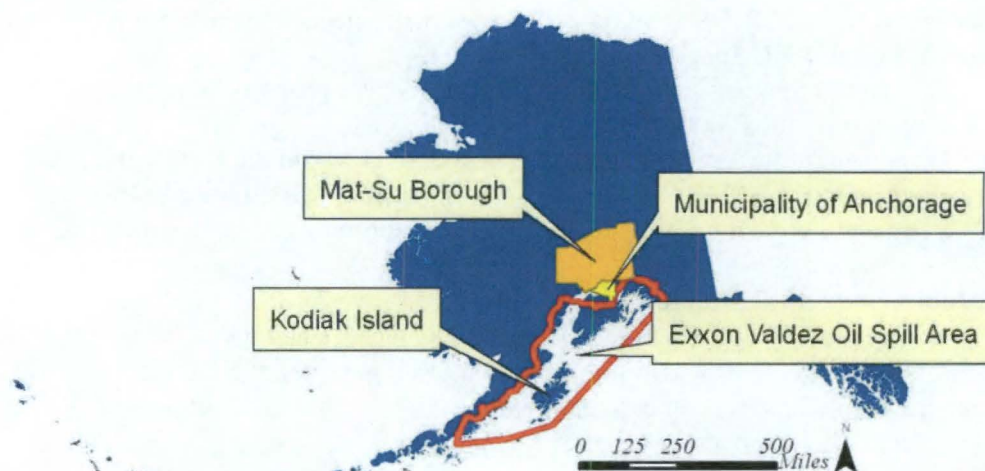
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Sustainability

Upon completion of purchase of habitat with EVOSTC funding, a permanent conservation easement will be held by either ADNR or USFWS.

Map of Project Area



Great Land Trust Service Area
Municipality of Anchorage, Mat-Su Borough, and the Exxon Valdez Oil Spill Affected Area

This map illustrates the land ownership and prioritization for EVOS habitat on Kodiak Island, Alaska. The island is divided into numerous colored regions, each representing a different landowner or management entity. A legend titled "Land Ownership" provides a key for these colors, listing various federal, state, local, and private organizations. Key locations such as Kodiak, Portlock, Seward, and Cordova are labeled. The map also shows the coastline, major water bodies, and the location of the Exxon Valdez Oil Spill Exhibit. A scale bar at the bottom indicates distances up to 70 miles.

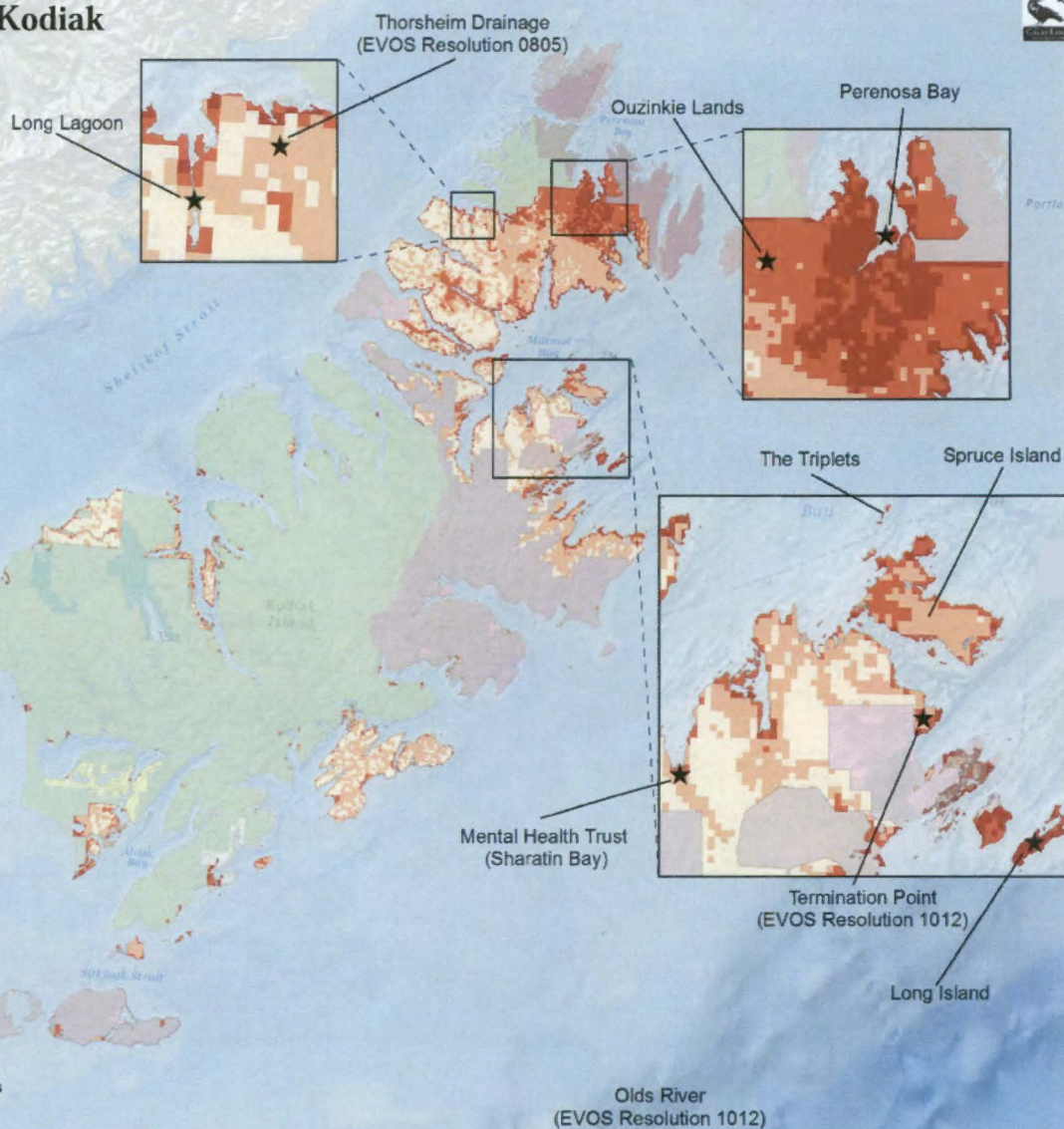
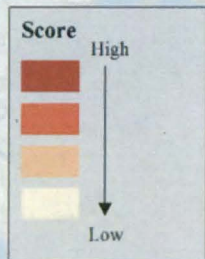
Land Ownership

- ASDOT - Alaska Department of Transportation and Public Facilities
- ASA - Alaska Energy Authority
- AKG - Aleutian Native Corporation
- AANC - Aleutian Native Corporation
- ASP - Alaska State Parks
- BHAC - Bristol Bay Native Corporation
- BLM - Bureau of Land Management
- CAC - Chugach Alaska Corporation
- CHC - Chugach Corporation
- CHG - Chugach Far West Inc.
- CHW - Chugach National Wildlife Refuge
- CMR - Cook Inlet Regional Inc.
- CKO - City of Kodiak
- CLG - Chugach Legation Native Corp.
- CLR - Chugach River Limited
- City of Laramie Bay
- City of Port Lock
- DFO - Alaska Department of Fish and Game
- DNR - Alaska Department of Natural Resources
- EBC - English Bay Corp.
- EYA - Eyak Corporation
- FAR - Federal Aviation Administration
- PWS - Alaska Maritime National Wildlife Refuge
- PWS - Aleutian Peninsula National Wildlife Refuge
- PWS - Barataria National Wildlife Refuge
- PWS - Kani National Wildlife Refuge
- PWS - Kodiak National Wildlife Refuge
- PWS - US Fish and Wildlife Service
- KONI - City of Homer
- IIV - Iliamna Bay View Incorporated
- RAD - Rasmuson Inc.
- KAN - Katik Native Corp.
- KEK - Kenai Native Association Inc.
- KCT - Kenai Heritage Land Trust
- KKB - Kodiak Island Borough
- KNI - City of Kenai
- KNG - Koniag Native Corp.
- KPR - Kodiak Peninsula Borough
- LSTC - Larsen Bay Tribal Council
- LEE - Leelanau Inc. (Private Island)
- Larsen Bay Tribal Council
- MNTL - Mental Health Trust Lands
- NNA - Natives Native Association Inc.
- NOK - Natives of Kodiak
- NPS - Aniakchak National Monument
- NPS - Katmai National Park and Preserve
- NPS - Kenai Fjords National Park
- NPS - Lake Clark National Park and Preserve
- NPS - Little Camp National Park and Preserve
- NPS - National Historic Site
- OLH - Old Harbor Native Corp.
- OLZ - Ozuk Native Corporation
- PER - Perryville, Chugach Native Corp.
- PGC - Port Graham Corp.
- Private
- SAL - Salamatoff Native Association Inc.
- SEL - Selkirk Native Association Inc.
- SLEI - City of Seldovia
- SOL - City of Solovki
- TAT - Tatishchev Corporation
- TCP - The Copper River Fund
- TNC - The Nature Conservancy
- TRN - Tundra Native Corporation
- UA - University of Alaska
- UOR - Ugnak
- USDC - United States Coast Guard
- USFS - Ugnak National Forest
- UYK - Uyak Inc.
- VLD - Vail - City of Vail

**Great Land Trust
EVOS Habitat Prioritization
May 2018**

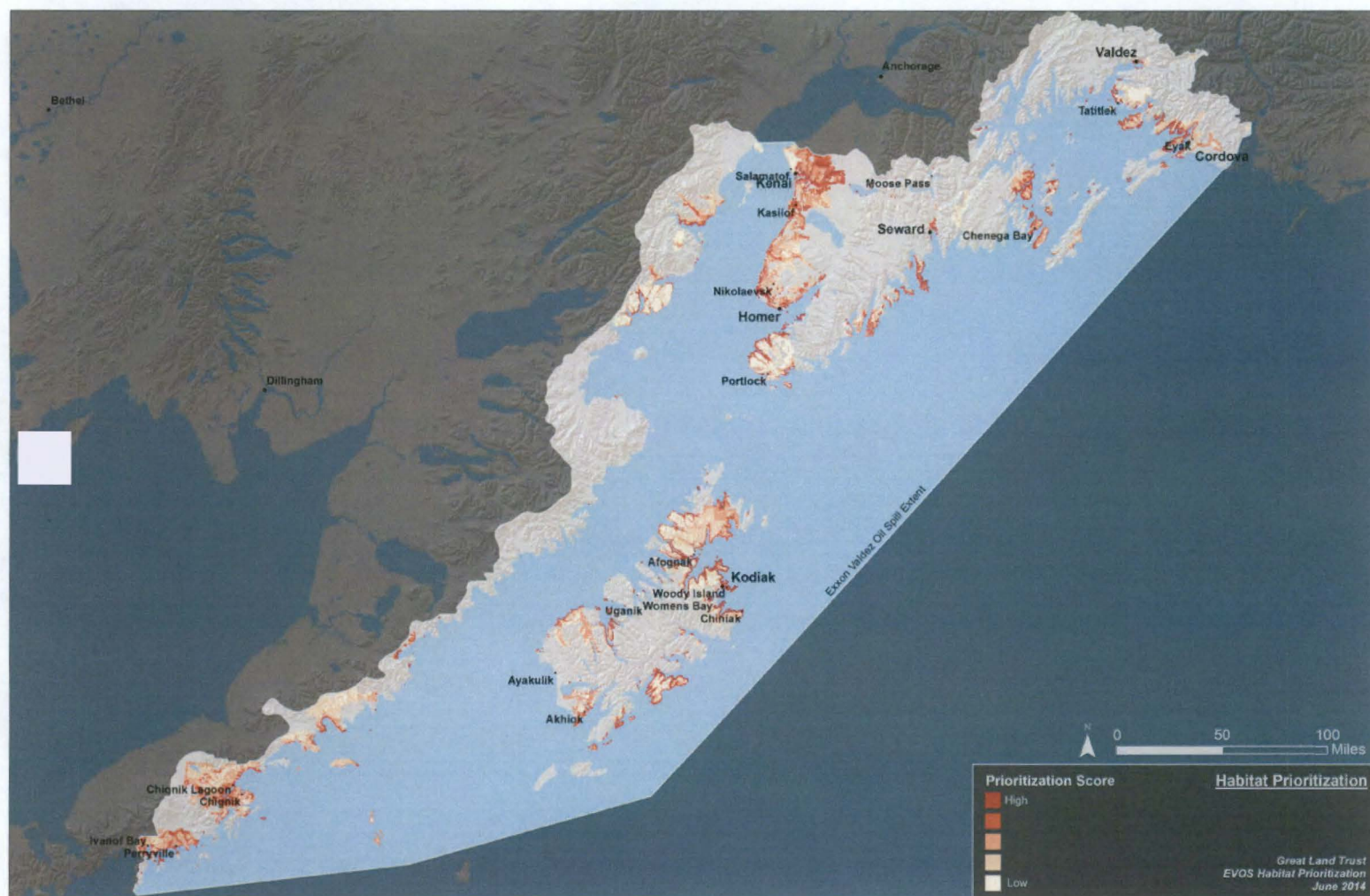
Great Land Trust
EVOS Habitat Prioritization
May 2014

Prioritization Results for Kodiak



0 12.5 25 50 Miles

Projected Coordinate System:
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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
INVESTMENT POLICIES
(Adopted November __, 2014)

4.9.14 DRAFT

1. **Joint Trust Funds.** In 1991, the State of Alaska and the United States received approximately \$900,000,000 in joint trust funds, as settlement of natural resource damage claims stemming from the 1989 *Exxon Valdez* oil spill (EVOS). The Memorandum of Agreement and Consent Decree (MOA) entered into by the State of Alaska and the United States in Civil Action No. A91-081, governs the use of the natural resource damages, paid by Exxon. The State and Federal Governments act as co-trustees in the collection and joint use of all natural resource damage recoveries for the benefit of natural resources injured, lost or destroyed as a result of EVOS. The terms of the settlement are contained in the Agreements and Consent Decrees entered into by the State of Alaska and Exxon Corporation in Civil Action No. A91-083, and United States of America and Exxon Corporation in Civil Action No. A91-082. The United States Congress in Public Law (PL) 102-229 recognized the MOA and Consent Decree. Alaska State Legislature recognized the MOA and Consent Decree in AS 37.14.400. The *Exxon Valdez* Oil Spill Trustee Council (Council) has the responsibility for the general management of these joint trust funds.
2. **Investment Fund.** Initially, the joint trust funds were invested in the Court Registry (CRIS). However, in 1999 Congress enacted PL 106-113. *Attached.* This law allowed the joint trust funds to be deposited in the United States Department of the Interior's Natural Resource Damage Assessment and Restoration Fund and/or accounts outside the United States Treasury. The law requires that the funds are invested only in income-producing obligations and other instruments or securities that have been determined unanimously by the Council to have a high degree of reliability and security. In addition, the law requires the funds to be managed and allocated consistent with the Resolution adopted by the Council on March 1, 1999 establishing a Restoration Reserve. *Attached.* Under the terms of PL 106-113 and after an extensive review process by a group of Alaskan and national investment experts, the Council chose the Alaska Department of Revenue, Division of Treasury (ADOR) to manage and invest the funds on behalf of the Council. The joint trust funds are invested in the ADOR EVOS Investment Fund (Fund). As specified in the March 1, 1999 Council Resolution concerning the Restoration Reserve, the Fund is divided into three sub-accounts: Research, Habitat and Koniag.
3. **Council Responsibilities.** The statutory responsibility of the Council is to invest Fund monies in income-producing obligations and other instruments or securities that have a high degree of reliability and security. Although it is a matter of debate whether the Fund is a true trust or simply a misnomer for public money restricted to a particular use, the statutory responsibilities of the Council in the management of the Fund may be considered through analogy to some aspects of the Restatement (Third) of Trusts. When investing trust property, the trustee has a duty to conform to the terms of the trust, and to conform to applicable law in the absence of provisions in the trust. In the absence of contrary law or trust provisions it imposes the standard of the "prudent investor" which

"... requires the exercise of reasonable care, skill, and caution, and is to be applied to investments not in isolation but in the context of the trust portfolio and as a part of an overall investment strategy, which should incorporate risk and return objectives reasonably suitable to the trust." Restatement (Third) of Trusts, §277

To support the Council's duties, the purpose of this policy is to provide general guidelines for the proper management of the Council's investment decisions. The Council shall establish policy, set direction, and provide oversight and stewardship for the prudent investment and management of the Fund. In doing so, the Council will follow a procedurally prudent process when investing the Fund assets; prepare written investment policies; choose an appropriate asset allocation strategy with regard to the appropriate and intended use of the Fund, control investment expenses, monitor the activities of all investment managers and investment consultants, and avoid conflicts of interest and use "prudent experts" to make investment decisions

- 3 **Standard of Prudence.** The standard of the "prudent investor" has been interpreted as approving a portfolio theory of investments but does not impose a duty to maximize income. Indeed, the standard for typical trusts gives primary emphasis to preservation of the trust estate, while receiving a *reasonable* amount of income without taking undue risks. Only where all else is equal should the trustee choose the investment that produces the greater return. With regard to the Fund, which does not require preservation of the Fund, the trust must be invested in such a way that the purpose of the trust is served. It is therefore imperative that investment policies and asset allocation strategies adopted by the Council reflect the underlying purposes and intent of the Fund

Prudence is based on the conduct of the Council in managing the assets, and is evaluated by the process through which risk is managed, assets are allocated, custodians and managers are chosen, and results are supervised and monitored. A standard of prudence places the emphasis on responsibilities related to the investment portfolio and its purpose, rather than on investment performance. The Council is not an investment manager or investment specialist and is not responsible for the ultimate investment results. Although it is not possible to guarantee investment success, following the process outlined herein will significantly improve the odds of structuring an investment portfolio which will stand up to public scrutiny and will serve the Fund's purposes.

- 4 **Indemnification.** State law, found at AS 37.10.071(e), provides that the State shall indemnify fiduciaries or an officer or employee of the State against liability, under AS 37.10.071(d), for breach of a statutory duty in exercising investment, custodial, or depository powers or duties to the extent that the alleged act or omission was performed in good faith and was prudent under the applicable standard of prudence. However, actions which do not fall within the area of good faith and prudent practices are not statutorily entitled to indemnification. Indemnification language consistent with AS 37.10.071(e), as well as the desire of State trustees to hold retained investment managers and other retained fiduciaries to high standards, are included in contract language with such retained consultants.
5. **Trustee Council Activities.** In establishing policy, setting direction and providing oversight and stewardship for the prudent investment and management of the Fund, the Council will adopt an appropriate asset allocation strategy; maintain one or more consultants, bank custodians, external investment managers, and legal counsel who may include the Alaska Department of Law and the United States Department of Justice, control investment and administrative expenses and incur only those costs that are reasonable in amount and appropriate to the investment responsibilities of the co-trusteeship, make financial and investment policies and performance available to the public; avoid conflicts of interest, and conform to the fundamental fiduciary duties of loyalty and impartiality.
6. **Executive Director/Council Staff Activities.** The Executive Director of the Council shall engage experts and contract for investment services, as the Council deems appropriate. This may involve entering into 'reimbursable services agreements' with State and/or Federal agencies (e.g., the Alaska Department of Revenue and/or the United States Department of the Interior) for personnel

services costs and associated contractual costs. In addition, to support the Council's management of the Fund, the Executive Director/Council staff will: make recommendations concerning policies, investment strategies, and procedures in consultation with the Investment Working Group (IWG, see below), advise the Council regarding the selection of custodians, an investment consultant, and investment managers in consultation with the IWG, account for and report on the investment activity of all funds under the investment responsibility of the Council; and advise the Council on the evaluation of investment policies and performance of the portfolios in consultation with the IWG.

- 7 ***Investment Working Group Membership.*** The Council has broad authority to engage experts and to delegate its investment responsibilities, as it deems appropriate. The Council, when formulating investment policies, will review the recommendations from the Executive Director. The Executive Director will consult with the IWG and such other consultants as the Council may retain from time to time. The IWG consists of one state and one federal Council member or designee, as determined by the Council, and appropriate state and federal officials and at least two investment experts, who are selected by the Executive Director. At least two members of the IWG must have experience and expertise in financial management and the management of institutional investment portfolios.
- 8 ***Investment Working Group Activities.*** The IWG may engage in a variety of activities to serve the Executive Director and Council, including: reviewing investment policies, strategies and procedures, making recommendations to the Executive Director concerning policies, investment strategies and procedures; providing advice as requested by the Executive Director, which may include the selection of custodians, an investment consultant, and investment managers, brief the Council at the Executive Director's request and/or at the request of a member of the IWG, act as "prudent expert" on behalf of the Executive Director, develop and recommend investment policies and strategies to the Executive Director, develop and recommend internal control systems and procedures to the Executive Director to ensure all investment assets are safeguarded; recommend to the Executive Director information systems adequate to fulfill the accounting, monitoring, investing, cash management and other information needs of the Council; and advise the Executive Director on the evaluation of investment policies and performance of the portfolios.
- 9 ***Investment Consultants.*** The Council selects investment consultants to provide advice on specific investment classes, including debt and equity securities, alternative investments, and other areas where focused attention is needed. Investment consultants do not accept discretionary decision-making authority on behalf of Council. Investment consultants function in a research, evaluation, education and due diligence capacity for Council and are fiduciarily responsible for the quality of the service delivered. Their activities may include: recommending strategic procedures and processes, identifying problems, issues and opportunities and making recommendations, upon the request of the Council, preparing an asset allocation study together with alternatives, assisting with manager structure, selection, monitoring and evaluation, if the manager is a third-party, monitoring and evaluating the overall performance of the portfolio, carrying out special projects at the request of Council, and providing continuing education to the Council and staff, as appropriate.
- 10 ***Investment Managers.*** The Council selects investment managers to carry out the "prudent expert" role of the Council; to develop a portfolio strategy within the specific mandate and asset size determined by the Council, to manage, purchase and sell assets for the portfolio, and to act as a fiduciary for assets under its management.
- 11 ***Delegation of Authority.*** The Council, through the appropriate state and/or federal agencies, may contract for investment, custodial or depository services on a discretionary or non-discretionary basis to the State and Federal governments and their employees, or to independent investment

management firms, banks, financial institutions or trust companies by designation through appointments, contracts or letters of authority.

- 12 ***Code of Ethics and Conflicts of Interest*** The State trustees and employees of the Trustee Council Office are subject to the Alaska Executive Branch Ethics Act (AS 39.52) In general, the State law provides that high moral and ethical standards are essential for the conduct of free government and that a Code of Ethics for the guidance of public officers will discourage those officers from acting upon personal or financial interests in the performance of their public responsibilities, and will improve standards for public service and promote and strengthen faith and confidence in public officers

The State Code of Ethics provides that any effort to benefit a personal or financial interest through official action is a violation. The Code details specific prohibitions pertaining to the abuse of official position, acceptance of gifts, improper use of disclosure of information and improper influence. By law, the State trustees are subject to conflict of interest disclosure requirements of AS 39.50 which includes the delivery of annual reports on financial and business interests to the Alaska Public Officers Commission.

All federal government employees are subject to the standards of conduct provided by the Ethics in Government Act of 1978, Public Law 95-521, as amended, including the Ethics Reform Action of 1989, Public Law 101-194. The statutory prohibitions are found in Title 18 of the United States Code, Sections 201 through 209, which include representational activities, conflict of interest, and dual compensation Standards of conduct for all government employees are also delineated by Executive Order 12674, as amended by Executive Order 12731. The federal standards of conduct are further delineated in the regulations of the Federal Register, and include acceptance of gifts from outside sources, gifts between employees, gifts from foreign sources; acceptance of travel and related expenses; outside work, honoraria, outside activities, political activity; lobbying, procurement; misuse of government time, equipment, and information, nepotism; negotiating for non-federal employment; post employment; disclosure of financial interests; and penalties. The Department of the Interior, Commerce and Agriculture have additional ethics standards and requirements for all of their employees, including annual training and financial disclosure statements for specific persons, which include members of the Trustee Council

13. ***General Investment Objective*** The general investment objective for the Fund is to equal or exceed target returns over time while limiting total risk to that which is appropriate to the investment goals and time horizon
14. ***Individual Account Objectives.*** The objectives of the individual accounts may shift with unanimous Council action Such action would supersede these policies and require their update As of the date of the adoption of this policy, the account objectives for the Fund's sub-accounts are as follows:
- a. **Research Sub-Account** As forecast in the annually-updated Trustee Council Long Term Spending Scenario, liquidity and future income to support administrative expenses, projects and long-term programs The expenditures in this area as noted in the Scenario, if continued to be supported by the Council, are somewhat predictable over the future term and thus there is advance notice of the general amount of liquidity required for funding released on an annual cycle in approximately mid-September and a potential investment horizon ending in 2032.
 - b. **Habitat Sub-Account** income for on-going habitat restoration purposes, including the acquisition of lands or conservation easements Future land purchases are subject to ongoing

negotiations and the timeline of their corresponding investments cannot be determined until such negotiations are concluded. There is typically at least a six-month period of notice of a need for liquidity and may occur at any time during the year. The investment horizon for these funds will likely not exceed 2032.

~~c. **Koniag Sub Account:** The Council and Koniag, Inc. have entered into a long term agreement allowing for pre-determined annual payments to Koniag in October and the potential sale of certain properties to the Council in October of any year from 2012–2022 for the balance in this sub-account. The Council is currently investing these funds with the objective of achieving a real, after-inflation return of 5%. Thus, this account requires that a known amount be liquidated in October of each year through 2022 so long as Koniag opts not to exercise its option to sell.~~

15. **Annual Asset Allocation by Council.** The Council recognizes that strategic asset allocation is the single most important policy decision affecting portfolio return and risk. At least annually, the Council will evaluate its current strategic asset allocation policies. The current policies will be compared with potential alternative policies on a consistent basis. This evaluation may include recommendations by the Executive Director based upon the IWG, comparisons with alternative policies; the status of the Fund; actual historic and future expected performance, risk and return; time horizons, and Council funding priorities.

The specific status of the Joint Trust Fund, including funding status, earnings assumptions, liquidity requirements, and expected growth may be considered. The Council's investment consultant may use a "mean variance" optimization approach to evaluate the current and alternative policies. The specific inputs to the modeling process may be defined and contrasted with actual historic results. The implications for expected return and risk may be considered over multiple time horizons. The development of optimized asset allocations may include estimates of risk (standard deviation of returns for each asset class), the modeled return for each asset class, and the correlations of each asset class with other asset classes. The strategic analysis may include those asset classes for which the Council believes reasonable inputs are available. Asset subsets where meaningful historic data are not available may not be considered as a part of the strategic asset allocation analysis. Such subsets or categories, however, may be included as part of an appropriate broad asset category.

16. **Review of Investment Manager Performance.** The Council may review its investment management, in consultation with the Executive Director, IWG, Council staff, and investment consultants. If the Council determines a new investment manager is necessary, a rigorous, objective due diligence process will be utilized in the selection of any investment managers retained by the Council. Such review may include an analysis by an investment consultant of the Council's choosing and recommendations by the Executive Director and IWG.
17. **Securities Lending.** The Council may enter into a securities lending arrangement with an agent(s) when the Council concludes that such an arrangement would benefit the Fund. Securities lending services may be provided by the Council's bank custodian or an independent service provider. Securities lending programs result in the agent undertaking a direct or indirect asset management function. The Council will use the same skill and due diligence in the evaluation and selection of such agent(s) as utilized in the selection of money managers.
18. **Rebalancing Guidelines.** The Council may periodically instruct staff to shift and/or limit staff's authority to shift assets within asset classes and/or among asset classes. Unless restricted by Council action, the Executive Director or an appropriate designee shall have discretion to move

assets among investment managers and asset categories provided that the actual asset allocation is within the variability bands of the Council's strategic asset allocation policy.

Attachments

Public Law 106-113

Resolution 99-03-01 Regarding Restoration Reserve and Long-Term Restoration Needs

App. C., Section 350, Public Law No. 106-113

Sec. 350. Investment of *Exxon Valdez* Oil Spill Court Recovery in High Yield Investments and in Marine Research. (1) Notwithstanding any other provision of law and subject to the provisions of paragraphs (5) and (7), upon the joint motion of the United States and the State of Alaska and the issuance of an appropriate order by the United States District Court for the District of Alaska, the joint trust funds, or any portion thereof, including any interest accrued thereon, previously received or to be received by the United States and the State of Alaska pursuant to the Agreement and Consent Decree issued in *United States v. Exxon Corporation, et al.* (No. A91-082 CIV) and *State of Alaska v. Exxon Corporation, et al.* (No. A91-083 CIV) (hereafter referred to as the "Consent Decree"), may be deposited in-- (A) the Natural Resource Damage Assessment and Restoration Fund (hereafter referred to as the "Fund") established in title I of the Department of the Interior and Related Agencies Appropriations Act, 1992 (Public Law 102-154; 43 U.S.C. 1474b); (B) accounts outside the United States Treasury (hereafter referred to as "outside accounts"); or (C) both. Any funds deposited in an outside account may be invested only in income-producing obligations and other instruments or securities that have been determined unanimously by the Federal and State natural resource trustees for the Exxon Valdez oil spill ("trustees") to have a high degree of reliability and security. (2) Joint trust funds deposited in the Fund or an outside account that have been approved unanimously by the Trustees for expenditure by or through a State or Federal agency shall be transferred promptly from the Fund or the outside account to the State of Alaska or United States upon the joint request of the governments. (3) The transfer of joint trust funds outside the Court Registry shall not affect the supervisory jurisdiction of the district court under the Consent Decree or the Memorandum of Agreement and Consent Decree in *United States v. State of Alaska* (No. A91-081-CIV) over all expenditures of the joint trust funds. (4) Nothing herein shall affect the requirement of section 207 of the dire emergency supplemental appropriations and transfers for relief from the effects of natural disasters, for other urgent needs, and for the incremental cost of "Operation Desert Shield/Desert Storm" Act of 1992 (Public Law 102-229; 42 U.S.C. 1474b note) that amounts received by the United States and designated by the trustees for the expenditure by or through a Federal agency must be deposited into the Fund. (5) All remaining settlement funds are eligible for the investment authority granted under this section so long as they are managed and allocated consistent with the Resolution of the Trustees adopted March 1, 1999, concerning the

Restoration Reserve, as follows: (A) \$55 million of the funds remaining on October 1, 2002, and the associated earnings thereafter shall be managed and allocated for habitat protection programs including small parcel habitat acquisitions. Such sums shall be reduced by-- (i) the amount of any payments made after the date of enactment of this Act from the Joint Trust Funds pursuant to an agreement between the Trustee Council and Koniag, Inc., which includes those lands which are presently subject to the Koniag Non-Development Easement, including, but not limited to, the continuation or modification of such Easement; and (ii) payments in excess of \$6.32 million for any habitat acquisition or protection from the joint trust funds after the date of enactment of this Act and prior to October 1, 2002, other than payments for which the Council is currently obligated through purchase agreements with the Kodiak Island Borough, Afognak Joint Venture and the Eyak Corporation. (B) All other funds remaining on October 1, 2002, and the associated earnings shall be used to fund a program, consisting of-- (i) marine research, including applied fisheries research; (ii) monitoring; and (iii) restoration, other than habitat acquisition, which may include community and economic restoration projects and facilities (including projects proposed by the communities of the EVOS Region or the fishing industry), consistent with the Consent Decree. (6) The Federal trustees and the State trustees, to the extent authorized by State law, are authorized to issue grants as needed to implement this program. (7) The authority provided in this section shall expire on September 30, 2002, unless by September 30, 2001, the Trustees have submitted to the Congress a report recommending a structure the Trustees believe would be most effective and appropriate for the administration and expenditure of remaining funds and interest received. Upon the expiration of the authorities granted in this section all monies in the Fund or outside accounts shall be returned to the Court Registry or other account permitted by law.

RESOLUTION
of the
Exxon Valdez Oil Spill Trustee Council
concerning the
Restoration Reserve and Long-term Restoration Needs

WHEREAS, in November 1994, following an extensive public process, the *Exxon Valdez* Oil Spill Trustee Council ("Trustee Council") adopted the *Restoration Plan* to guide a comprehensive and balanced program to restore resources and services injured by the oil spill,

WHEREAS, since that time the Trustee Council has used the *Restoration Plan* to guide development of the annual work plans as well as the acquisition and protection of large and small habitat parcels important to the long-term recovery of injured resources and services,

WHEREAS, the *Restoration Plan* identified a series of large parcel purchases and the Trustee Council has been successful in obtaining habitat protection agreements with willing-seller landowners to provide protection for approximately 635,000 acres,

WHEREAS, the *Restoration Plan* recognized that complete recovery from the oil spill would not occur for decades and that through long-term observation and, as needed, restoration actions, injured resources and services could be fully restored,

WHEREAS, the *Restoration Plan* specifically recognized establishment of the Restoration Reserve to provide a secure source of funding for restoration into the future beyond the last annual payment from the Exxon Corporation,

WHEREAS, the Trustee Council has sponsored an extensive public involvement process to provide opportunity for comment on possible future uses of the Restoration Reserve including public meetings in communities throughout the spill impact region and also in Anchorage, Fairbanks and Juneau;

WHEREAS, a large volume of public comment regarding the Restoration Reserve has been solicited and received urging a wide range of uses for remaining settlement funds including a strong showing of support for additional habitat protection efforts as well as research and other restoration efforts,

WHEREAS, numerous Native tribal members and other community residents from the spill area have indicated a strong interest in continued support for community-based efforts consistent with those that have been previously funded by the Trustee Council such as subsistence restoration, Traditional Ecological Knowledge, youth area watch, cooperative management, and local stewardship efforts,

WHEREAS, the Public Advisory Group (PAG) has reviewed and discussed long-term restoration needs and use of the Restoration Reserve at considerable length and the views of the PAG members have been communicated to the Trustee Council,

WHEREAS, upon consideration of the restoration mission as provided by the settlement and the *Restoration Plan*, past restoration program efforts and accomplishments, public comments received by the Trustee Council, the views of the Public Advisory Group members, and the most current information regarding the status of recovery of the resources and services injured by the oil spill, the Trustee Council has identified substantial and continuing long-term restoration needs,

WHEREAS, full recovery of many injured resources and services is not yet complete and long-term restoration, conservation and improved management of these resources and services will require a substantial on-going investment to improve our understanding of the biology and marine and coastal ecosystems that support the resources as well as the people of the spill region,

WHEREAS, prudent use of the natural resources of the spill area without unduly impacting their recovery requires increased knowledge of critical ecological information about the northern Gulf of Alaska that can only be provided through a long-term research and monitoring program,

WHEREAS, together with scientific research and monitoring, a continuing commitment to habitat protection and general restoration actions, where appropriate, will help ensure the full recovery of injured resources and services,

WHEREAS, consistent with the *Restoration Plan*, restoration needs identified by the Trustee Council require a long-term comprehensive and balanced approach that includes a complementary commitment to scientific research and monitoring, applied science to inform and improve the management of injured resources and services, continued general restoration activities where appropriate, support for community-based efforts to restore and enhance injured resources and services, and protection for additional key habitats,

WHEREAS, by October 2002, as a result of the past and anticipated future deposits into the Restoration Reserve, it is estimated that the principal and interest in the reserve, together with remaining unobligated settlement funds, will be approximately \$170 million unless, prior to that time, on-going negotiations concerning the Karluk and Sturgeon rivers and adjacent lands or other potential habitat transactions result in habitat acquisition agreements that obligates some of these funds,

WHEREAS, absent such additional acquisition agreements, \$170 million is the total of the funds estimated to be available to support long-term restoration based on projected investment returns allowable through the Court Registry under its existing authority and thus reasonably anticipated as available for restoration purposes by the Trustee Council starting with FY 2003 ("estimated funds remaining on October 1, 2002"), and

WHEREAS, the limits of the existing investment authority of the Trustee Council have resulted in the loss of millions of dollars in potential earnings that would have been available to effectively address restoration needs in the future and support a comprehensive program that maintains its value over time, and it is necessary that the limits on the investment authority for the joint settlement funds be amended by Congress if we are to optimize our potential restoration program,

THEREFORE BE IT RESOLVED, that the Trustee Council has determined that recovery from the *Exxon Valdez* oil spill remains incomplete and there is need for establishing at this time a continuing long-term, comprehensive and balanced restoration program consistent with the *Restoration Plan*,

BE IT FURTHER RESOLVED, that funds in the Restoration Reserve and other remaining unobligated settlement funds available on October 1, 2002 (for expenditure starting in FY 2003) be allocated in the following manner consistent with the "Outline of Action Under Existing Authority" dated 3/1/99 attached to this resolution

- \$55 million of the estimated funds remaining on October 1, 2002 and the associated earnings thereafter will be managed as a long-term funding source with a significant proportion of these funds to be used for small parcel habitat protection and it is recognized that any funding that may be authorized for purchase of lands along or adjacent to the Karluk or Sturgeon rivers or other potential habitat acquisitions would be made from within this allocation, and
- the remaining balance of funds on October 1, 2002 will be managed so that the annual earnings, estimated at approximately 5% per year, will be used to fund annual work plans that include a combination of research, monitoring, and general restoration including those kinds of community-based restoration efforts consistent with efforts that have been previously funded by the Trustee Council, such as subsistence restoration, Traditional Ecological Knowledge, Youth Area Watch, cooperative management, and local stewardship efforts, as well as local community participation in ongoing research efforts,

BE IT FURTHER RESOLVED, that the Restoration Office and the Chief Scientist, under the direction of the Executive Director, shall begin to develop a long-term research and monitoring program for the spill region that will inform and promote the full recovery and restoration, conservation and improved management of spill-area resources, and

BE IT FURTHER RESOLVED, that it is the intent of the Trustee Council that this long-term reserve for research, monitoring and general restoration be designed to ensure the conservation and protection of marine and coastal resources, ecosystems, and habitats in order to aid in the overall recovery of those resources injured by the *Exxon Valdez* oil spill and the long-term health and viability of the spill area marine environment;

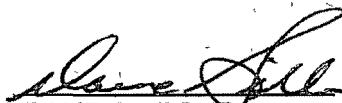
BE IT FURTHER RESOLVED, that in developing a long-term restoration research, monitoring and general restoration program for the spill region, the Executive Director shall solicit the views of the Public Advisory Group, community facilitators, resource management agencies, researchers and other public interests as well as coordinate restoration program efforts with other marine research initiatives including the North Pacific Research Board;

BE IT FURTHER RESOLVED, that the Executive Director shall work with the Alaska Congressional delegation and appropriate State and federal agencies to obtain the necessary investment authority to increase the earnings on remaining settlement funds, so that the Trustee Council will be able to conduct an effective restoration program that maintains its value over time, and

BE IT FURTHER RESOLVED, that in developing long-term implementation options for consideration by the Trustee Council, the Executive Director shall


- investigate possible establishment of new or modified governance structures to implement long-term restoration efforts,
- explore alternative methods to ensure meaningful public participation in restoration decisions, and
- report back to the Trustee Council by September 1, 1999 regarding these efforts

Adopted this 1st day of March, 1999, in Anchorage, Alaska


DAVE GIBBONS
Trustee Representative
Alaska Region
USDA Forest Service


Date

3/15/99


for BRUCE M. BOTELHO
Attorney General
State of Alaska

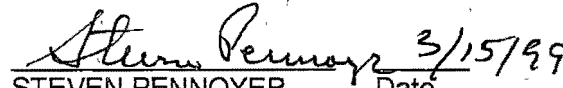
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3/9/99


MARILYN HEIMAN
Special Assistant to the
Secretary for Alaska
U S Department of the Interior

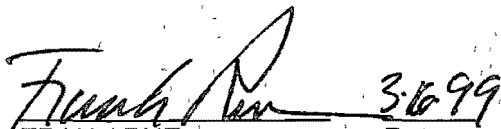
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3/11/99


STEVEN PENNOYER
Director, Alaska Region
National Marine Fisheries Service

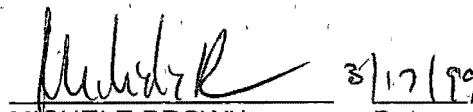
Date

3/15/99


FRANK RUE
Commissioner
Alaska Department of
Fish and Game

Date

3-6-99


MICHELE BROWN
Commissioner
Alaska Department of
Environmental Conservation

Date

3/17/99

OUTLINE OF ACTION UNDER EXISTING AUTHORITY

Assumptions:

- Use of the Restoration Reserve funds will commence with FY 2003 (October 2002)
- The Trustee Council will allocate an additional \$36M to the Restoration Reserve (annual \$12M payments in FY 2000, 2001 and 2002)
- Additional restoration program authorizations from March 1999 to October 2002, exclusive of contractual land payments and other habitat commitments, will amount to not more than \$35M
- Remaining unobligated balance of restoration funds in October 2002 will be \$170M including funds that may be needed for a possible Koniag Karluk-Sturgeon acquisition
- Trustee Council receives no new investment authority and continues to invest settlement funds in treasury instruments that yield approximately 5%

Elements of a Long-Term Restoration Program:

- Consistent with the *Restoration Plan*, the core elements of a long-term restoration effort would focus on research, monitoring, and general restoration including community-based restoration, and habitat protection.
- Starting in FY 2003, and except as otherwise approved by the Council for habitat protection, restoration efforts would be funded from the earnings of remaining funds
- Earnings estimated at approximately 5% per year from treasury investments (nominal yield)
- The approximately \$170M in restoration funds remaining on October 1, 2002 will be allocated into two parts:
 - ✓ \$55M for habitat protection, including a possible Koniag Karluk-Sturgeon acquisition and any other additional acquisitions approved by the Council prior to that date
 - ✓ remainder (estimated at \$115M plus, under the current assumptions) for research-monitoring, general restoration and community-based projects (e.g., subsistence, TEK, stewardship)
- Absent changes in the investment authority and consequent increased yield on investments, there would be no inflation-proofing with the consequent loss of purchase power over time in proportion to prevailing inflation rates (in order to support an annual restoration program of effective size)
- Cost of program management apportioned according to relative expense (public involvement, agency participation, peer review, habitat acquisition support, administration, etc.) to either the habitat or research, monitoring and general restoration funds as appropriate

Habitat Protection.

- \$55M of remaining funds on October 1, 2002 (FY 2003) for Habitat Protection would include any amounts needed to complete the Koniag Karluk-Sturgeon acquisition or other potential habitat protection purchases

- \$55M of the estimated funds remaining on October 1, 2002 and the associated earnings thereafter will be managed as a long-term funding source with a significant proportion of these funds to be used for small parcel habitat protection and it is recognized that any funding that may be authorized for purchase of lands along or adjacent to the Karluk or Sturgeon rivers or other potential habitat acquisitions would be made from within this allocation
- After December 2001 (the end of the current easement), the \$16.5M previously allocated for the Koniag Karluk-Sturgeon acquisition, if not obligated at that point, would be available for other habitat protection efforts
- Issues that require further consideration:
 - ✓ priority, criteria and decision-making process for specific parcel selection
 - ✓ possible role of non-governmental organization to implement program after October 2002
 - ✓ extent of public involvement in future program

Research, Monitoring and General Restoration.

- Remaining balance of funds (estimated at \$115M plus under the current assumptions) for Restoration Research, Monitoring, and General Restoration would be managed so that earnings-only would be used to support annual work plans starting with FY 2003
- Annual earnings currently estimated at 5% per year if within the U S Treasury (nominal yield, no inflation proofing)
- Annual work plan would support continuing restoration and enhancement of oil spill injured resources including long-term research-monitoring, development of improved management tools, synthesis of results, general restoration activities, and community-based restoration projects such as subsistence restoration, Traditional Ecological Knowledge, Youth Area Watch, cooperative management, and local stewardship efforts as well as local community participation in on-going research efforts
- Issues that require further consideration.
 - ✓ whether changes in the annual work plan process are appropriate in light of reduced scale
 - ✓ means and extent of scientific peer review
 - ✓ means and extent of public involvement in process
 - ✓ how and to what extent communities and tribes of the spill area would be involved in long-term research, monitoring, stewardship and cooperative management efforts
 - ✓ whether a new organization or governance structure is needed

3/1/99

Executive Director WORKING DRAFT Recommendation

SUMMARY OF PAST AND ESTIMATED FUTURE USES OF SETTLEMENT
(in \$millions)

REIMBURSEMENTS FOR SPILL RESPONSE	213.1				
RESTORATION MANAGEMENT	FFY 92-99	FFY 00-02	FFY 03+		
Science Management, Public Involvement & Administration	24.7	5.1	TBD	(a)	
RESTORATION IMPLEMENTATION	FFY 92-99	FFY 00-02	Remaining Funds	(b)	TOTAL
Research, Monitoring, General Restoration	145.0	25.4	115.0		39.8%
Habitat Protection	372.1	4.5	55.0		60.2%
	517.1	29.9	170.0		100.0%

(a) To date, Restoration Office science management, public involvement and administration has cost approximately 5% of restoration program expenditures overall. Beyond FFY 02, science management, public involvement and administration costs will be allocated in proportion to program area costs.

(b) Estimate of remaining funds includes Restoration Reserve (with \$12 million per year to be placed into the reserve FFY 00 - FFY 02), interest accrued, the \$16.5 million committed to a Koniag purchase through 2001 plus additional funds currently unallocated.

Exxon Valdez Oil Spill Trustee Council

Procedures for the Preparation and Distribution of Reports

Adopted: October 28, 2013

Draft 10.9.14

Comment [CH1]: See Summary of Changes on Page 13.

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Exxon Valdez Oil Spill Trustee Council

Procedures for the Preparation and Distribution of Reports

I. INTRODUCTION

These *Procedures for the Preparation and Distribution of Reports* provide instructions regarding the preparation, peer review, printing and distribution of reports for projects funded by the Exxon Valdez Oil Spill Trustee Council.

A. Additional Guidelines

These *Procedures for the Preparation and Distribution of Reports* update and supersede earlier versions of this document and should be read together with the report writing guidelines published by the *Journal of Wildlife Management*:

Block, W.M., F.R. Thompson, D. Hanseder, A. Cox, and A. Knipps.
2011. Journal of Wildlife Management Guidelines.
<http://joomla.wildlife.org/documents/JWMguidelines2011.pdf>

To the extent that there are any inconsistencies between these *Procedures for the Preparation and Distribution of Reports* and the guidance provided by Block, et al. (2011), the instructions provided in these *Procedures* shall be followed.

B. Project Numbers

For purposes of identification each project is assigned a unique number.

1. **Final Report Number** – The project number that appears on the final report will be the number of the final year of funding.
2. **Projects Funded from FY 2010 to Present** – These projects have eight-digit project numbers:
 - a) the first two digits designate the current funding year,
 - b) the second two digits represent the year the initial funding was authorized by the Trustee Council, and
 - c) the last four digits are the unique project identifier.
3. **Trustee Council-Funded Programs** – Programs are given an eight-digit number that follows the same numbering scheme as described above. Each project within a program receives the program's eight-digit number with the addition of a letter designation beginning at "A".
4. **Amendments** – Projects that submit amendments receive a designation of "Am" followed by the date of the amendment.
5. **Examples** –
 - a) **Projects** –

10071234 indicates the project received funding in 2010.

10071234 indicates the project was initially funded by the Council in 2007.

10071234 can be cross-referenced with projects from other funding years such as 071234, 081234, etc.

10071234-Am12.12.10 indicates an amendment to project 10071234, adoption date December 12, 2010.

b) Programs –

12120114 indicates the Long-Term Monitoring Program.

12120114-A indicates a project within the Long-Term Monitoring Program.

12120114-A-Am12.12.12 indicates an amendment adoption date December 12, 2012 to a project within the Long-Term Monitoring Program.

- 6. Previous Numbering Conventions –** Over time the Trustee Council's project numbering system has evolved to meet the changing needs of the Restoration Program. For information on previous project numbering conventions, see Attachment A, *How to Find EVOSTC Reports*.

II. FINAL REPORTS

A. Preparation of Final Reports

- 1. Content Format –** Authors shall follow the format set out below to prepare final reports. Reports shall meet normal scientific standards of completeness and detail that permit an independent scientific reader to evaluate the reliability and validity of the methods, data and analyses.
 - a) Report Cover –** The report shall have a front and back cover of quality cover stock. To ensure consistent appearance, the preferred color is goldenrod, but yellow is acceptable. An example of a final report cover is provided. *See*, Attachment B. A final report cover shall:
 - (1)** identify the report, using the appropriate series title, for example:
 - (a)** *Exxon Valdez Oil Spill Restoration Project Final Report,*
 - (b)** *Exxon Valdez Long-Term Monitoring Program ("GulfWatch Alaska"),*

- (c) *Exxon Valdez* Long-Term Herring Research and Monitoring Program,
 - (d) *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report, (Funding for these projects has been completed.),
 - (e) *Exxon Valdez* Oil Spill Gulf Ecosystem Monitoring and Research Project Final Report, (Funding for these projects has been completed.) or
 - (f) other series that may be designated by the Trustee Council.
- (2) provide report title;
 - (3) include the project identification number;
 - (4) identify the author(s) with appropriate affiliation(s);
 - (5) include the date (month and year) of publication; and
 - (6) include the following non-discrimination statement toward the bottom of the page on the inside front cover:

“The *Exxon Valdez* Oil Spill Trustee Council administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The Council administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972. If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information, please write to: EVOS Trustee Council, 4210 University Drive, Anchorage, Alaska 99508-4626, or dfg.evos.restoration@alaska.gov; or O.E.O. U.S. Department of the Interior, Washington D.C. 20240.”

- b) **Title Page** – The Title Page of the report shall immediately follow the report cover page on white bond paper and be identical in content and format to the front of the report cover page. *See*, Attachment B.
- c) **Study History, Abstract, Key Words, Project Data and Citation** – Following the Title Page, the report shall include, on

not more than two pages: a study history; an abstract; key words; summary of data gathered during the project; and a recommended citation for the final report. *See*, Attachment B.

- (1) *Study History* – A brief study history shall include reference to any prior project numbers; changes in the title of the project or report over time; annual project reports or other reports which contributed to the final report; and citation of publications that have preceded publication of the final reports. If the final report includes information regarding related projects or synthesis, the study history should reference this information.
- (2) *Abstract* – An abstract, with a maximum length of 200 words, shall enable readers to quickly identify the basic content of the report, determine its relevance to their interests and thus decide whether to read the document in its entirety. If the final consists of several chapters or manuscripts, the abstract shall summarize the entire reports. *See*, Use of Manuscripts for Final Report Writing, II (A) (3). Do not use abbreviations or acronyms in the abstract. This abstract is submitted by the Alaska Resources Library and Information Services (ARLIS) to the National Technical Information Service.
- (3) *Key Words* – A short list of key words (up to 12 in alphabetical order) shall be provided. Include words from the title and others that identify:
 - (a) common and scientific names of principal organisms, if any;
 - (b) geographic area or region;
 - (c) phenomena and entities studied (e.g., behavior, reproduction);
 - (d) methods (only if the report describes a new or improved method); and
 - (e) other words not covered above but useful for indexing.
- (4) *Project Data* – A summary of the data collected during the project shall be provided in order to preserve the opportunity for other researchers and the public to access this data in the future. The summary shall:

- (a) describe the data;
 - (b) indicate the format of the available data collections;
 - (c) identify the archive in which the data have been stored or the custodian of the data (including contact name, organization, address, phone/fax, e-mail, and web address where data may be acquired); and
 - (d) indicate any access limitations placed on the data. Limiting access requires written pre-approval by the Trustee Council Office.
- (5) **Citation** – A recommended citation for the final report shall be provided. See, Attachment A for the correct citation format.
- d) **Table of Contents**, including Lists of Tables, Figures and Appendices.
- e) **Executive Summary** – The executive summary shall:
 - (1) consolidate principal points of the report in one place and provide enough detail for the reader to understand the significance of the report without having to read it in full;
 - (2) be written to that it can be understood independently of the report (i.e., it must not refer to figures, tables or references contained elsewhere and all acronyms, uncommon symbols, and abbreviations must be spelled out;
 - (3) not exceed four singled-spaced pages;
 - (4) concisely state the objectives, methods, results and conclusions of the report and reference any related projects or synthesis; and
 - (5) be organized in the same manner as the report it summarizes.
- f) **Introduction** – The introduction shall reference any related projects or synthesis, where appropriate, and:
 - (1) clearly present the nature and scope of the problem investigated, including the general area in which field activities were conducted; and

- (2) review pertinent literature, state the methods(s) of investigation and briefly state principal results.
 - g) **Objectives** – The statement of objectives shall be the same as the objectives identified in the approved proposal. If the objectives have changed, describe what has changed and why.
 - h) **Methods** – The discussion of methods shall include a clear description of the study area. To the extent the methodology differs from that described in the proposal, explain the reason for the deviation.
 - i) **Results** – The presentation of results shall provide an objective and clear presentation of the data collected.
 - j) **Discussion** – The discussion section shall:
 - (1) interpret the study results and explore the meaning and significance of the findings, including alternative interpretations of the results;
 - (2) discuss whether the study hypotheses are upheld or disproven;
 - (3) note where there are unanswered questions; and
 - (4) where appropriate, cite relevant findings from other *Exxon Valdez* oil spill restoration studies, including published literature.
 - k) **Conclusions** – This shall be a brief, clear statement of the conclusions that are apparent from the discussion. Major unanswered questions shall be identified.
 - l) **Acknowledgments**
 - m) **Literature Cited**
 - n) **Other References** – If there is a need to list references other than the literature cited (e.g., personal communications), these references shall be identified in this section.
2. **Technical Format** – The following guidelines shall help provide consistent formatting:
- a) **Word Processing Conventions**
 - (1) *Standard Settings*

Line

Line spacing:	single
Hyphenation:	off (i.e., do not hyphenate at right margin)
Justification:	left (i.e., do not right-justify margins)
Margins:	1 inch at top, bottom 1 inch at left, right
Tabs:	every 0.5 inch
Widow Protection:	yes

Page

Page numbers:

Position:	bottom center
No numbers:	cover, OEO/ADA page (inside of front cover), title page
Roman numerals:	lower case (i, ii, iii, iv, v, vi, etc.); front matter, includes Study History, Table of Contents, List of Tables, List of Figures, and List of Appendices.
Arabic numbers:	(1, 2, 3, etc.); narrative, beginning with the Executive Summary.

Header:	none
---------	------

Font

Times:	12 point
--------	----------

Note: If Times is not available, some other serif font shall be used (e.g., Palatino, Bookman or New Century Schoolbook).

- (2) *Literature Citations* – In the Literature Cited section, start each citation with a hanging indent as shown below:

Byrd, G.V., D. Gibson, and D.L. Johnson. 1974. The birds of Adak Island, Alaska. *Condor* 76:288-300.

b) Other Conventions

- (1) *Italics* – Use italics, rather than underlining, for Latin names and for *Exxon Valdez*.

- (2) *Paper* – Use good quality white paper 8.5 x 11” (215 x 280mm) or metric size A4.
- (3) *Terms for oil spill* – When referring to the oil spill that occurred because the *Exxon Valdez* ran aground, use *Exxon Valdez* oil spill. After the first mention of the *Exxon Valdez* oil spill, refer to it simply as the spill.
- (4) *Acronyms* – Clearly define any acronyms. Avoid the use of acronyms completely in the Abstract and Executive Summary.
- (5) *Terms* – Use the terms “damages” and “injury” as defined by CERCLA regulations (*See*, 43 CFR 11.14):
 - (a) “*Damages*” means the amount of money sought by the natural resource trustee as compensation for injury, destruction or loss of natural resources.
 - (b) “*Injury*” means a measurable adverse change, either long or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil. Injury encompasses the phrases “destruction” and “loss”.
 - (c) “*Destruction*” means the total and irreversible loss of a natural resource.
 - (d) “*Loss*” means a measurable adverse reduction of a chemical or physical quality or viability of a natural resource.

3. **Use of Manuscripts for Final Report Writing** – The Trustee Council encourages principal investigators to publish the results of their work in peer-reviewed journals. With the written approval of the Trustee Council’s Science Coordinator, and on a project-by-project basis, manuscripts or journal articles may be used to satisfy project final report writing requirements. When a manuscript is used to fulfill the report requirements, it is strongly preferred that the manuscript be in draft form before it has been submitted to a journal to allow duplication without violation of copyright or publication rights. *See*, Copyright and Publication Rights, II (A) (3) (d).

- a) **Authority to Use Manuscripts** – Principal investigators shall contact the Science Coordinator to request written approval to use a manuscript(s) as the body of a final report.

- b) **Objectives** – Because final reports are the primary and permanent record of how Trustee Council funds have been spent and what has been accomplished with those funds, it is necessary that these reports address all of the objectives for which the Trustee Council has provided funds.
- (1) If all of the project's objectives are completely described within one or more manuscripts being prepared for publication, a copy of the manuscript(s) may be submitted as the entire body of the report. *See*, Standard Format requirements, II (A) (3) (c).
 - (2) If a project's objectives are not all described completely within one or more manuscripts, the manuscript(s) may serve as a portion of the report. For example, if only two of five objectives are addressed in a manuscript, the report shall include – in addition to the manuscript – information on the three objectives not covered in the manuscript. The two objectives covered by the manuscript shall be referenced in the report as appropriate (e.g., in the Methods and Results sections) and substantially integrated into the Discussion section, where there shall be an overall discussion of the project. In such cases, the combination of the manuscript and additional report material shall present an organized, integrated and complete account of the project activities and results.
- c) **Standard Format** – Every report, regardless of whether it is in the standard format or includes manuscripts, shall adhere to the formatting prescribed for the Report Cover, Title Page, Study History, Abstract, Key Words, Project Data and Citation. *See*, Content Format, II (A) (1).
- d) **Copyright and Publication Rights** – When a manuscript is used to fulfill report writing requirements, it must be in a form that can be duplicated freely and posted on the Trustee Council website. This may require obtaining permission from the publisher. When appropriate:
- (1) The author shall provide the Trustee Council Office with a copy of the publisher's written permission to duplicate and post the article as part of the report.
 - (2) The statement "This article is reprinted with permission from the publisher." shall precede the journal article(s) in the report.

- e) **Disclaimer Statement** – Investigators seeking to publish the results of Trustee Council-sponsored projects shall include the following statement with all manuscripts:

“The research described in this paper was supported by the *Exxon Valdez* Oil Spill Trustee Council. However, the findings and conclusions presented by the author(s) are their own and do not necessarily reflect the views or position of the Trustee Council.”

- f) **Reprints** – Investigators who publish the results of Trustee Council-sponsored projects shall provide the Trustee Council Office (attention: Science Coordinator) three (3) reprints of any published manuscript. The Trustee Council Office shall provide one (1) of the reprints to ARLIS.

4. Due Date

- a) **Due Dates** – Unless a different date is specified in the approved proposal or contract, draft final reports shall be submitted for peer review in the year following the fiscal year in which project work was completed. For a February 1-January 31 fiscal year, the report is due by March 1.
- b) **Request for Extension** – If the due date cannot be met, the principal investigator shall file an extension request with the Science Coordinator at least 15 days prior to the due date. The request must be in writing and state a reason the report will be late. With approval of the Executive Director, an alternative final report due date may be identified.

B. Review Process: Final Reports

1. **Submission of Draft Final Reports for Peer Review** – Draft final reports are required to undergo the peer review process outlined below. For projects which are not in a Trustee Council-funded Program, the principal investigator shall submit one (1) electronic copy of the draft final report to the Science Coordinator for peer review. The electronic copy shall be submitted as a word processing document (most recent version of Microsoft Word) with any figures and tables embedded.

Science Coordinator phone: (907) 278-8012
EVOS Trustee Council Office fax: (907) 276-7178
4210 University Dr.
Anchorage, AK 99508-4626
E-mail: dfg.evos.projects@alaska.gov

2. **Draft Final Report Peer Review** – Draft final reports shall be scientifically or technically peer reviewed under the direction of the Science Coordinator or, for Trustee Council-funded Programs, the Program Leads.
- a) **Peer Review** – The Science Coordinator or Program Leads, where applicable, may secure the services of a minimum of two qualified reviewers who will provide comments, identify questions, and suggest revisions as appropriate for the report.
- (1) Reviewers will be selected based upon experience, expertise, availability, and objectivity.
 - (2) Reviewers will be screened to avoid conflicts of interest and shall sign a conflict of interest disclosure form before being selected for a peer review.
 - (3) Peer reviews will be confidential. Comments may be submitted in writing to the Science Coordinator or Program Leads.
 - (4) Peer reviewers will be anonymous to the authors of the report and the general public.
- b) **Peer Review Comments** – The Science Coordinator or Program Leads, where applicable, shall consolidate the peer review comments and provide the consolidated comments and any recommendations in writing to the principal investigator(s); Program Leads will also forward the peer review comments and any recommendations to the Science Coordinator.
3. **Revision of Final Report and Re-Submission for Approval**
- a) **Revision** – Within 30 days of receiving peer review comments, principal investigators will revise their draft final reports to address peer review comments, as appropriate.
- b) **Re-Submission** – After revision, principal investigators will submit one (1) electronic copy of the revised final report to the Science Coordinator for acceptance.
- c) **Approval** – Final reports will not be distributed from the Trustee Council Office until peer review is complete. Once the final report is accepted,
- (1) the Science Coordinator shall notify the principal investigator in writing and send a copy of the letter of acceptance to the project manager, ARLIS, and Program Leads, where applicable;

- (2) the Science Coordinator will also forward the report to ARLIS for format review.

4. **Final Report Review of Format** – Once the content of the report is accepted by the Science Coordinator, the Science Coordinator shall forward the final report to ARLIS for review of format.

- a) **Format Review** – After approving the final report, the Science Coordinator will send an electronic copy of the final report as a Word file to ARLIS (attention: Carrie Holba at reference@arlis.org) for format review.
- b) **Revisions** – Within 15 days of receipt of the final report, ARLIS staff shall review it for compliance with the report format standards, remove all references to “draft”, and make any revision needed for format compliance.
- c) **Approval** – After revising and approval the format, ARLIS staff will e-mail a copy of the report to the principal investigator with written confirmation that the format has been approved and the report is ready to be printed. The principal investigator shall not reproduce the report until format approval is confirmed in writing by ARLIS. ARLIS staff will also e-mail final copies of the report and format approval letter to the Science Coordinator, project manager and Program Leads, where applicable.

C. **Printing and Distribution Process**

- 1. **Reproduction and Number of Copies** – Within 60 days of the date of the written confirmation from ARLIS indicating approval of the final report format, the principal investigator shall produce and send to ARLIS six (6) two-sided, bound copies of the report.
- 2. **Binding** – Copies of final reports shall be bound using Perfect binding. Smaller reports may be bound with black tape or comb binding. Very small reports may be bound with staples in three places along the spine, but only when other binding options are not available. Questions regarding binding shall be directed to ARLIS (attention: Carrie Holba at reference@arlis.org).
- 3. **Distribution of Final Reports** – ARLIS shall send two bound copies of final reports to the Trustee Council Office for the Science Coordinator and the Trustee Council’s Official Record. Final reports, in locked PDF format, shall be posted on the Trustee Council website at www.evostc.state.ak.us. ARLIS will provide URLs for final reports to the Alaska State Library and National Technical Information Service (NTIS) to fulfill state and federal depository requirements. *See, Attachment A, How to Find EVOSTC Reports.*

III. ANNUAL PROJECT REPORTS AND ANNUAL PROGRAM STATUS

SUMMARY

A. Projects not in a Trustee Council-Funded Program: Annual Project Report Requirement

1. **Annual Project Report** – The principal investigator for a project is responsible for the submission to the Trustee Council of an annual project report.
2. **Multi-Year Projects** – An annual project report shall be submitted each year until the project is completed, at which time a final report shall be submitted.
3. **Due Date** – Unless a different date is specified in the approved proposal or contract, annual project reports shall be submitted for each fiscal year for which a project received funding. For a February 1-January 31 fiscal year, annual reports are due by March 1.

B. Trustee Council-Funded Programs and Projects within a Program: Annual Project Reports and Annual Program Status Summary Requirement

1. **Annual Project Reports** – The principal investigator for a project within a Trustee Council-funded program is responsible for production of an annual project report for submission to the Trustee Council by the Program Leads, as required in III (B) (3) (b).
2. **Multi-Year Projects** – An annual project report shall be submitted each year until the project is completed, at which time a final report shall be submitted.
3. **Program Lead Submission** – Program Leads are responsible for:
 - a) collecting, reviewing and collating the annual project reports from the individual projects within the program, including any agency projects;
 - b) submission to the Trustee Council of:
 - (1) the annual project reports from the individual projects within the program; and
 - (2) an annual program status summary.
4. **Due Date** – Unless a different due date is specified in the approved proposal or contract, annual project reports and annual program status

Comment [CH2]: Changes include:

- 1) Removed mid-year project report and mid-year program status summary as only an annual project report and annual program status summary are due (March 1).
- 2) Reduced reporting items so as not to be redundant with the original proposal.
- 3) Required submission of project reports to be as individual electronic documents.
- 4) Language additions to clarify reporting and budget information sought.
- 5) Separated requirements for programs and projects.
- 6) Added forms for reporting, including a budget form.
- 7) Quarterly reports were stopped in 2010 as they were not informative.
- 8) "Team Lead" was changed to "Program Lead".

summaries shall be submitted for each fiscal year for which a project within a Trustee Council-funded program received funding. For a February 1-January 31 fiscal year, the annual project report and annual program status summary are due by March 1.

- C. **Annual Project Report Content** – Content of annual project reports, including for projects within a Trustee Council-funded program, shall include the information listed below and be submitted on the appropriate form. *See*, Attachment C for the report form and Attachment E or F for the budget form, as appropriate.

1. **Project Number**
2. **Project Title**
3. **Principal Investigator's Name(s)** – Include the Principal Investigator's name and the names of any researchers submitting the report.
4. **Time Period Covered by the Report**– The annual reports will report on the prior fiscal year's work.
5. **Date of Report**– Specify month and year.
6. **Project Website** – If applicable.
7. **Summary of Work Performed** – This section shall include a brief summary of work performed during the reporting period, including any results available to date, scientific findings, and their relationship to the original project objectives. Discuss the evolving status of the working hypothesis in light of the research findings obtained to date. Any deviation from the original project objectives, procedures or statistical methods, study area, or schedule shall be included. Any known problems or unusual developments, and any other significant information pertinent to the project, shall also be described. Detail or highlight any noteworthy finding relating to the project. Budget issues can be detailed in the Budget section (11), below.
8. **Coordination and Collaboration** – For this section, list:
 - a) **Within a Trustee Council-Funded Program** – Provide a list and clearly describe the functional and operational relationships with other Trustee Council-funded program projects that occurred during the reporting period. This includes what form the coordination took (shared field sites or researchers, research platforms, sample collections, data management, equipment purchases, etc.).
 - b) **With other Trustee Council-Funded Projects** – Indicate how the project relates to, complements or includes collaborative efforts

with other projects funded by the Trustee Council that are not part of a Trustee Council-funded program.

- c) With Trustee or Management Agencies – Please discuss if there are any areas which have supported EVOSTC trust or other agency work or which have received EVOSTC trust or other agency feedback or direction, including the contact name(s) of the agency staff. Please include specific information as to how the subject area assisted the EVOSTC trust or other agency work. If the project required or included collaboration with other agencies, organizations or scientists to accomplish this work, such arrangements should be fully explained and the names of agency or organization representatives involved in the project should be provided. If the project is in conflict with another project, note this and explain why.

9. **Information and Data Transfer** – This section shall list, for the reporting period:

- a) publications produced during the reporting period;
- b) conference and workshop presentations and attendance during the reporting period;
- c) data and/or information products developed during the reporting period, if applicable, and
- d) data sets and associated metadata that have been uploaded to the program's data portal.

10. **Response to EVOSTC Review, Recommendations and Comments** – Describe how the project has addressed recommendations from EVOSTC reviews, including from the EVOSTC Trustees, Science Panel and Staff.

11. **Budget** – For this section,

- a) for a project not within a Trustee Council-funded program, complete the column 'Actual Cumulative' on the Summary Page of the Project Budget Proposal and Reporting Form, submitted with the original proposal, form available on the EVOSTC website and at Attachment E;
- b) for a project within a Trustee Council-funded program, complete the column 'Actual Cumulative' on the Summary Page of the Program Project Budget Proposal and Reporting Form, submitted with the original proposal, form available on the EVOSTC website and at Attachment F; and

- c) on the Project Annual Report Form, form at Attachment D, if any line item exceeds a 10% deviation from the originally proposed amount, provide detail regarding the reason for the deviation.

D. Annual Program Status Summary Content – Content of the annual program status summary shall include the information listed below and be submitted on the appropriate form. *See*, Attachments D and F.

1. **Project Number**
2. **Program Title**
3. **Program Lead Name(s)** – Include the name of the Program Lead submitting the summary.
4. **Time Period Covered by the Summary** – The annual project reports and annual program status summary will report on the prior fiscal year's work.
5. **Date of Summary** – Specify month and year.
6. **Program website** – If applicable.
7. **Overview of Work Performed during the Reporting Period** – including any results available to date; the overview of work shall include, for the reporting period:
 - a) progress toward hypotheses;
 - b) detail or highlight any noteworthy issues or findings relating to the program and projects within the program;
 - c) this section shall describe efforts undertaken to achieve the community involvement/traditional ecological knowledge (TEK) and resource management application provisions of the proposal, if applicable;
 - d) any known problems or unusual developments; and
 - e) any other significant information pertinent to the program.
8. **Coordination and Collaboration** – For this section, provide:
 - a) **Within a Trustee Council-Funded Program** – Provide a list and clearly describe the functional and operational relationships with other Trustee Council-funded program projects. This includes what form the coordination took (shared field sites or

researchers, research platforms, sample collection, data management, equipment purchases, etc.).

- b) **With other Trustee Council-Funded Projects** – Indicate how the program relates to, complements or includes collaborative efforts with other projects funded by the Trustee Council that are not part of a Trustee Council-funded program.
 - c) **With Trustee or Management Agencies** – Please discuss if there are any areas which supported EVOSTC trust or other agency work or which have received EVOSTC trust or other agency feedback or direction, including the contact name(s) of agency staff. Please include specific information as to how the subject area assisted EVOSTC trust or other agency work. If parts of the program required or included collaboration with other agencies, organizations or scientists to accomplish the work, such arrangements should be fully explained and the names of agency or organization representatives involved should be provided. If the program is in conflict with another program or project, note this and explain why.
9. **Information and Data Transfer** – For this section, list, for the reporting period:
- a) publications produced;
 - b) conference and workshop presentations and attendance;
 - c) data and/or information products developed, if applicable; and
 - d) data sets and associated metadata that have been uploaded to the program's data portal.
10. **Response to EVOSTC Review, Recommendations and Comments** – Describe how the program has addressed recommendations from EVOSTC reviews, including those from the EVOSTC Trustees, Science Panel and Staff.
11. **Budget** – For this section, complete the column 'Actual Cumulative' on the Summary Page of the Program Project Budget Proposal and Reporting Form, submitted with the original proposal, form available at the EVOSTC website and at Attachment F.

E. Submission and Review Process: Annual Project Reports and Annual Program Status Summary

1. **Submission for Review of Annual Project Reports and Annual Program Status Summary** – The principal investigator, or Program Lead, as applicable, shall electronically submit each report as a separate

electronic document to the Science Coordinator, care of dfg.evosc.projects@alaska.gov.

- a) **Subject Line** – The subject line of the e-mail transmitting the annual project report or summary must include the project number and the words “annual project report” (e.g., “035620 Annual Project Report”), or “annual program status summary” (e.g., “035620 Annual Program Status Summary”).
- b) **Electronic Format** – An electronic report or summary shall be submitted as a Microsoft Word document with all figures and tables embedded.

- 2. **Review Process: Annual Project Reports and Annual Program Status Summaries** – Annual project reports and annual program status summaries shall be reviewed by the Science Coordinator. These reports and summaries may also be reviewed by qualified outside peer reviewers and the Trustee Council’s Science Panel. The review process may be used to determine whether continued funding of the project is warranted and to guide further work on the project. Any written comments on a report or summary shall be provided to the principal investigator or Program Leads, as applicable, and kept on file at the Trustee Council Office, available upon request.

- F. **Distribution of Annual Project Reports and Annual Program Status Summaries** – Annual project reports and annual program status summaries shall be kept on file as public documents at the Trustee Council Office, available upon request. These reports and summaries shall also be posted on the Trustee Council’s website at www.evostc.state.ak.us.

ATTACHMENT A

How to Find EVOSTC Project Reports

A list of [EVOS Trustee Council \(EVOSTC\) final reports and annual \(prior to 2002\) reports](http://www.evostc.state.ak.us/Publications/bibliographies.cfm) is maintained at the EVOSTC website at www.evostc.state.ak.us/Publications/bibliographies.cfm. EVOSTC reports are available as listed below. Reports are also submitted to the Alaska State Library and the National Technical Information Service in fulfillment of state and federal depository requirements.

Final project reports are available full-text at:

- [EVOSTC website](#). The Trustee Council's database of restoration projects is searchable via Project Search by project number, researcher, or project title.
- [ARLIS](#) catalog. The catalog is searchable by title, project number, principal investigator, additional authors, series title, subject heading, and key words. A searchable notes field in the catalog record describes the report and provides additional access points. From the catalog record, a link takes the researcher to the full-text report. Paper copies of reports are available for check out at ARLIS and are loaned worldwide through interlibrary loan.
- [National Technical Information Service \(NTIS\)](#). Copies of most final reports can be purchased in electronic, paper or microfiche formats through NTIS at (703) 487-4650 or www.ntis.gov.

Annual project reports are available full-text at:

- [EVOSTC website](#). The Trustee Council's database of restoration projects is searchable via Project Search by project number, researcher, or project title.
- [ARLIS](#) catalog. Annual reports for projects funded prior to 2002 are available full-text through the ARLIS catalog. Paper copies are available for check out and are loaned worldwide through interlibrary loan.

Program Status Summaries are available full-text at the [EVOSTC website](#). The Trustee Council's database of restoration projects is searchable via Project Search by project number, researcher, or project title.

Report Numbers: When locating a report, it may be helpful to understand how the reports are numbered. For purposes of identification each project is assigned a unique number. The project number that appears on the final report is the number of the final year of funding. Over time the Trustee Council's project numbering system has evolved to meet the changing needs of the Restoration Program.

- **Natural Resource Damage Assessment (NRDA) Studies:** Funded in 1989 to 1992, these studies were designated by alpha-numeric study numbers (e.g., MM6 for "Marine Mammal Study 6" or FS2 for "Fish/Shellfish Study 2"). These reports were published in the series, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Annual Report*, or *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report*.

- **Restoration Projects:** In 1993 the Trustee Council shifted the program emphasis from damage assessment to restoration, and projects were given five-digit numbers. The first two digits indicate the funding year and the last three digits identify the individual project. Initially, continuing projects received a new project number each year, but in 1995 the Trustee Council began using the unique project identifier, and the same last three digits were used to identify an individual project each year it was funded. Large projects were divided into several smaller subprojects, and numbers and/or letters were added to the project number to identify these subprojects (e.g., 95320S or 95139C1). Some NRDA studies focused on restoration activities were continued as restoration projects in 1993. From 1993 to 2001 restoration project annual reports were published in the series, *Exxon Valdez Oil Spill Restoration Project Annual Report*. Beginning in 2002, annual reports were no longer published, but are available in electronic format at the [EVOSTC website](#). Restoration project final reports are published in the series, *Exxon Valdez Oil Spill Restoration Project Final Report*.
- **Exxon Valdez Oil Spill Gulf Ecosystem Monitoring and Research Program (GEM):** These projects were funded between FY 2002 and FY 2006. GEM projects funded in 2002 have five-digit numbers as described above. GEM projects funded after FY 2002 have six-digit project numbers (e.g., 030647). The first two digits identify the fiscal year in which the project was funded, and the last four digits are the unique project identifier. Some early GEM report numbers are preceded by a "G", but this practice was discontinued. These final reports were published in the series, *Exxon Valdez Oil Spill Gulf Ecosystem Monitoring and Research Project Final Report*.
- **Restoration Projects funded in 2003 to 2009:** These projects have six-digit project numbers. The first two digits represent the fiscal year of funding and the last four digits are the unique project identifier. These final reports were published in the series, *Exxon Valdez Oil Spill Restoration Project Final Report*.
- **Projects funded from FY 2010 to present:** The projects have eight-digit project numbers: the first two digits designate the current funding year, the second two digits represent the year the initial funding was authorized by the Trustee Council, and the last four digits are the unique project identifier. Trustee Council-funded programs are given an eight-digit number that follows the same numbering scheme. Each project within a program receives the program's eight-digit number with the addition of a letter designation beginning at "A". Projects that submit amendments receive a designation of "Am" followed by the date of the amendment. These project final reports are published in the series, *Exxon Valdez Oil Spill Restoration Project Final Report*. Reports from projects within a program are published in the series, *Exxon Valdez Long-Term Monitoring Program ("GulfWatch Alaska")* or *Exxon Valdez Long-Term Herring Research and Monitoring Program*.

For assistance in locating EVOSTC final and annual reports, contact ARLIS at:

Alaska Resources Library and Information Services (ARLIS)

Suite 111 Library Building

3211 Providence Drive

Anchorage, AK 99508

(907) 27-ARLIS (272-7547)

reference@arlis.org www.arlis.org

ATTACHMENT B

EVOSTC Final Report Example

Exxon Valdez Oil Spill
Restoration Project Final Report

Responses of River Otters to Oil Contamination:
A Controlled Study of Biological Markers

Restoration Project 99348
Final Report

**NOTE: The Report Cover
must be quality cover stock,
goldenrod in color.**

*This example cover page also
shows how to indicate the authors'
(Ben-David, Bowyer, Duffy)
affiliation when the report was
done at the direction of an agency
(ADF&G) and the agency wants
to be acknowledged.

Merav Ben-David
R. Terry Bowyer
Lawrence K. Duffy

Institute of Arctic Biology
311 Irving Building
University of Alaska Fairbanks
Fairbanks, Alaska 99775

for:

Alaska Department of Fish and Game
Habitat and Restoration Division
333 Raspberry Road
Anchorage, Alaska 99518

September 1999

**NOTE: The statement
below must be printed on
the back of the goldenrod
Report Cover.**

The *Exxon Valdez* Oil Spill Trustee Council administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The Council administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972. If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information, please write to EVOS Trustee Council, 4210 University Dr., Anchorage, Alaska 99508-4626; or O E O U.S. Department of the Interior, Washington, D.C. 20240

Exxon Valdez Oil Spill
Restoration Project Final Report

Responses of River Otters to Oil Contamination
A Controlled Study of Biological Markers

Restoration Project 99348
Final Report

**NOTE: The Title
Page must be on
white bond paper.**

Merav Ben-David
R. Terry Bowyer
Lawrence K. Duffy

Institute of Arctic Biology
311 Irving Building
University of Alaska Fairbanks
Fairbanks, Alaska 99775

for

Alaska Department of Fish and Game
Habitat and Restoration Division
333 Raspberry Road
Anchorage, Alaska 99518

September 1999

Responses of River Otters to Oil Contamination
A Controlled Study of Biological Stress Markers

Restoration Project 99348
Final Report

Study History: Project 99348 originated from the need to better understand the effects of contamination by crude oil on biomarkers in river otters (*Lontra canadensis*). Previous studies demonstrated elevated levels of biomarkers in river otters from oiled areas compared with those from non-oiled areas throughout Prince William Sound, Alaska, shortly following the *Exxon Valdez* oil spill (EVOS). Although the data collected to date strongly indicated a correlation between oil contamination and physiological stress in river otters, this evidence required verification through controlled experiments as identified by the EVOS Trustee Council review process (1997). This 2-year project was conducted at the Alaska SeaLife Center in Seward, Alaska, USA, between April 1998 and March 1999. Additional funding was provided by the Council for completion of 3 manuscripts in FY 2000 for publication in a peer-reviewed journal.

Abstract: In this study, we experimentally determined the effects of oil contamination on river otters. Fifteen wild-caught male river otters were exposed to 2 levels of weathered crude oil (i.e., control, 5 ppm/day/kg body mass, and 50 ppm/day/kg body mass) under controlled conditions in captivity at the Alaska SeaLife Center in Seward, Alaska. Responses of captive river otters to oil ingestion provided mixed results in relation to biomarkers. Although hemoglobin, white blood cells, alkaline phosphates, and possibly interleukin-6 immunoreactive responded in the expected manner, other parameters did not. Aspartate Aminotransferase, Alanine Aminotransferase, haptoglobin did not increase in response to oiling or decrease during rehabilitation. In addition, although expression of P450-1A increased in captive river otters during oiling, several inconsistencies in the data complicated data interpretation. Nonetheless, we were able to establish that reduction in hemoglobin led to increase in energetic costs of terrestrial locomotion, decrease in aerobic dive limit, and potential increase in foraging time due to a decrease in total length of submergence during each foraging bout. We offer a theoretical physiological model to describe interactions between the different biomarkers and advocate the exploration and development of other biomarkers that will be independent of the heme cycle.

Key Words: Aerobic dive limit, Alaska, captivity, CYP1A, crude oil, hemoglobin, immuno-histochemistry, liver enzymes, *Lontra canadensis*, lymphocytes, oxygen consumption, quantitative RT-PCR

Project Data: *Description of data* – data was collected from live animals held in captivity at the Alaska SeaLife Center. Blood and other tissues were sampled and processed in different laboratories. Additional samples are archived at the Institute of Arctic Biology, UAF. *Format* – All data were entered as Excel spreadsheets. *Custodian* – contact Merav Ben-David, Institute of Arctic Biology, 311 Irving Building, University of Alaska Fairbanks, Fairbanks, Alaska 99775

Citation:

Ben-David, M., R.T. Bowyer, and L.K. Duffy. 1999. Responses of river otters to oil contamination: A controlled study of biological stress markers, *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 99348), Alaska Department of Fish and Game, Habitat and Restoration Division, Anchorage, Alaska.

ATTACHMENT C

EVOSTC Annual Project Report Form

Form Rev. 10.3.14

*Please refer to the Reporting Policy for all reporting due dates and requirements.

1. Program Number: *See, Reporting Policy at III (C) (1).*

Text

2. Project Title: *See, Reporting Policy at III (C) (2).*

Text

3. Principal Investigator(s) Names: *See, Reporting Policy at III (C) (3).*

Text

4. Time Period Covered by the Report: *See, Reporting Policy at III (C) (4).*

Text

5. Date of Report: *See, Reporting Policy at III (C) (5).*

Text

6. Project Website (if applicable): *See, Reporting Policy at III (C) (6).*

Text

7. Summary of Work Performed: *See, Reporting Policy at III (C) (7).*

Text

8. Coordination/Collaboration: *See, Reporting Policy at III (C) (8).*

Text

9. Information and Data Transfer: *See, Reporting Policy at III (C) (9).*

Text

10. Response to EVOSTC Review, Recommendations and Comments: *See, Reporting Policy at III (C) (10).*

Text

11. Budget: *See, Reporting Policy at III (C) (11).*

Text



*We appreciate your prompt submission
and thank you for your participation.*

ATTACHMENT D

EVOSTC Annual Program Status Summary Form

Form Rev. 10.3.14

*Please refer to the Reporting Policy for all reporting due dates and requirements.

1. Project Number: *See, Reporting Policy at III (D) (1).*

Text

2. Program Title: *See, Reporting Policy at III (D) (2).*

Text

3. Program Lead Name(s): *See, Reporting Policy at III (D) (3).*

Text

4. Time Period Covered by the Summary: *See, Reporting Policy at III (D) (4).*

Text

5. Date of Summary: *See, Reporting Policy at III (D) (5).*

Text

6. Program Website (if applicable): *See, Reporting Policy at III (D) (6).*

Text

7. Overview of Work Performed during the Reporting Period: *See, Reporting Policy at III (D) (7).*

Text

8. Information and Data Transfer: *See, Reporting Policy at III (D) (8).*

Text

9. Coordination and Collaboration: *See, Reporting Policy at III (D) (9).*

Text

10. Response to EVOSTC Review, Recommendations and Comments: *See, Reporting Policy at III (D) (10).*

Text

11. Budget: *See, Reporting Policy at III (D) (11).*

Text



*We appreciate your prompt submission
and thank you for your participation.*

ATTACHMENT E *EVOSTC Project Budget Proposal and Reporting Form*

Form Rev. 10.3.14

For this Excel document, please see the [Reporting Procedures](#) page at the EVOS Trustee Council website.

ATTACHMENT F *EVOSTC Program Budget Proposal and Reporting Form*

Form Rev. 10.3.14

For this Excel document, please see the [Reporting Procedures](#) page at the EVOS Trustee Council website.

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Prepared October 22, 2014



**Exxon Valdez Oil Spill Trustee
Council**

Investment Presentation
November 2014

Paul Erlendson
Senior Vice President

Presentation Overview

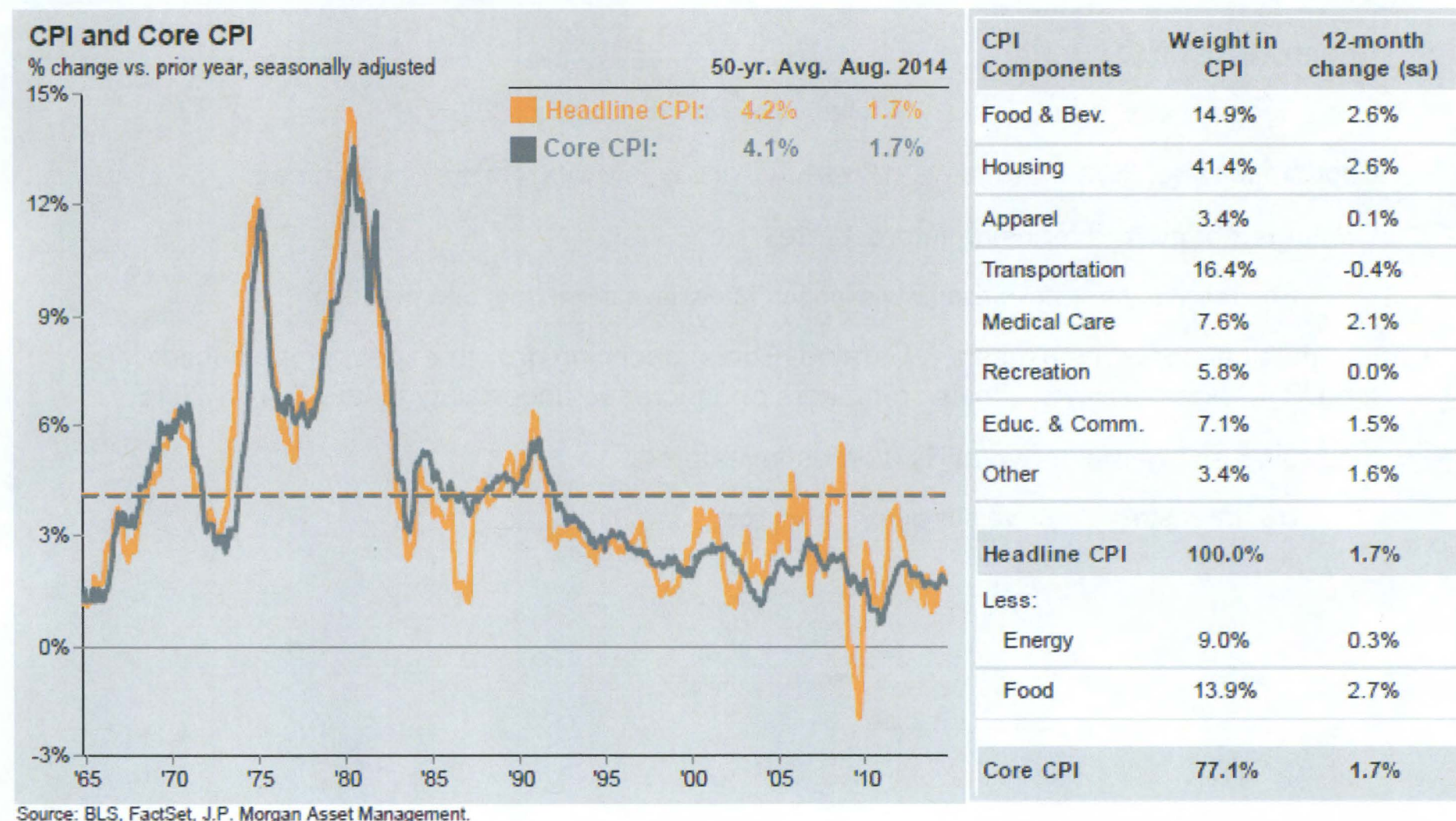
- Market Overview
 - Domestic Equities
 - Fixed Income
 - International Equity
- Historic Performance & Asset Values
 - Cumulative
 - Calendar Year Periods
 - Asset Class Performance
- Capital Market Review
 - Projection Process
 - Existing Policy with 2014 Long-term Projections

Overview

- Choppy economic growth.
 - Negative GDP growth in 1Q2014 followed by robust increase in 2Q.
- Expectations for little or negative growth in Europe; slowing (to +7%) in China.
- Continued concerns for rising interest rates.
 - Shorter term rates have risen while longer; rates have fallen from one year ago.
- Geopolitical concerns (Russia & Ukraine; Ebola; declining growth expectations outside of the US) weigh heavily on decision-makers and increase uncertainty in late 2014 - 2015.
- Increased equity market volatility worries investors.
 - US dollar strengthens versus other currencies.

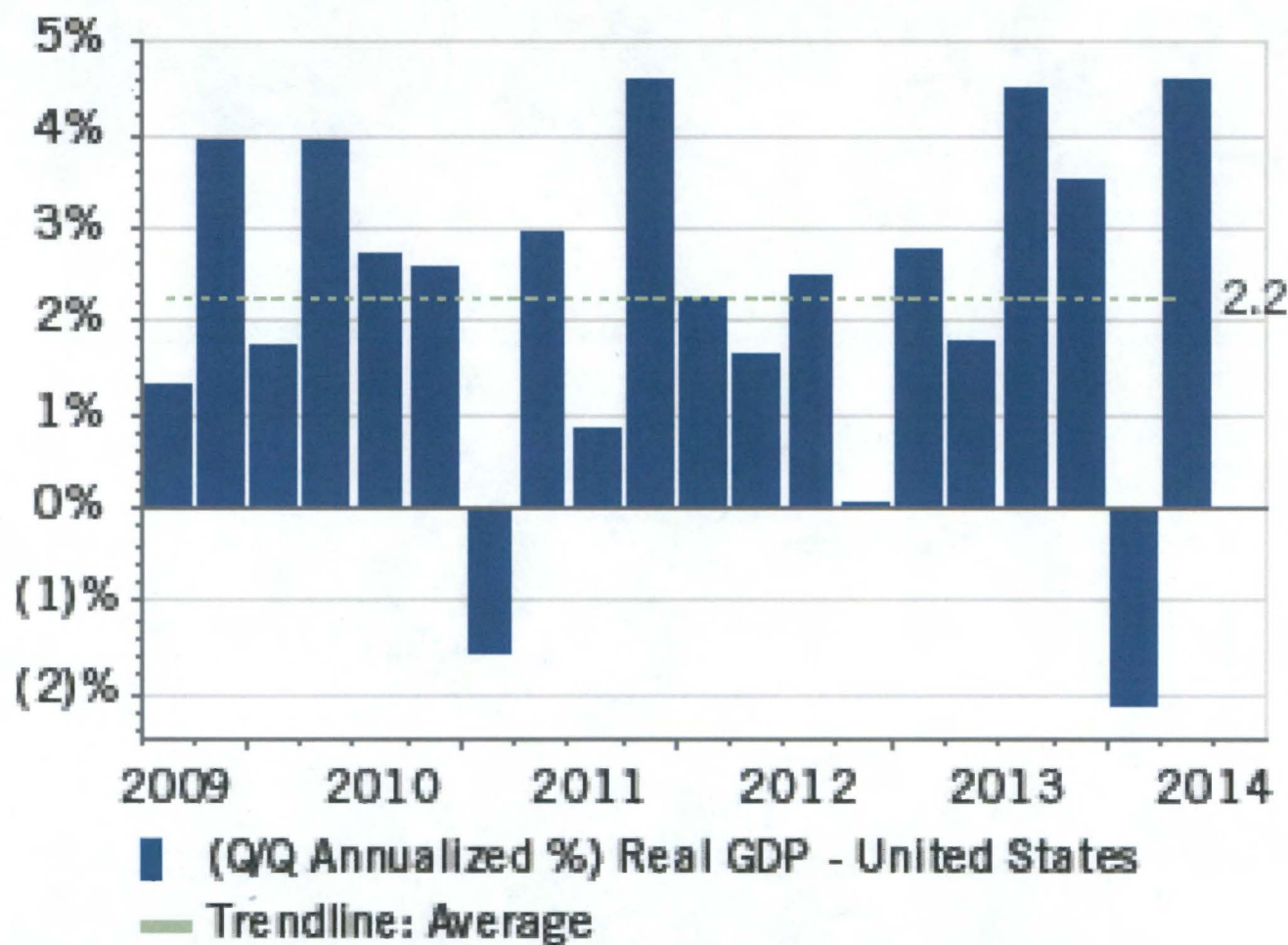
Consumer Price Inflation Remains Muted

Through August, 2014



Real GDP

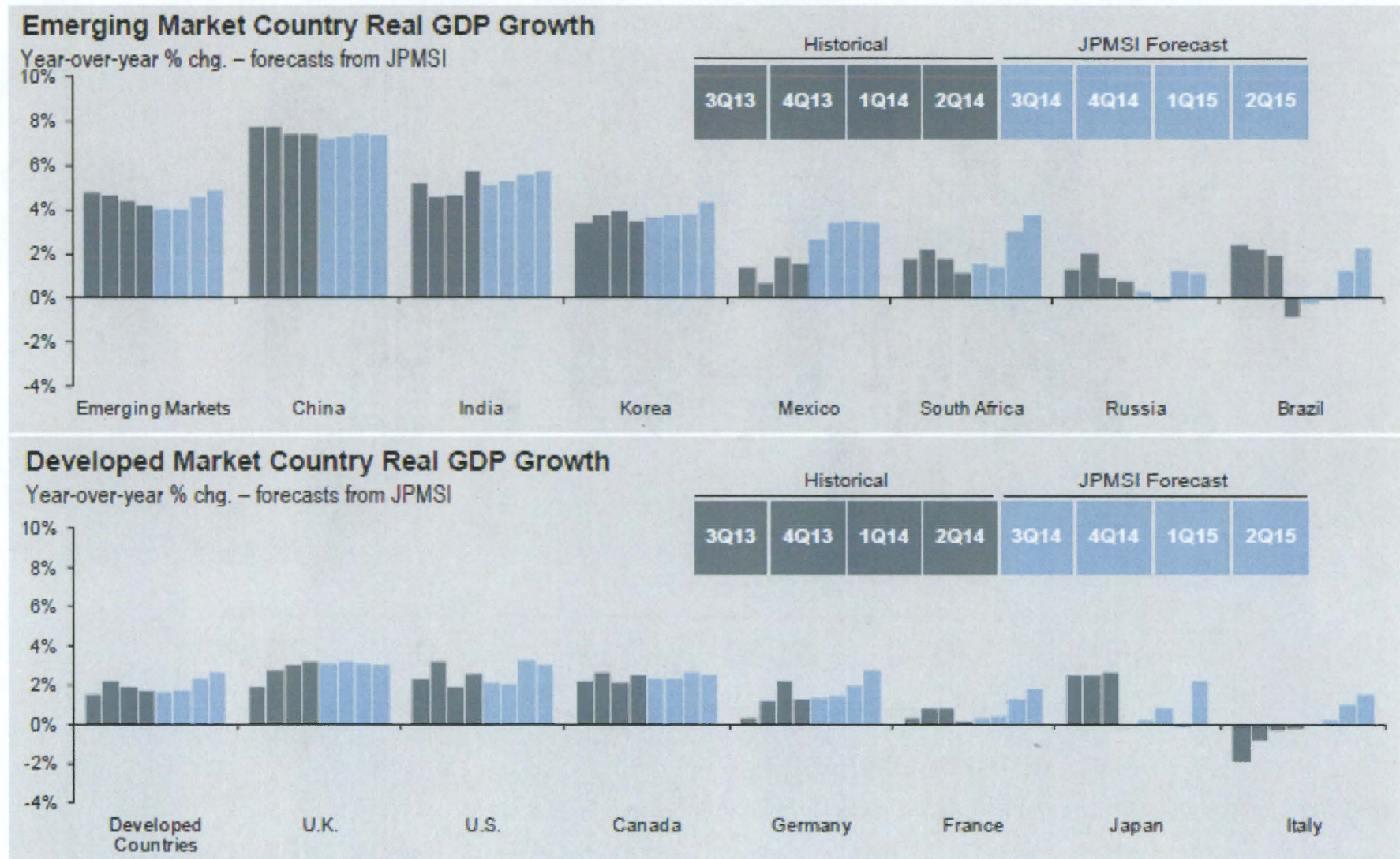
Real GDP growth has average 2.2% p.a. over last five years



Sources: Babson Capital; US Commerce Department's Bureau of Economic Analysis.

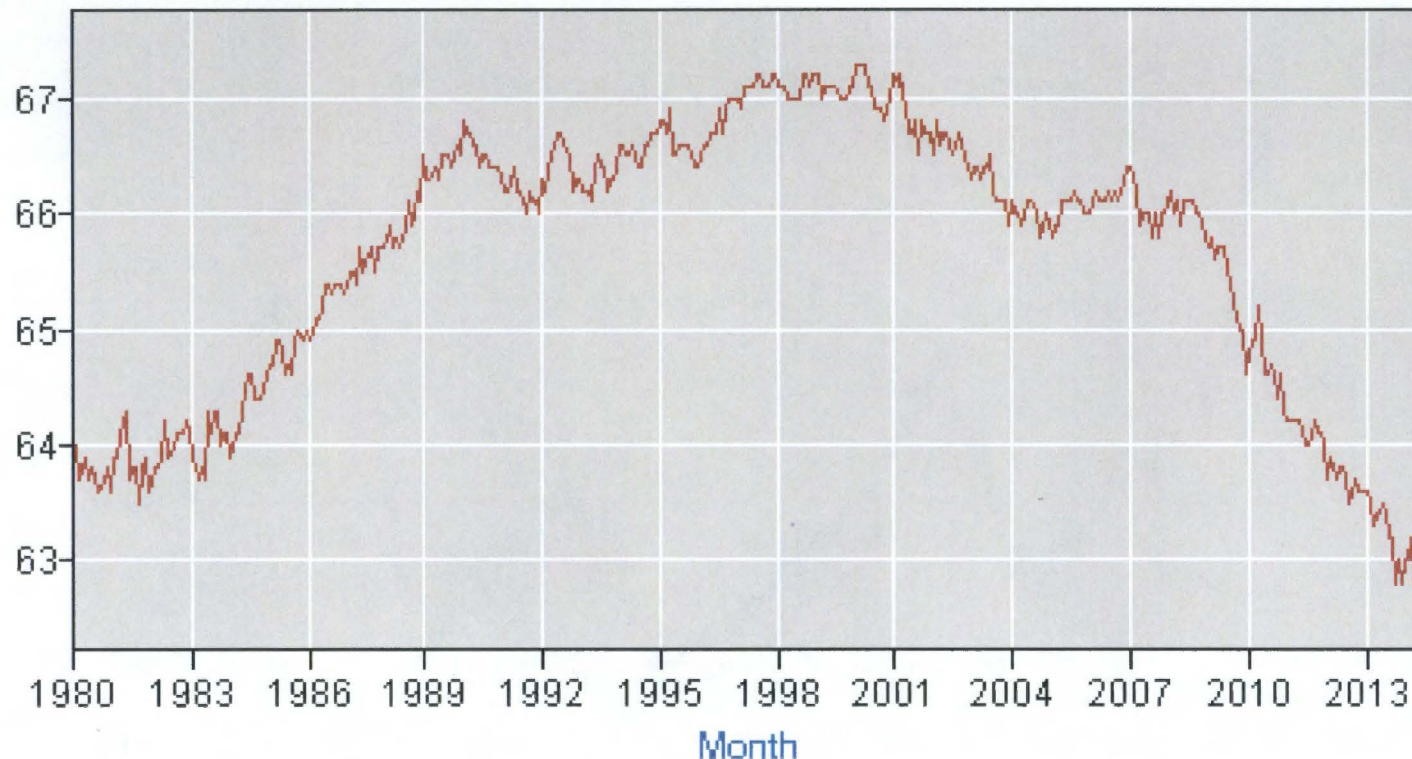
- Real GDP grew by 4.6% in the 2nd quarter of 2014 after dropping by 2.1% in Q1.

Global GDP Growth Expectations Vary Widely



Source: J.P. Morgan Global Economic Research, J.P. Morgan Asset Management.

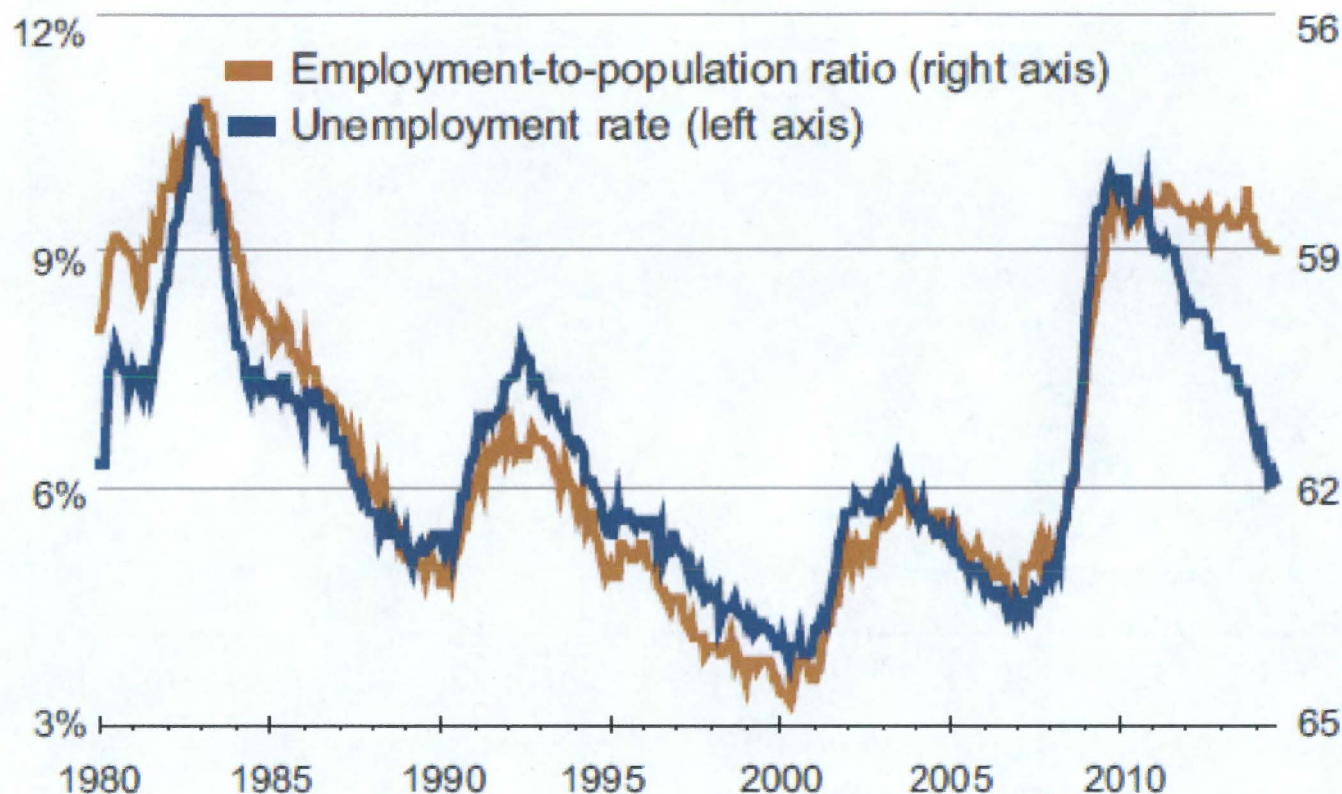
Labor Force Participation Rate



Source: US Department of Labor's Bureau of Labor Statistics.

- The labor force participation rate declined to 62.8% as of August, 2014.
- The participation rate peaked at 67.3% in 2000; it has been trending down since that time.

Unemployment rate vs employment to US population ratio



Sources: ICAP; Bureau of Labor Statistics. Data provided from 1/1980 through 8/2014.

- The labor market strengthened with an addition of 224,000 jobs per month during the 3rd quarter.
- The official US civilian unemployment rate at the end of September 2014 was 5.9%.

Asset Class Performance

As of September 30, 2014




Periodic Table of Investment Returns

2005	2006	2007	2008	2009	2010	2011	2012	2013	3 Qtrs. 2014
Russell Midcap 12.65%	Russell 2000 18.37%	S&P 400 7.98%	S&P 600 -31.07%	Russell Midcap 40.48%	Russell 2000 26.85%	S&P 500 2.11%	S&P 400 17.88%	S&P 600 41.31%	S&P 500 8.34%
S&P 400 12.56%	Russell 2500 16.17%	Russell 1000 5.77%	Russell 2000 -33.79%	S&P 400 37.38%	Russell 2500 26.71%	S&P 1500 1.75%	Russell 2500 17.88%	Russell 2000 38.82%	Russell 1000 7.97%
S&P 1000 10.93%	S&P 500 15.79%	Russell Midcap 5.60%	S&P 1000 -34.67%	Russell 2500 34.39%	S&P 400 26.64%	Russell 1000 1.50%	S&P 1000 17.40%	Russell 2500 36.80%	S&P 1500 7.49%
Russell 2500 8.11%	Russell 3000 15.72%	S&P 500 5.49%	S&P 400 -36.23%	S&P 1000 33.48%	S&P 1000 26.55%	Russell 3000 1.03%	Russell Midcap 17.28%	S&P 1000 35.87%	Russell 3000 6.95%
S&P 600 7.68%	Russell 1000 15.46%	S&P 1500 5.47%	S&P 1500 -36.72%	Russell 1000 28.43%	S&P 600 26.31%	S&P 600 1.02%	Russell 1000 16.42%	Russell Midcap 34.76%	Russell Midcap 6.87%
Russell 1000 6.27%	S&P 1500 15.34%	S&P 1000 5.18%	Russell 2500 -36.79%	Russell 3000 28.34%	Russell Midcap 25.48%	S&P 1000 -0.92%	Russell 3000 16.42%	Russell 3000 33.55%	S&P 400 3.22%
Russell 3000 6.12%	Russell Midcap 15.26%	Russell 3000 5.14%	S&P 500 -37.00%	S&P 1500 27.25%	Russell 3000 16.93%	Russell Midcap -1.55%	Russell 2000 16.35%	S&P 400 33.50%	S&P 1000 1.08%
S&P 1500 5.66%	S&P 600 15.11%	Russell 2500 1.38%	Russell 3000 -37.31%	Russell 2000 27.17%	S&P 1500 16.38%	S&P 400 -1.73%	S&P 600 16.33%	Russell 1000 33.11%	Russell 2500 0.28%
S&P 500 4.91%	S&P 1000 11.89%	S&P 600 -0.30%	Russell 1000 -37.60%	S&P 500 26.47%	Russell 1000 16.10%	Russell 2500 -2.51%	S&P 1500 16.17%	S&P 1500 32.59%	S&P 600 -3.72%
Russell 2000 4.55%	S&P 400 10.31%	Russell 2000 -1.57%	Russell Midcap -41.46%	S&P 600 25.57%	S&P 500 15.06%	Russell 2000 -4.18%	S&P 500 16.00%	S&P 500 32.39%	Russell 2000 -4.41%

Source: Callan

U.S. Equity Style Returns

Periods Ending September 30, 2014

3Q 2014				Annualized 1 Year Returns				
	Value	Core	Growth		Value	Core	Growth	
Large	-0.2%	0.7%	1.5%	Large	18.9%	19.0%	19.2%	 Represents 3 best performing asset classes in time period
Mid	-2.7%	-1.7%	-0.7%	Mid	17.5%	15.8%	14.4%	 Represents 3 middle performing asset classes in time period
Small	-8.6%	-7.4%	-6.1%	Small	4.1%	3.9%	3.8%	 Represents 3 worst performing asset classes in time period

- Last Quarter: Large caps outperformed; growth led value
- Last Year: Large caps best, growth led value

Large Cap Core is represented by the Russell 1000 Index, Large Cap Value is represented by the Russell 1000 Value Index and Large Cap Growth is represented by the Russell 1000 Growth Index. Mid Cap Core is represented by the Russell Midcap Index, Mid Cap Value is represented by the Russell Midcap Value Index and Mid Cap Growth is represented by the Russell Midcap Growth Index. Small Cap Core is represented by the Russell 2000 Index, Small Cap Value is represented by the Russell 2000 Value Index and Small Cap Growth is represented by the Russell 2000 Growth Index.

International Equity Returns

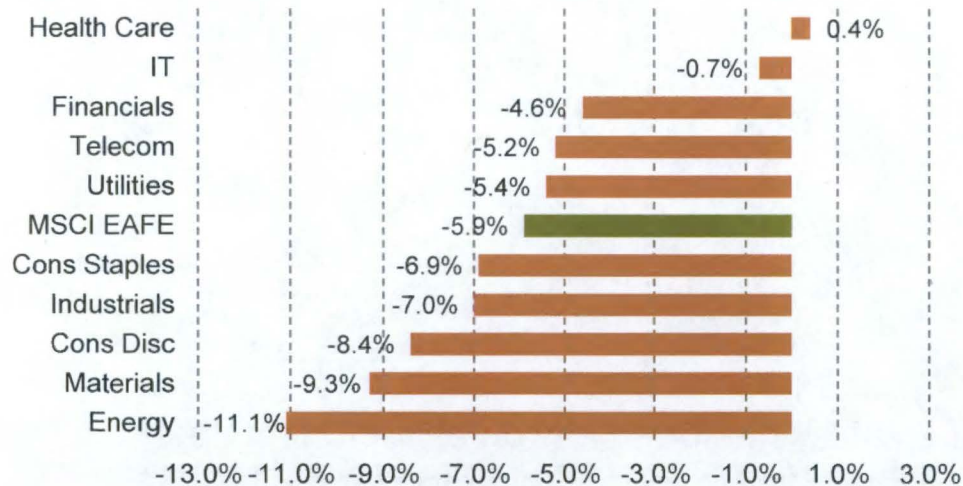
Periods Ending September 30, 2014

Regional Quarterly Performance (U.S. Dollar)



Source: MSCI

MSCI EAFE Sector Returns



Source: Barrow Hanley Quarterly Benchmark Review

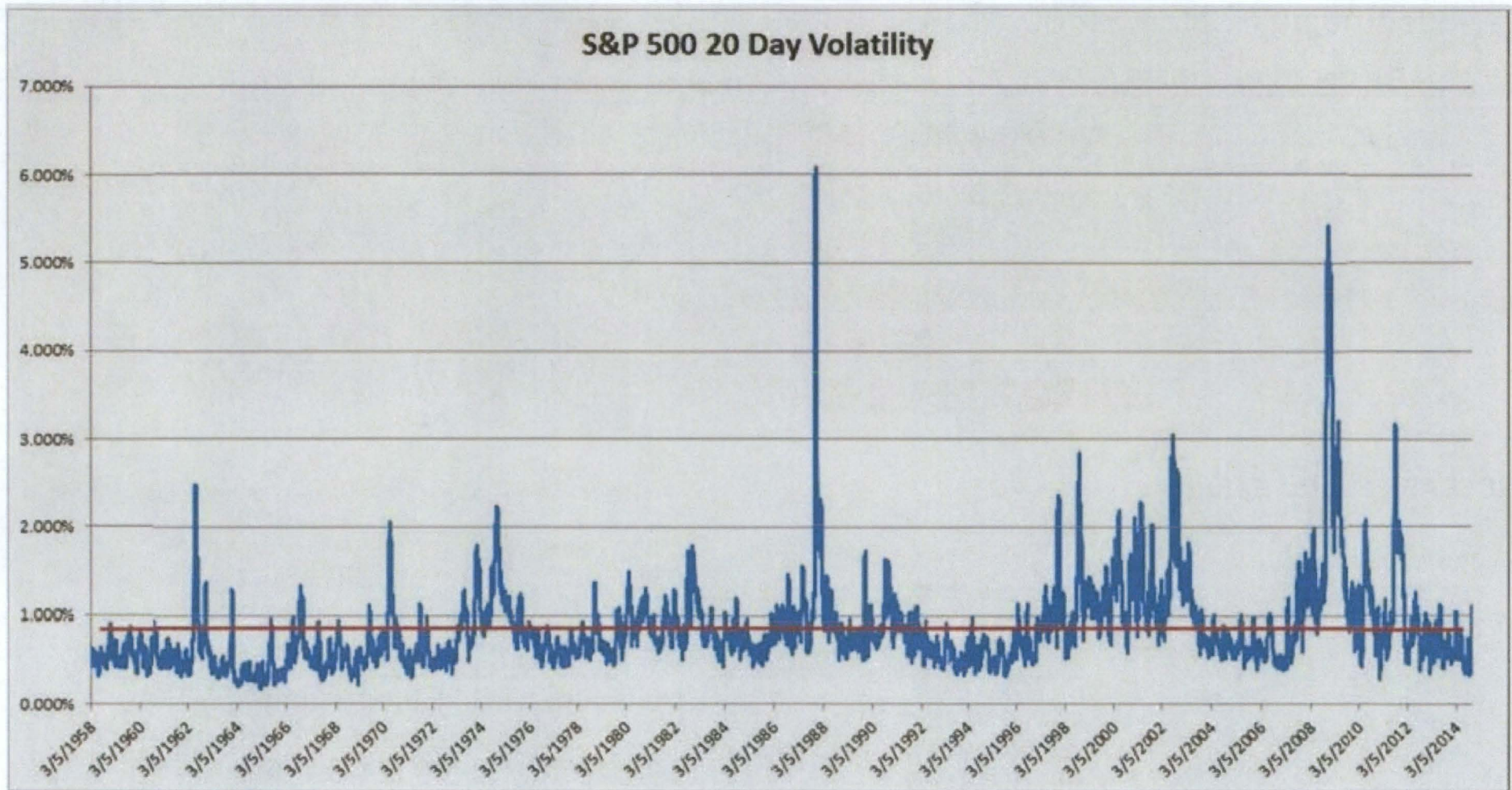
Major Currencies' Cumulative Returns (vs. U.S. Dollar)



*Euro returns from 1Q99. German mark prior to 1Q99.
Source: MSCI

- ACWI ex-U.S. dropped in the quarter and trailed the U.S.; Europe lagged (-7.0%).
- The euro, yen and pound depreciated versus the strengthening U.S. dollar.
- Emerging markets fell but bested developed markets

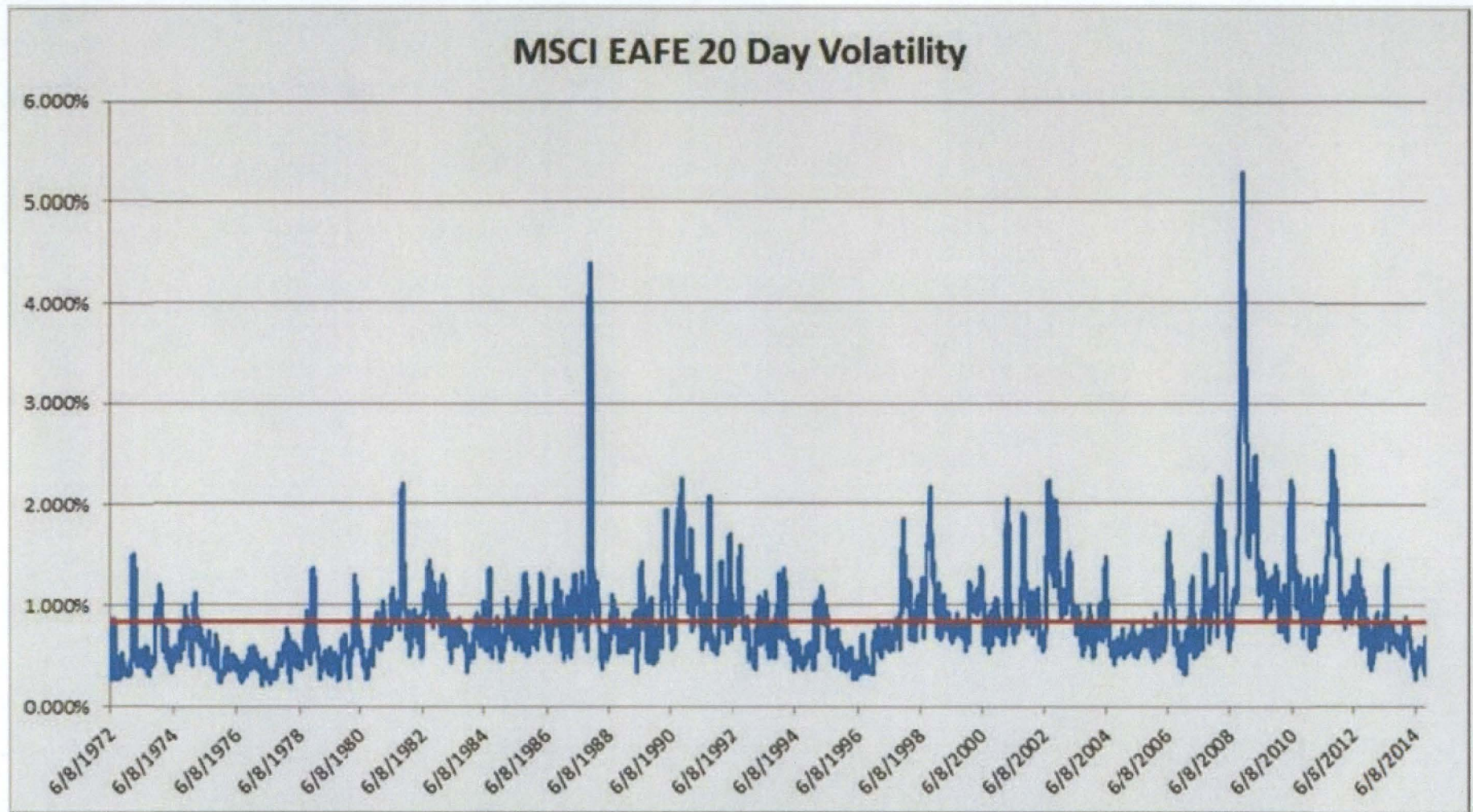
Domestic Equity Volatility



Source: Iron Horse Capital Management, "Visualizing Recent Volatility."

- As measured by rolling 20-day standard deviation, volatility has been low on an historical basis. Even the recent market gyrations have been barely above the long-term average since 1958.

International Equity Volatility



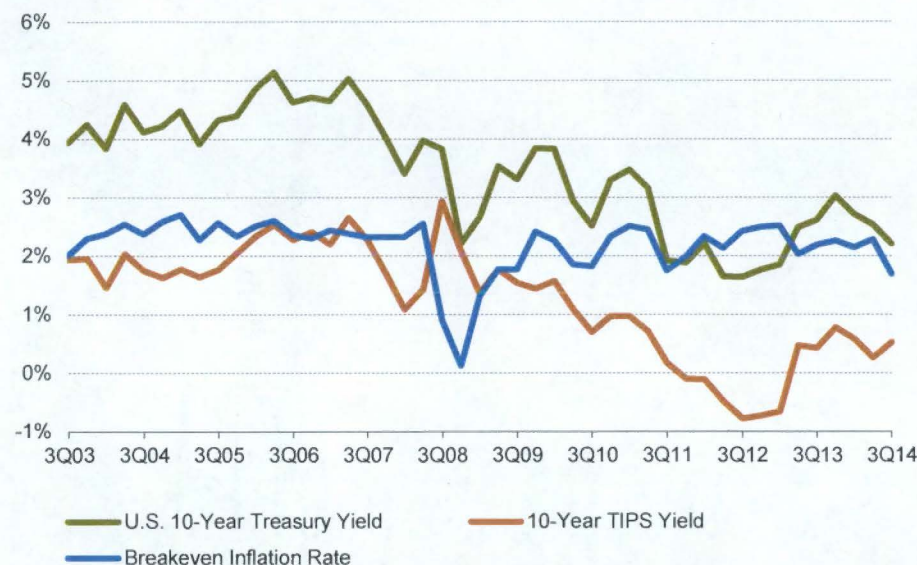
Source: Iron Horse Capital Management, "Visualizing Recent Volatility."

- EAFE's rolling 20-day standard deviation shows that even recent volatility in the non-US developed markets is below the historical average and far lower than during the 2011 European debt crisis.

Yield Curve Changes

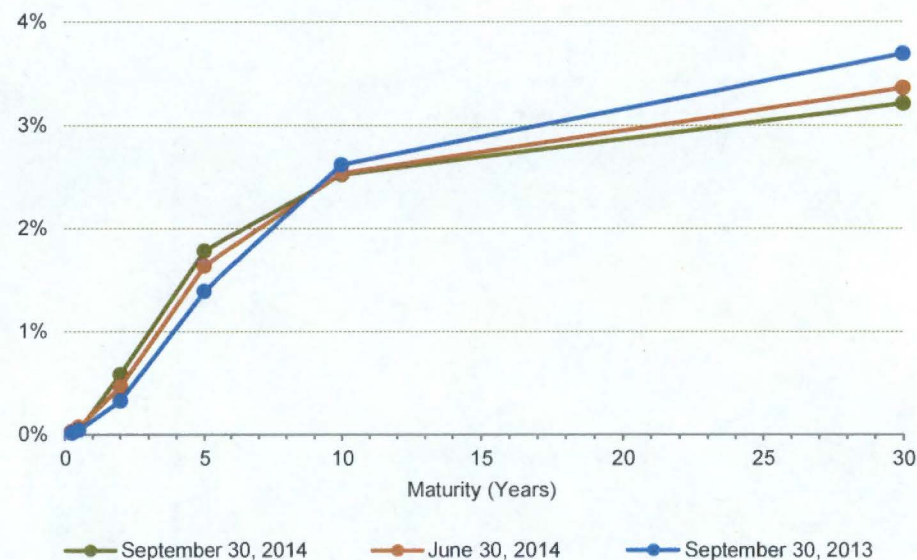
Periods Ending September 30, 2014

Historical 10-Year Yields



Source: Bloomberg

U.S. Treasury Yield Curves



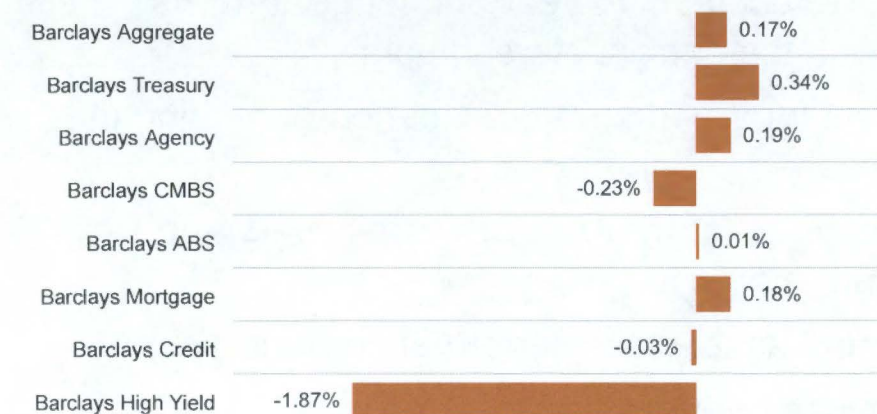
Source: Bloomberg

- A flattening of the yield curve helped long-term treasury returns.
- The ten-year treasury yield remained essentially flat at 2.52%, declining one basis point.
- TIPS fell 2.0% in the quarter, trailing the Aggregate (+0.2%).

Total Rates of Return by Bond Sector

Periods Ending September 30, 2014

Absolute Returns for Quarter ended September 30, 2014

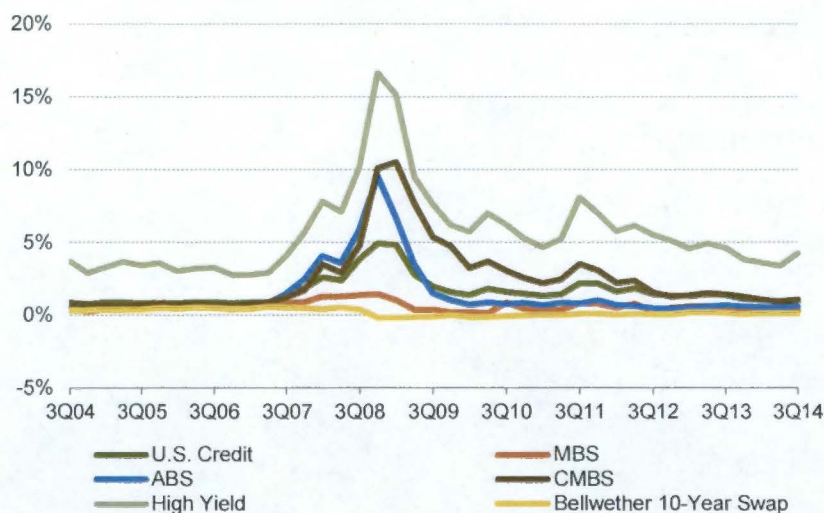


Source: Barclays

Excess Return versus Like-Duration Treasuries



Effective Yield Over Treasuries



Source: Barclays

Capital Market Projections

No changes since Mr. O'Leary's April presentation

- Long-term economic outlook drives the process. We focus on 10 year and longer returns and carefully assess the implications associated with the current starting point.
- Callan will begin updating capital market projections for the 2015 – 2024 period beginning in December, 2014. The final projections will be published in January 2015.
- Evaluate the current environment and economic outlook for the U.S. and other major industrial countries (business cycles, relative growth, inflation, etc.).
- Examine the relationships between the economy and asset class performance patterns.
- Examine both recent and long-run trends in asset class performance.
- Apply market insight:
 - Consultant experience - Plan Sponsor, Manager Search, Specialty
 - Industry consensus
 - Client Policy Review Committee
- Test the projections for reasonable results.

Callan 2014 Capital Market Assumptions

Summary of Callan's Long-Term Capital Market Projections (2014 - 2023)

Asset Class	Index	Projected Return*	Projected Risk
Domestic Equity	Russell 3000	7.60%	19.00%
International Equity	MSCI World ex-US	7.50%	20.20%
Domestic Bonds	BC Aggregate	3.00%	3.75%
Cash Equivalents	90-Day T-Bill	2.00%	0.90%
Inflation	CPI-U	2.25%	1.50%

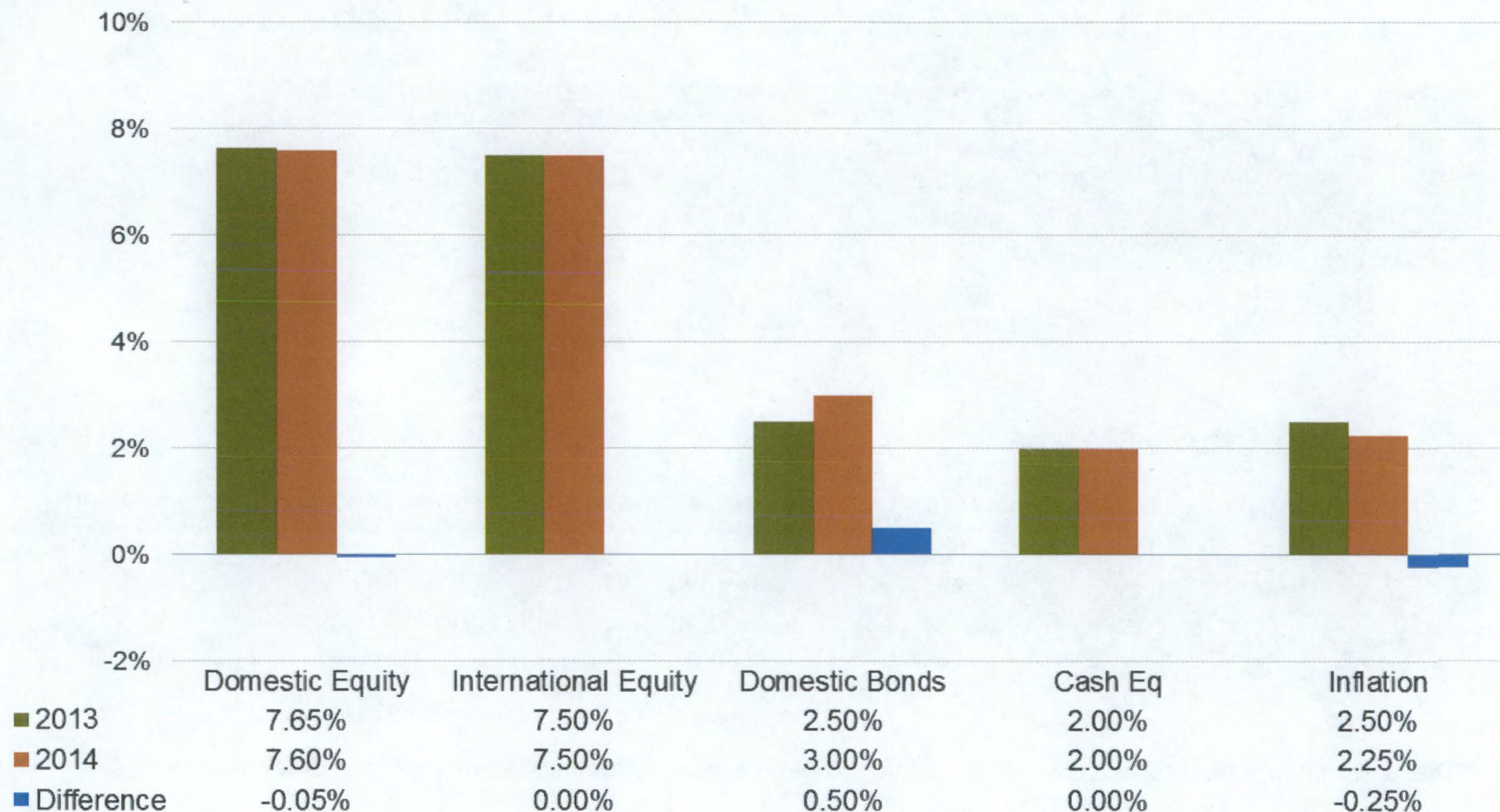
2013 Correlation Matrix

Correlations	Domestic Equity	International Equity	Domestic Bonds	Cash Eq
Domestic Equity	1.000			
International Equity	0.852	1.000		
Domestic Bonds	-0.107	-0.100	1.000	
Cash Equivalents	-0.042	-0.010	0.100	1.000

* These are geometric returns derived from arithmetic returns and the associated risk (standard deviation).

Change in Callan Capital Market Assumptions

10 Year Geomtric Return



2014 Capital Market Inputs & Resultant “Efficient” Mixes

For 2012 return & risk for the current policy were 7.46% and 12.95%, respectively

For 2013 return & risk for the current policy were 7.19% and 12.99%, respectively

2014 Risk and Return Assumptions

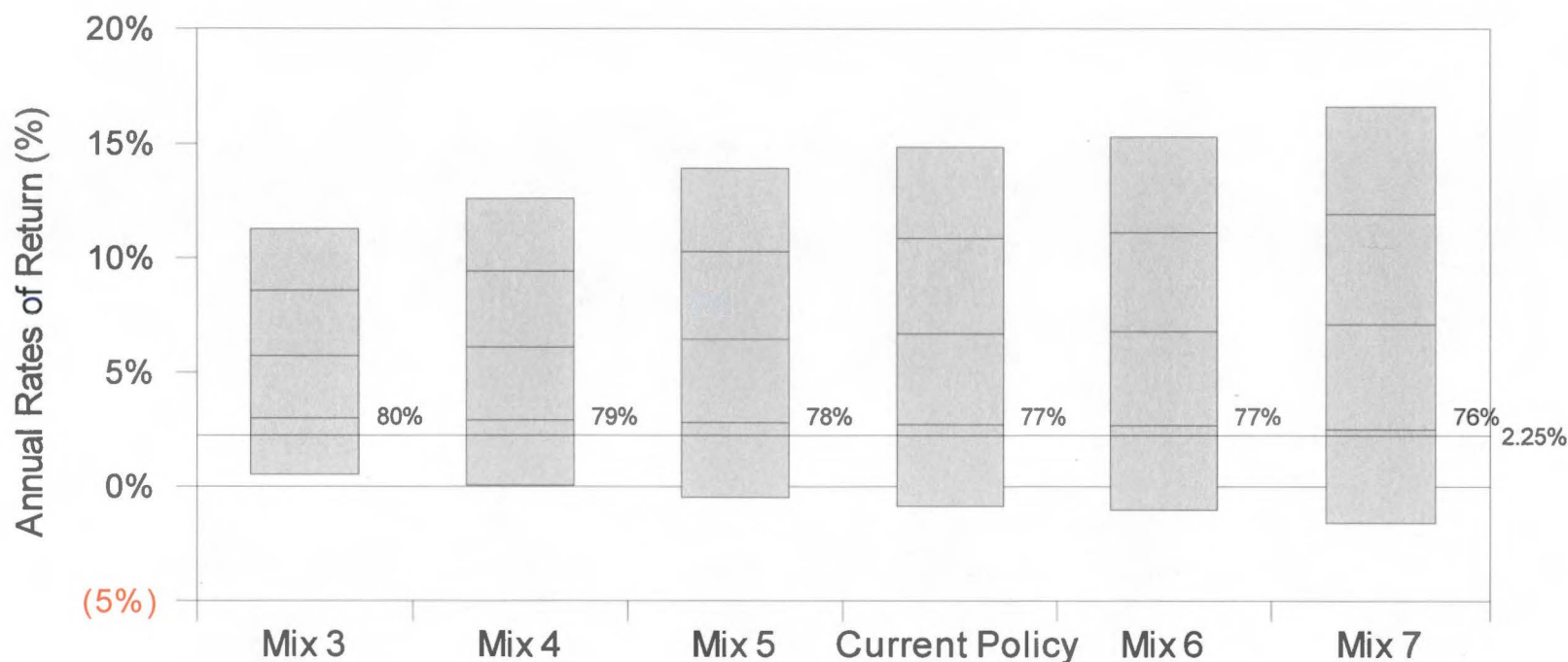
Asset Class	Projected Arithmetic Return	Projected Standard Deviation	5 Yr. Geometric Mean Return	10 Yr. Geometric Mean Return	Projected Sharpe Ratio
Broad Domestic Equity	9.15%	19.02%	7.66%	7.62%	0.38%
International Equity	9.25%	20.20%	7.54%	7.48%	0.36%
Domestic Fixed	3.05%	3.75%	3.02%	3.02%	0.28%
Cash Equivalents	2.00%	0.90%	2.01%	2.01%	0.00%

Asset Mix Alternatives

Portfolio Component	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5	Current Policy	Mix 6	Mix 7
Broad Domestic Equity	21	26	31	37	42	47	47	53
International Equity	11	14	17	19	22	23	25	28
Domestic Fixed	68	60	52	44	36	30	28	19
Cash Equivalents	0	0	0	0	0	0	0	0
Totals	100	100	100	100	100	100	100	100
Projected Arithmetic Return	5.00%	5.50%	6.00%	6.50%	7.00%	7.34%	7.50%	8.00%
Projected Standard Deviation	6.23%	7.58%	9.02%	10.50%	12.00%	13.05%	13.53%	15.07%
5 Yr. Geometric Mean Return	4.91%	5.33%	5.74%	6.12%	6.48%	6.71%	6.81%	7.12%
10 Yr. Geometric Mean Return	4.90%	5.33%	5.73%	6.10%	6.46%	6.69%	6.79%	7.09%
10 Yr. Simulated Sharpe Ratio	0.47%	0.44%	0.41%	0.39%	0.37%	0.36%	0.35%	0.34%

5-Year Range of Returns

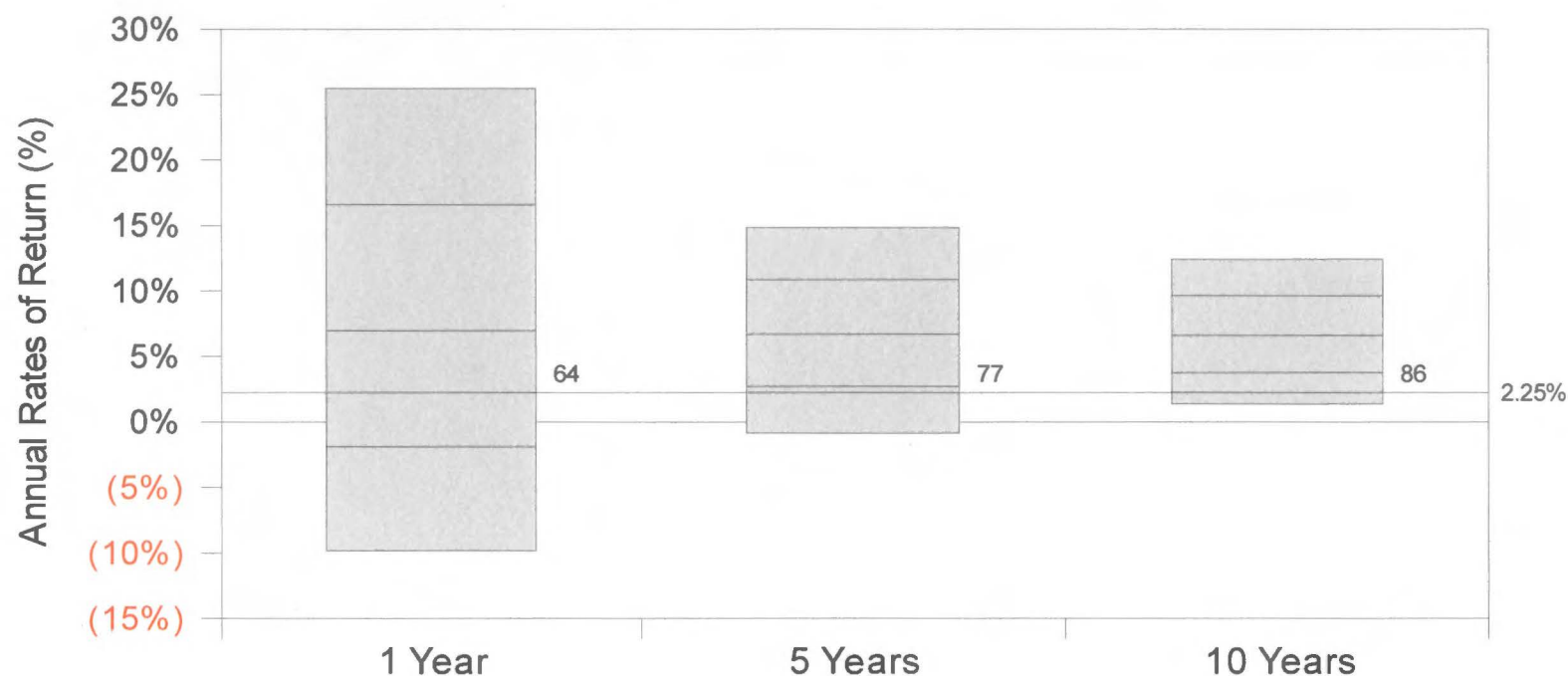
Range of Projected Rates of Return
Projection Period: 5 Years



10th Percentile	11.27%	12.60%	13.93%	14.86%	15.29%	16.62%
25th Percentile	8.57%	9.43%	10.28%	10.85%	11.11%	11.92%
Median	5.72%	6.10%	6.45%	6.68%	6.79%	7.10%
75th Percentile	2.99%	2.91%	2.80%	2.71%	2.68%	2.51%
90th Percentile	0.52%	0.05%	(0.48%)	(0.86%)	(1.02%)	(1.59%)
Prob > 2.25%	80.24%	79.08%	77.92%	77.36%	77.16%	76.19%

Current Policy – Multiple Time Frames

Range of Projected Rates of Return
Current Policy



10th Percentile	25.49%	14.86%	12.43%
25th Percentile	16.59%	10.85%	9.64%
Median	6.98%	6.68%	6.61%
75th Percentile	(1.89%)	2.71%	3.78%
90th Percentile	(9.83%)	(0.86%)	1.36%
Prob > 2.25%	64.4%	77.4%	85.6%



11/11/2021



Exxon Valdez Oil Spill
Restoration Plan

2014 Update
Injured Resources and Services

DRAFT 11/10/14

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Draft 11/10/14

2014 UPDATE ON INJURED RESOURCES AND SERVICES

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2014 UPDATE ON INJURED RESOURCES AND SERVICES

INTRODUCTION

Purpose of the Injured Resources and Services List

In November 1994, the *Exxon Valdez* Oil Spill Trustee Council adopted an official list of resources and services injured by the *Exxon Valdez* Oil Spill (EVOS or Spill) as part of its Restoration Plan. The Injured Resources and Services List (List) serves three main purposes in the Restoration Program:

- 1 Initially, the List identified natural resource and human service injuries caused by the oil Spill and cleanup efforts.
- 2 The List helped guide the *Restoration Plan* and was especially important in 1994 when the plan was first adopted. The List was created as guidance for the expenditure of public restoration funds under the Plan, and assisted the Trustees and the public with ensuring that money was expended on resources that needed attention. The List continues to serve that purpose today to some extent, although the focus of the Council has expanded to an ecosystem approach, which is discussed below.
- 3 Finally, the status of injured resources on the List provides the Trustees and the public a way to monitor recovery of ecological functions and human services that depend on those resources.

Although the fish and wildlife resources that appear on the List experienced population-level or chronic injury from the Spill, not every species that suffered some degree of injury was included. For example, carcasses of about 90 different species of oiled birds were recovered in 1989, but only 10 species of birds were included on the List.

Moreover, it should be noted that the analysis of resources and services in relation to their recovery status only pertains to amelioration of effects from the 1989 oil Spill. When the Restoration Plan was first drafted, the distinction between effects of the oil Spill and the effects of other natural or anthropogenic stressors on affected natural resources was not clearly delineated. At that time, the Spill was recent, the impact to the Spill area ecosystem was profound and adverse effects of the oil on biological resources were apparent. As time passes, the ability to distinguish effects of oil from other factors affecting fish and wildlife populations diminishes. Currently, natural and human perturbations may be hindering recovery of some resources initially injured by the Spill. While those perturbations warrant consideration in defining and assessing recovery, they do not negate the responsibility of the Council to pursue restoration of Spill-affected resources. However, the passage of time and the evolution of science have focused the Council's work from a listing of injured species to an ecosystem approach and this has shifted the purpose and utility of the Injured Resources and Species List. The Council recognizes that the complexities and the difficulties in measuring the continuing impacts from the Spill result in some inherent uncertainty in defining the status of a resource or service through a specific list and the Council's focus has accordingly expanded to a more ecosystem approach. The 1994 Plan also outlined an ecosystem approach to restoration and this more integrated view has become increasingly recognized as essential and the original organization of efforts through a list of species in the Update is no longer a viable approach.

In 2009, at the Twentieth Anniversary of the Spill, the Council acknowledged that funding for future restoration is limited and that it is becoming increasingly difficult to distinguish between Spill impacts and other effects in measuring recovery. Consequently, the Council's current efforts are focused on a

few specific programs: (1) long-term herring research and monitoring; (2) long-term monitoring of marine conditions and injured resources; (3) shorter-term harbor protection/restoration projects; (4) lingering oil; and (5) habitat protection.

The Council also recognizes that long-term management of species and resources initially injured by the Spill lies with the agencies and entities that have the mandate and resources to pursue these long-term goals. To support natural restoration and to enable management consistent with this long-term restoration, the Council has increasingly directed funds toward research that provides information that is critical to monitor and support the healthy functioning of the Spill ecosystem.

Restoration Goals and Objectives

The *Restoration Plan* guides the Council's restoration efforts with respect to resources and services in the Spill-affected area (Figure 1).

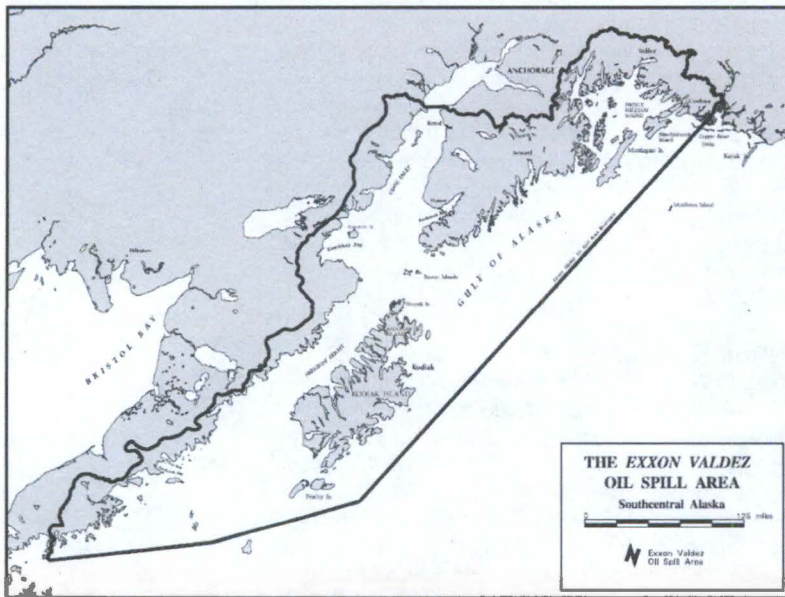


Figure 1: Map produced by: Alaska Department of Natural Resources, Land Records Information Service

It contains policies for making restoration decisions and describes how restoration actions will be implemented. As part of the *Restoration Plan*, the List was created to document injured resources that were of concern to the Council. The benchmarks that were established at that time to assess the status of the resources and services injured by the oil Spill included:

- **Restoration Goal:** The overarching goal of the Restoration Program is the recovery of all injured resources and services, sustained by healthy, productive ecosystems to maintain naturally occurring diversity.

- **Recovery Goal of Injured Resources and Services:** The primary goal for all recovering injured resources and services is a return to conditions that would have existed had the Spill not occurred.
- **Recovery Objective/s:** Specific, measurable parameters that, when achieved, signal the recovery of an injured resource or service.

It is difficult to predict conditions that would have existed in the absence of the Spill. Therefore, the recovery objectives include measurable and biologically substantive parameters that can be used as proxies for these conditions. In some cases, multiple objectives are used for individual resources. For some resources, so little is known about the original or current injury or status that identifying a recovery objective has not been possible.

Recovery Status Categories

The List has historically included four categories of recovery which are defined below. A fifth category was introduced in 2010, "Very Likely Recovered." Together, these categories represent a scale along which an injured resource can progress:

- **Not Recovering:** Resources that are Not Recovering continue to show little or no clear improvement from injuries stemming from the oil Spill. Recovery objectives have not been met.
- **Recovering:** Recovering resources are demonstrating substantive progress toward recovery objectives, but are still adversely affected by residual impacts of the Spill or are currently being exposed to lingering oil. The amount of progress and time needed to attain full recovery varies depending on the species.
- **Recovered:** Recovery objectives have been met, and the current condition of the resource is not related to residual effects of the oil Spill.
- **Very Likely Recovered:** While there has been limited scientific research on the recovery status of these resources in recent years, prior studies suggest that there had been substantial progress toward recovery in the decade following the Spill. In addition so much time has passed since any indications of some Spill injury, including exposure to oil; it is unlikely that there are any residual effects of the Spill.
- **Recovery Unknown:** For resources in the unknown category, data on life history or the extent of injury from the Spill is limited. Moreover, given the length of time since the Spill, it is unlikely that new or further research will provide information that will help in comprehensively assessing the original injury or determining the residual effects of the Spill such that a better evaluation of recovery can occur.

Human services that rely on natural resources were also injured by the oil Spill and can thus be placed in one of the above categories. Because the recovery status of injured services is inextricably linked to the state of the resource on which it depends, full recovery of the Spill area cannot occur until both resources and services are restored.

List Update History

The *Restoration Plan* states that the List should be reviewed periodically and updated to reflect results from scientific studies and other information. A summary of how the list has changed since 1996 is available in Table 1.

A reassessment of the List is necessary to understand the consequences of the original Spill and the effects of oil remaining in the environment. It also provides a way to identify areas where additional restoration activities are needed and documents each resource's progress toward its recovery objectives.

The List was first updated in September 1996. At that time, the bald eagle was upgraded from recovering to recovered. In March 1999, a major review of recovery objectives and status occurred and several more changes were made. River otters were then considered to be recovered, and five resources—black oystercatchers, clams, marbled murrelets, Pacific herring, and sea otters—were upgraded to recovering. One resource, the common loon, was moved from recovery unknown to not recovering. Five resources remained as recovery unknown. All four human services were classified as recovering.

Recovery continued to progress and more changes were made to the List in 2002. Five more species or resources were moved to the recovered category: archaeological resources, black oystercatchers, common murre, sockeye salmon and pink salmon. In addition, designated wilderness areas were moved from the recovery unknown to the recovering category; Pacific herring were moved back from the recovering to the not recovering category; subtidal communities were moved from the recovering to recovery unknown category; and killer whales were moved from not recovering to recovering. In all, seven resources were considered fully recovered from the effects of the oil Spill; 16 resources and all four human services were not fully recovered; and the recovery of five resources was still considered unknown.

In 2006, the Update acknowledged the recovery of common loons, cormorants, Dolly Varden, and harbor seals from the effects of the Spill. Harlequin ducks were moved from not recovering to recovering based on positive population trends, and marbled murrelets were moved from recovering to unknown. In addition, in the 2006 Update the following factors were considered in the development of the Recovery Objectives established for injured resources:

- **Return to pre-Spill levels:** Used where population estimates or indices were available prior to 1989. For species that are highly variable, these numbers could reflect a range of values. Where possible, these numbers account for the effects of other influences on injured populations, such as from climate change, although these other effects may interact with oil Spill effects.
- **Hydrocarbon exposure:** Used where hydrocarbon exposure itself was part of the original basis for injury, where hydrocarbon exposure may limit recovery, or where hydrocarbon exposure in an injured resource may be a pathway to injury in other resources.
- **Stable or increasing population:** Used where resources were in decline before the Spill or where ongoing declines unrelated to the Spill may be occurring.
- **Productivity:** Reproductive success and population demographics are used in lieu of or to supplement data on population sizes. Measures include such indicators as eggs produced per female, young successfully reared, returns per spawning adult and growth rates.

In 2010, 21 years after the Spill, the Council again evaluated the status of injured resources and services and provided a synopsis of the most current information available. Based on the recommendations from the Science Panel and agency experts, the recovery objectives were reviewed for each resource and service to provide objectives that are potentially attainable and scientifically valid.

In 2010, a fifth Recovery Status was also added. "Very Likely Recovered" was added to reflect the status of species for which (1) there has been limited scientific research on the resource's recovery status in recent years, (2) prior studies suggest that there had been substantial progress toward recovery in the decade following the Spill, and so much time has passed since any indications of some Spill injury, including exposure to oil, that it is unlikely that there are any residual effects of the Spill.

Barrow's goldeneyes were added to the List in 2010, based on their continuing exposure to oil at that time. Lastly, the Recovery Objectives were also updated to address

- Stressors other than oil that may be currently affecting a population
- The likelihood that a resource has recovered given the amount of time that has lapsed since the Spill
- Changes to the environment in Prince William Sound since 1989 may make returning some resources to pre-Spill levels unlikely

This 2014 Update, 25 years post-Spill, acknowledges the recovery of sea otters, Barrow's Goldeneye, Kittlitz's Murrelets, harlequin ducks, clams, mussels and rockfish. Pacific herring have also been moved to recovering after showing 21 years of limited recovery.

Recovery for most injured resources has taken much longer than was originally projected. However, this Update contains the largest number of resources moving to recovered status since 1994. This shift marks an important stage in recovery from the Spill. While this is a positive step forward, there remain nine resources and four services that are still recovering from the Spill.

Recovery Status Determination

The recovery goal for injured resources is a condition that would exist in the absence of the *Exxon Valdez* oil Spill. However, ecosystems are dynamic and the Spill-affected area would have changed even without the Spill. Given the limited ability to predict multi-year changes in marine ecosystems, it is difficult to know precisely what changes were inevitable had the Spill not occurred. However, it is still possible to assess the recovery status of a particular resource by reviewing multiple sources of applicable information.

Types of information that are used to assess the recovery status of a particular resource or service include

- initial magnitude of oil impacts to a population in the Spill area
- comparisons of population demographic in oiled and reference areas
- survey data of community members in oiled and reference areas
- continued exposure to residual oil in the Spill area as measured by the biomarker cytochrome P450 or tissue concentrations of petroleum hydrocarbons

- exposure potential as evaluated by the distribution of lingering oil; overlap in spatial distribution of lingering oil and a resource; and identification of an exposure pathway
- persistence of sub-lethal or chronic injuries
- intrinsic ability of the population to recover
- other natural or human-caused stressors

Even with such an evaluation, direct links cannot always be drawn between effects from the oil Spill and the observed, current condition of a particular resource: in most cases the amount or type of data is insufficient to complete a cause and effect relationship. Specifically, there is little pre-Spill data for many of the injured resources. Moreover, the physiological effects of oil on key species of wildlife and subsequent population consequences were not well understood at the time of the Spill. As a result, few species exist for which there is complete knowledge of the original impacts of the oil Spill.

Uncertainties in Evaluating Recovery Status

To mitigate the uncertainties inherent in evaluating recovery, the Council reviews current, relevant scientific information while acknowledging the limitations of assigning an ultimate cause and effect relationship using the existing data. The types of uncertainty found in the literature include:

1. *Variability in population estimates.* Because the patterns of animal distribution present challenges in getting accurate counts (especially of highly mobile fish, birds and marine mammals), most estimates of population size have wide ranges of variability associated with the data.
2. *Lack of pre-Spill data.* For many of the resources affected by the Spill there was limited or no recent data on their status in 1989. Additionally, some of the available pertinent data were the result of limited sampling, which consequently produced wide confidence intervals around the population estimates.
3. *Interaction of Spill and natural factors.* It is increasingly difficult to separate what may be lingering effects of the Spill from changes that are natural or caused by factors unrelated to the oil Spill.
4. *Scale.* The geographic scale of studies conducted over the years has varied among resources and this disparity must be considered when interpreting data and applying results to recovery status. Some studies were conducted at the large spatial scale to address population and ecosystem concerns, while other studies focused on localized exposure and effects of oil.

Table 1: Historical and current overview of the status of injured resources and services during each reassessment year.

Resource	1996 Status	1999 Status	2002 Status	2006 Status	2010 Status	2014 Status
Archaeological Resources	Recovering	Recovering	Recovered	Recovered	Recovered	Recovered
Bald Eagles	Recovered	Recovered	Recovered	Recovered	Recovered	Recovered
Barrow's goldeneye	N/A	N/A	N/A	N/A	Recovering	Recovered
Black Oystercatchers	Unknown	Recovering	Recovered	Recovering	Recovering	Very Likely Recovered
Clams	Unknown	Recovering	Recovering	Recovering	Recovering	Recovered
Common Loons	Unknown	Not recovering	Not recovering	Recovered	Recovered	Recovered
Common Murres	Recovering	Recovering	Recovered	Recovered	Recovered	Recovered
Cormorants	Not recovering	Not recovering	Not recovering	Recovered	Recovered	Recovered
Cutthroat Trout	Unknown	Unknown	Unknown	Unknown	Very likely recovered	Very likely recovered
Designated Wilderness	Unknown	Unknown	Recovering	Recovering	Recovering	Recovering
Dolly Varden	Unknown	Unknown	Unknown	Recovered	Recovered	Recovered
Harbor Seals	Not recovering	Not recovering	Not recovering	Recovered	Recovered	Recovered
Harlequin Ducks	Not recovering	Not recovering	Not recovering	Recovering	Recovering	Recovered
Intertidal Communities	Recovering	Recovering	Recovering	Recovering	Recovering	Recovering
Killer Whales-AB	Not recovering	Not recovering	Recovering	Recovering	Recovering	Recovering
Killer Whales-AT1	N/A	N/A	N/A	N/A	Not recovering	Not recovering
Kittitz's Murrelets	Unknown	Unknown	Unknown	Unknown	Unknown	RecoveringUnknown
Lebled Murrelets	Not recovering	Recovering	Recovering	Unknown	Unknown	RecoveringNot Recovering
Mussels	Recovering	Recovering	Recovering	Recovering	Recovering	Recovered
Pacific Herring	Not recovering	Recovering	Not recovering	Not recovering	Not recovering	Recovering
Pigeon Guillemots	Not recovering	Not recovering	Not recovering	Not recovering	Not recovering	Not recovering
Pink Salmon	Recovering	Recovering	Recovered	Recovered	Recovered	Recovered
River Otters	Unknown	Recovered	Recovered	Recovered	Recovered	Recovered
Rockfish	Unknown	Unknown	Unknown	Unknown	Very likely recovered	Recovered
Sea Otters	Not recovering	Recovering	Recovering	Recovering	Recovering	Recovered
Sediments	Recovering	Recovering	Recovering	Recovering	Recovering	Recovering
Sockeye Salmon	Recovering	Recovering	Recovered	Recovered	Recovered	Recovered
Subtidal Communities	Recovering	Recovering	Unknown	Unknown	Very likely recovered	Very likely recovered
Human Service	1996 Status	1999 Status	2002 Status	2006 Status	2010 Status	2014 Status
Commercial Fishing	Recovering ^a	Recovering	Recovering	Recovering	Recovering	Recovering
Passive Use	Recovering ^a	Recovering	Recovering	Recovering	Recovering	Recovering
Recreation & Tourism	Recovering ^a	Recovering	Recovering	Recovering	Recovering	Recovering
Subsistence	Recovering ^a	Recovering	Recovering	Recovering	Recovering	Recovering

^a Classified as "Lost or Reduced Service" in 1996 Update, meaning that the service was negatively indirectly impacted by the Spill due to its connection with impacted natural resources

More Effective Use of Remaining Funds

For some species such as rockfish and cutthroat trout, no further actions have been taken with regard to future funding of studies to assess recovery. This may be based upon the factors discussed above and may also include a consideration of the following:

1. *Additional studies expensive.* More study, with sufficient effort and scope to achieve powerful tests of the impacts of lingering oil, would be prohibitively expensive.
2. *Unable to definitively demonstrate an effect.* Natural variability, confounding effects, and a lack of tools to estimate important metrics make it unlikely that an effect could be detected with a high degree of confidence.
3. *Effects likely small.* Based on available data, mechanistic principles, and knowledge of past Spill impacts on processes of recovery, the likely effects are deemed to be minimal.
4. *Effects unlikely to be of ecological importance.* Based on available data, understanding of ecological interactions, and the expected small size of lingering impacts, it is unlikely that the effect (if any) will impair function of the ecological system.
5. *No effective restoration options available.* Even if demonstrated, there are no reasonable options for restoration of the injured resource.
6. *More effective uses of funds.* Other projects provide promise of more definitive results, greater significance to the ecosystem, or more potential for restoration.

Ecosystem Perspective and Recovery

The List consists mainly of single species and resources, but it also provides a basis for evaluating the recovery of the overall ecosystem; its functions and the services it provides to people. Within their 1994 *Restoration Plan*, the Council adopted an ecological approach to restoration, and the studies and projects the Council sponsors have been ecologically-based.

The *Restoration Plan* defines ecosystem recovery as follows:

Full ecological recovery will have been achieved when the population of flora and fauna are again present at former or pre-Spill abundances, healthy and productive, and there is a full complement of age classes at the level that would have been present had the Spill not occurred. A recovered ecosystem provides the same functions and services as would have been provided had the Spill not occurred.

Although significant progress has been made using this definition of recovery, the coastal and marine ecosystems in the oil Spill region have not fully recovered at this time from the effects of the Spill. Although full ecological recovery has not been achieved, the Spill area ecosystem is making progress towards recovery 25 years after the *Exxon Valdez* oil Spill.

INJURED RESOURCES

ARCHAEOLOGICAL RESOURCES

Injury

The oil Spill area is believed to contain more than 3,000 sites of archaeological and historical significance. Twenty-four archaeological sites on public lands are known to have been adversely affected by cleanup activities or looting and vandalism linked to the oil Spill. Additional sites on both public and private lands were probably injured, but damage assessment studies were limited to public land and not designed to identify all such sites.

Documented injuries included theft of surface artifacts, masking of subtle clues used to identify and classify sites, violation of ancient burial sites, and destruction of evidence in layered sediments. In addition, residual oil may have contaminated sites.

Recovery Objective

Archaeological resources are nonrenewable; they cannot recover in the same sense as biological resources. Archaeological resources will be considered to have recovered when Spill-related injury ends, looting and vandalism are at or below pre-Spill levels, and the artifacts and scientific data remaining in vandalized sites are preserved (e.g., through excavation, site stabilization, or other forms of documentation).

Recovery Status

Assessments of 14 sites in 1993 suggested that most of the archaeological vandalism that can be linked to the Spill occurred early in 1989, before adequate constraints were put into place over the activities of oil Spill cleanup personnel. Most vandalism took the form of "prospecting" for high yield sites. Once these problems were recognized, protective measures were implemented and successfully limited additional injury. Although some cases of vandalism were documented in the 1990s, there appears to be no Spill-related vandalism at the present time.

From 1994–1997, two sites in Prince William Sound were partly documented, excavated, and stabilized by professional archaeologists because they had been so badly damaged by oiling and erosion. The presence of oil in sediment samples taken from four sites in 1995 did not appear to have been the result of re-oiling by Exxon Valdez oil. Residual oil does not appear to be contaminating any known archaeological sites.

In 1993, the Trustee Council provided part of the construction costs for the Alutiq Archaeological Repository in Kodiak (www.alutiqmuseum.com). This facility now houses Kodiak area artifacts that were collected during Spill response. In 1999, the Trustee Council approved funding for an archaeological repository and local display facilities for artifacts from Prince William Sound and lower Cook Inlet. Local displays are open to the public in Port Graham, Cordova, Seward, Seldovia, and Tatitlek. The facility in Seward serves as the repository for the Chugach region.

Based on the apparent absence or extremely low rate of Spill-related vandalism and the preservation of artifacts and scientific data on archeological sites, archaeological resources are considered to be recovered.

BALD EAGLES

Injury

The bald eagle is an abundant resident of marine and riverine shorelines throughout the oil Spill area. Following the oil Spill, a total of 151 eagle carcasses were recovered from the Spill area. Prince William Sound provides year-round and seasonal habitat for about 6,000 bald eagles, and within the Sound it is estimated that about 250 bald eagles died as a result of the Spill. There were no estimates of mortality outside the Sound, but there were deaths throughout the Spill area. In addition to direct mortalities, productivity was reduced in oiled areas of Prince William Sound in 1989.

Recovery Objective

Bald eagles will have recovered when their population and productivity (reproductive success) have returned to pre-Spill levels.

Recovery Status

Productivity (or reproductive success as measured by chicks per nest) was back to pre-Spill levels in 1990 and 1991, and an aerial survey of adults in 1995 indicated that the population had returned to or exceeded its pre-Spill level in the Sound.

In September 1996, the Trustee Council classified the bald eagle as recovered from the effects of the oil Spill.

BARROW'S GOLDENEYES

Injury

Barrow's goldeneyes are sea ducks that winter in protected nearshore marine waters in Prince William Sound and feed in the intertidal zone, consuming primarily mussels.

Some acute mortality of Barrow's goldeneyes was observed in the weeks and months immediately following the Exxon Valdez oil Spill in March 1989. Total acute mortality of Barrow's goldeneyes is difficult to determine, given uncertainty in carcass identification and recovery rates, but sea ducks, generally, were vulnerable to acute mortality and constituted approximately 25 percent of the carcasses recovered in Prince William Sound. Given the number of Barrow's goldeneyes present at the time of the Spill, acute mortality was likely in the low thousands.

Of more concern are longer-term effects due to either chronic exposure to lingering oil or indirect effects of trophic web disruption. Because Barrow's goldeneyes occur exclusively in intertidal and shallow subtidal habitats, they are particularly vulnerable to lingering oil exposure and the potential for physiological effects. Similarly, reliance on intertidal invertebrate prey suggests that Barrow's goldeneyes are particularly vulnerable to disruptions of intertidal communities. Barrow's goldeneyes were shown to have higher levels of induction of cytochrome P4501A (CYP1A) in oiled areas compared to unoiled areas of PWS in 1996, 1997 and 2005. However, in March 2009, average CYP1A was similar between areas, suggesting that exposure to residual oil had abated by that time.

Recovery Objective

Barrow's goldeneyes will have recovered when demographics and biochemical indicators of hydrocarbon exposure in goldeneyes in oiled areas of Prince William Sound are similar to those of goldeneyes in unoiled areas.

Recovery Status

Within their wintering range, Prince William Sound is an important area, supporting between 20,000 and 50,000 wintering individuals. Survey data from the U.S. Fish and Wildlife Service indicated that winter numbers of goldeneyes on oiled areas were stable from 1990–1998, in contrast to significantly increasing numbers on unoiled areas during that same time period. That was interpreted as evidence of lack of recovery, as the prediction would be that lack of continued injury would result in parallel population trajectories and that recovery would be indicated by more positive trajectories on oiled areas. However, US Fish and Wildlife Service surveys through April 2012 show that population growth rates were the same between oiled and unoiled sites and remained relatively unchanged between 1998 and 2012.~~demonstrate that slopes were parallel and stable from 1998 to 2012.~~

Comment [cwb1]: Change recommended by USFWS

A 2012 study of Barrow's goldeneye habitat use in oiled and unoiled portions of Prince William Sound found that densities of birds in oiled areas were at expected levels, given the habitat in the oiled areas, suggesting that food limitations in the intertidal zone within oiled areas were not restraining recovery. There is no evidence that Barrow's goldeneyes are currently being exposed to lingering oil in the intertidal habitat.

Comment [cwb2]: Change recommended by USFWS

Interpretation of surveys and habitat selection is constrained by lack of full understanding of Barrow's goldeneye demography, particularly rates of site fidelity and dispersal. These values have important implications for understanding the process of population recovery.

Lack of elevated CYP1A in oiled relative to unoiled areas suggests that exposure to lingering oil has ceased in the Barrow's goldeneyes. Surveys in from 2009–2012 indicate that populations in oiled and unoiled areas have converged and the total population in Prince William Sound has remained stable since the Spill. Barrow's goldeneyes are considered to be recovered from the effects of the oil Spill.

BLACK OYSTERCATCHERS

Injury

Black oystercatchers spend their entire lives in or near intertidal habitats and are highly vulnerable to oil pollution. They are fully dependent on the nearshore environment and forage exclusively on invertebrate species along shorelines. It was~~is~~ estimated at the time of the Spill that 1,500–2,000 oystercatchers breed in south-central Alaska. Only nine carcasses of adult oystercatchers were recovered following the Spill, but the actual number of mortalities may have been several times higher.

Comment [cwb3]: Change recommended by USFWS

In addition to direct mortalities, breeding activities were disrupted by the oil and cleanup activities. When comparing 1989 with 1991, significantly fewer pairs occupied and maintained nests on oiled Green Island, while during the same two years the number of pairs and nests remained similar on unoiled Montague Island. Nest success on Green Island was significantly lower in 1989 than in 1991, but Green Island nest success in 1989 was not lower than on Montague Island. In 1989, chicks disappeared from nests at a significantly greater rate on Green Island than from nests on Montague Island. Disturbance associated with cleanup operations also reduced productivity on Green Island in 1990. In general, the overt effects of the Spill and cleanup had dissipated by 1991, and in that year productivity on Green Island exceeded that on Montague Island.

Recovery Objective

Black oystercatchers will have recovered when Spill there is a stable population trend and comparable hatching success and growth rates of chicks in oiled and unoiled areas. Black oystercatchers will have recovered when the population, reproduction and productivity have reached levels that would have existed without the spill. An increasing population trend and comparable hatching success and growth rates of chicks in oiled and unoiled areas, after taking into account geographic differences, will indicate that recovery is underway.

Comment [cwb4]: Accidentally deleted text was added back.

Recovery Status

Black oystercatchers are long-lived (15+ years) and territorial, occupying nests in rocky areas close to the intertidal zone and returning in successive years to nest again in the same vicinity. In the early 1990s, elevated hydrocarbons in feces were measured in chicks living on oiled shorelines. Deleterious behavioral and physiological changes including lower body weights of females and chicks were also recorded. Because foraging areas are limited to a few kilometers around a nest, contaminations of mussel beds in the local vicinity was thought to provide a source of exposure. In 1998 the Trustee Council sponsored a study to reassess the status of this species in Prince William Sound. The data indicated that oystercatchers had fully reoccupied and were nesting at oiled sites in the Sound. The breeding phenology of nesting birds was relatively synchronous in oiled and unoiled areas, and no oil-related differences in clutch size, egg volume, or chick growth rates were detected. However, a higher rate of nest failure occurred on oiled Green Island: at the time this was thought to be the result of predation, not lingering effects of oil. Because the extent of shoreline with persistent contamination was limited and lingering oil was patchy, it was concluded that the overall effects of oil on oystercatchers in the Sound had been minimal. However, the reasons that predation was higher at oiled Green Island than at Montague were not investigated. It is not clear whether predation was higher because there were higher numbers of predators, lower number of nests initiated or a behavioral change in the parents that would have led to lower nest protection. There have been no further studies of hatching success of black oystercatchers in Prince William Sound since this study.

Comment [cwb5]: Change recommended by USFWS

Based on this study and one year of boat-based surveys (2000) of marine birds in Prince William Sound indicating that there were increases in numbers of oystercatchers in both the oiled and unoiled areas for that year, the black oystercatcher was identified as recovered. A long-term (1989–2007) evaluation of marine bird population trends suggested that populations of black oystercatchers in the Sound may not have recovered to conditions had the Spill not occurred, making the recovered designation premature and their status was changed to recovering in the 2010 Update. Surveys through 2012 have shown a stable population trend.

Comment [cwb6]: Changes recommended by USFWS

Further, oil exposure to oystercatchers was documented in 2004 using a biochemical marker of exposure, cytochrome P450IA. However, no studies since 2004 have documented continuing oil exposure.

Recent studies show no evidence of change in black oystercatcher abundance in oiled areas and no evidence that trends differ between oiled and unoiled areas. However, no data exists to evaluate the recovery of the hatching success in oiled or unoiled areas. Therefore we interpret the recovery status of black oystercatchers as ~~recovered~~very likely recovered.

Comment [cwb7]: Changes recommended by USFWS

CLAMS

Injury

Clams are widely distributed throughout the oil Spill area. They can be found in a variety of substrates and are most abundant in the lower intertidal and shallow subtidal zones. Clams are important prey for various fish and wildlife resources including sea otters and some sea birds, ~~sea ducks and others.~~

The magnitude of the immediate impacts of oil on clam populations varied depending on species of clam, degree of oiling and location. Although direct mortality of some clam species like littlenecks and butter clams were assessed for several years after the Spill, other more sensitive species, (e.g., *Macoma* and *Mya* spp) were not the focus of much study, and the immediate impact of the oil to these species remains unknown. In 1990 and 1991, growth of littleneck clams at oiled sites was less than at reference sites, and growth rate was directly proportional to hydrocarbon concentrations. Additionally, mortality was higher and growth rates lower in clams transplanted from clean areas to oiled areas ~~to clean areas~~, five to seven years after the Spill.

Cleanup technologies, including hot water, high pressure washing, manual and mechanical scrubbing and physical removal of oiled sediments, were detrimental to clam populations. Hot water washing caused thermal stress, oil dispersal into the water column, animal displacement and burial, and the transportation of fine grain sediment from the upper intertidal into the lower intertidal zone. Early assessments reported that cleanup activities resulted in reductions in clam abundance and distribution on treated (oiled-but-treated) beaches up to three years after the Spill.

Recovery Objective

Clams will have recovered when population and productivity measures at oiled and washed sites are comparable to populations and productivity measures at unwashed sites, when there is no oil exposure, and when abundances of large clams can provide adequate, uncontaminated food supplies for predators and subsistence users.

Recovery Status

Studies have indicated that abundances of some species of clams were lower on treated beaches through 1996. Densities of littleneck and butter clams were depressed through 1997 on cleaned mixed-sedimentary shores where fine sediments had been washed down the beach during pressured water treatments.

As part of an investigation of sea otter populations conducted from 1996-1998, researchers compared clam densities between oiled sites on Knight Island and unoiled sites on Montague Island. They reported an increase in mean size of littlenecks and butter clams at Knight Island, where numbers of sea otters, a major predator of clams were significantly reduced. Absolute densities of littlenecks and butter clams were not different between oiled and unoiled sites; however, oiled sites had fewer juvenile clams and lower numbers of other clam species. In 2002, differences in species richness, diversity and abundance of several species were still measurable between cleaned (oiled and treated) and untreated (oiled but untreated) beaches. Moreover, as of 2005, several wildlife species that use the intertidal zone and feed on bivalves/clams (e.g., harlequin ducks and sea otters/black oystercatchers) were still being exposed to oil.

Comment [c8]: Change recommended by USGS

Between 2002 and 2010, bivalve assemblages declined substantially in PWS. Recent (2012³) studies indicate that the decline is in response to changes in regional conditions rather than the Spill or subsequent cleanup activities. **There are currently no differences in species richness, diversity and**

abundance between cleaned (oiled and treated) and untreated (oiled but untreated) beaches and no evidence of oil exposure in clam tissue samples. The recovery objectives have been met and clams are considered recovered.

Comment [c9]: Change recommended by USGS

COMMON LOONS

Injury

Carcasses of 395 loons of four species were collected following the Spill, including 216 common loons. Current population sizes in the Spill area are not known for any of these species, but it is estimated that the 216 collected common loons represented between 720–2,160 total individuals that died as a result of the initial oiling event. Common loons in the Spill area may number only a few thousand, including only hundreds in Prince William Sound. Common loons injured by the Spill probably included a mixture of wintering and migrating birds. The specific breeding areas used by the loons affected by the Spill are not known.

Recovery Objective

Common loons will have recovered when their population returns to pre-Spill levels in the oil Spill area. An increasing population trend in Prince William Sound will indicate that recovery is underway.

Recovery Status

Boat-based surveys of marine birds in Prince William Sound give some insight into the recovery status of the loons affected by the oil Spill. Pre-Spill counts of loons exist only for 1972-1973 and 1984-1985. After the Spill, contrasts between oiled and unoled areas of the Sound indicated that loons as a group were generally doing better in unoled areas than in oiled areas. Thus, the survey data suggested that the oil Spill had a negative effect on numbers of loons (all species combined) in the oiled parts of the Sound.

Common loons exhibited declines in population numbers and habitat usage in oiled areas in 1989 but not in 1990. There was a weak negative effect of oiling on population numbers again in 1993, but not in 1996 or 1998. Based on the boat surveys carried out through 2000, there were indications of recovery, because in that year the highest counts ever recorded for common loons in PWS. In addition, July 2000 counts were the third highest of the 11 years since 1972, although these increases were limited to the unoled portion of the Sound. Loons are a highly mobile species with widely variable population numbers and the pre-Spill data were limited, thus, this one year of high counts in the unoled areas was insufficient to indicate that recovery had started.

Population surveys conducted from 1989–2007 found increasing winter population trends in common loon densities in oiled areas. The summer counts do not show a consistent positive relationship, however the summer counts of loons are usually low and variable because they are predominately found on their breeding grounds in other areas during the summer. Common loons have an intrinsically low population growth rate and relatively large numbers of carcasses were recovered after the Spill, yet post Spill winter population counts of common loons have met or exceeded available pre-Spill counts for all years measured since the Spill, except 1993.

Given the long-term positive changes in winter population information, common loons are considered recovered from effects of the oil Spill.

COMMON MURRES

Injury

About 30,000 carcasses of oiled birds were picked up in the first four months following the oil Spill, and 74 percent of them were common and thick-billed murres (mostly common murres). Many more murres probably died than actually were recovered. Based on surveys of index breeding colonies at such locations as the Barren Islands, Chiswell Islands, Triplet Islands, Puale Bay, and Ugiashak Island, the Spill area populations may have declined by about 40 percent following the Spill. In addition to direct losses of murres, there is evidence that the timing of reproduction was disrupted and productivity decreased. Interpretation of the effects of the Spill, however, is complicated by incomplete pre-Spill data and by indications that populations at some colonies were in decline before the oil Spill.

Recovery Objective

Common murres will have recovered when populations at index colonies have returned to pre-Spill levels and when reproductive success (productivity) is sustained within normal bounds. Increasing population trends at index colonies will be an indication that recovery is underway.

Recovery Status

Post-Spill monitoring at the breeding colonies in the Barren Islands indicated that productive success was within normal bounds by 1993, and it has stayed within these bounds each breeding season since then. During the period 1993–1997, the murres nested progressively earlier by two to five days each year, suggesting that the age and experience of nesting birds were increasing, as might be expected after a mass mortality event. By 1997, the numbers of murres at the Barren Island had increased, probably because three- and four-year old non-breeding sub-adult birds that were hatched there in 1993 and 1994 were returning to their natural nesting colony. Although counts were low in 1996, the counts in 1997 at this index site brought the colony size to pre-Spill levels.

The population size coupled with normal reproductive success (productivity), indicate that recovery has been achieved for common murres.

CORMORANTS

Injury

Cormorants are large fish-eating birds that spend much of their time on the water or perched on rocks near the water. Three species of cormorants are typically found within the oil Spill area. Carcasses of 838 cormorants were recovered following the oil Spill, including 418 pelagic, 161 red-faced, 38 double-crested, and 221 unidentified cormorants. From this sample, direct oil Spill related mortality was estimated at between 2,900 and 8,800 deaths. In 1996, the U.S. Fish and Wildlife Service Alaska Seabird Colony Catalog, however, listed counts of 7,161 pelagic cormorants, 8,967 red-faced cormorants, and 1,558 double-crested cormorants in the oil Spill area. These are direct counts at colonies, not overall population estimates, but they suggest that population sizes are small. In this context, it appears that injury to all three cormorant species was significant.

Counts on the outer Kenai Peninsula coast suggested that the direct mortality of cormorants due to oil resulted in fewer birds in this area in 1989 compared to 1986. In addition, there were statistically significant declines in the estimated numbers of cormorants (all three species combined) in the oiled portion of Prince William Sound based on pre and post-Spill boat surveys in July 1984–85 compared to

1989-91 It is not known what the counts and trends of cormorants would have been in the absence of the oil Spill

Recovery Objective

Pelagic, red-faced, and double-crested cormorants will have recovered when their populations return to pre-Spill levels in oiled areas. An increasing population trend in Prince William Sound will indicate that recovery is underway.

Recovery Status

Marine bird surveys were conducted during ten of the 16 years during 1989-2005. For cormorants, trends for both summer and winter populations were increasing in the oiled area of Prince William Sound. Moreover, population estimates for cormorants in summer 2004 ranged from 9,000–11,000 birds, which falls within the range of 10,000–30,000 estimated in 1972.

Therefore, although population estimates of cormorants are highly variable throughout their range, the recovery objectives have been met and cormorants are considered to be recovered

CUTTHROAT TROUT

Injury

Anadromous streams throughout the Spill zone were oiled following the Spill in 1989, and oil was sequestered in the intertidal sediments at stream mouths and along shorelines. Subsequently, it was documented that cutthroat trout emigrating within the oiled areas in 1989–1990 grew more slowly than those in the unoiled areas. When trout leave their freshwater spawning areas they feed primarily in the nearshore environment, thus it is likely cutthroats were exposed to oil in this environment. The difference in growth rates between trout in oiled versus unoiled streams persisted through 1991. It was hypothesized that the slower rate of growth in oiled streams was the result of reduced food supplies or direct exposure to oil, and there was concern that reduced growth rates resulted in reduced survival.

Recovery Objective

Cutthroat trout will have recovered when growth rates within oiled areas are similar to those for unoiled areas, after taking into account geographic differences.

Recovery Status

Due to lack of widespread, long-term stock assessment throughout Alaska, it is difficult to assess population status and trends of cutthroat trout. Recent exposure to lingering oil is unlikely, because most of the bioavailable oil appears to be confined to subsurface intertidal areas, and not dissolved in the water column. Moreover, distribution of cutthroat trout is patchy throughout the Sound, thus access to oil is restricted. However, the Sound is the northern edge of cutthroat trout range and dispersal during marine migration is restricted, thereby increasing their susceptibility to habitat alteration and pollution. Cutthroat trout populations in the Sound are small and geographically isolated from each other. These characteristics suggest that recovery of a population would depend less on mixing with nearby aggregates than on the productivity of the endemic population and the extent to which it was injured by the Spill. Confounding factors such as sport fishing and habitat alteration of spawning streams (e.g., through logging) may also inhibit successful recruitment of young into a population and subsequent increase in numbers.

Given the ecological similarities in summer diet and foraging ecology along shorelines between cutthroat trout, juvenile pink salmon and Dolly Varden, and the absence of ongoing injury to those other two species, further research would be very unlikely to demonstrate any evidence of continuing differences between oiled and unoiled areas due to the Spill. Thus, funding the additional research necessary to provide current growth rate and abundance data for this species is not a cost-effective scientific priority.

Comment [cwb10]: Change recommended by ADFG

Cutthroat trout are very likely recovered. Additional study, with sufficient effort and scope to achieve powerful tests of the impacts of lingering oil, would be relatively expensive, would likely be unable to definitively demonstrate an effect, and any effects would likely be minimal. For these reasons, it is unlikely that additional research will clarify this species' injury status.

DESIGNATED WILDERNESS AREAS

Injury

The Spill deposited oil into the waters and tidelands adjoining areas designated as Wilderness or Wilderness Study Areas by Congress or the Alaska State Legislature. During the intense cleanup seasons of 1989 and 1990, thousands of workers and hundreds of pieces of equipment were at work in the Spill zone. This activity was an unprecedented imposition of people, noise, and activity on the area's undeveloped and normally sparsely occupied landscape. Although human activity levels on these wilderness shores have returned to normal, lingering oil still occurs at some locations. The Spill-affected areas were: designated wilderness in the Katmai National Park, wilderness study areas in the Chugach National Forest and Kenai Fjords National Park, and Kachemak Bay Wilderness State Park.

Recovery Objective

Designated wilderness areas will have recovered when oil is no longer encountered in them and the public perceives that they are recovered from the Spill.

Recovery Status

Six moderately to heavily oiled sites on the Kenai and Katmai coasts were surveyed in 1994, at which time some oil mousse persisted in a remarkably unweathered state on boulder-armored beaches at five sites. These sites were visited again in 1999, and oil was found along park shorelines of the Katmai coast. Surveys carried out in 2001 and 2003 to determine the surface and subsurface distribution of oil in Prince William Sound found lingering oil on shorelines within designated wilderness study areas. In 2005 and 2012 the sites surveyed in 1999 were again sampled. Although surface cover of oil had declined, the subsurface oil persisted in amounts similar to those found in 1999. Moreover, the oil at those sites was compositionally similar to samples collected 11 days after the Spill. The stranding of the oil on stable, boulder-armored shores or on a low-energy bedrock/boulder beach further protected the oil and slowed oil degradation processes.

Lingering oil persists in designated wilderness areas, and quantitative studies of lingering oil outside of Prince William Sound are lacking. However, in many areas, the amount of oil has diminished since 1990. Therefore, designated wilderness areas are considered to be recovering.

DOLLY VARDEN

Injury

Dolly Varden are widely distributed in the Spill area. Adults spawn in natal streams and most overwinter in contiguous freshwater lakes. Migration into the marine environment occurs in the summer where the fish spend time feeding in nearshore waters. Many fish were in freshwater when the oil Spill occurred but emigrated in and out of the Spill area later in the season. Concentrations of hydrocarbons in the bile of Dolly Varden were some of the highest of any fish sampled in 1989. Like the cutthroat trout, there is evidence from 1989–90 that Dolly Varden, in a small number of oiled index streams in Prince William Sound, grew more slowly than in unoiled streams. It was hypothesized that the slower rate of growth in oiled streams was the result of reduced food supplies or exposure to oil, and there was concern that reduced growth rates would result in reduced survival.

Recovery Objective

Dolly Varden will have recovered when growth rates within oiled streams are comparable to those in unoiled streams, after taking into account geographic differences.

Recovery Status

The growth differences between Dolly Varden in oiled and unoiled streams did not persist into the 1990–91 winter, but no growth data have been gathered since 1991. In addition, by 1990 the concentrations of hydrocarbons in bile had dropped substantially and a biochemical marker of oil exposure had a diminished.

In a 1991 restoration study sponsored by the Trustee Council, some tagged Dolly Varden moved considerable distances among streams within Prince William Sound, suggesting that mixing of overwintering stocks takes place during the summer in saltwater. Follow up studies indicate that Dolly Varden are abundant throughout the Sound, and genetically similar among geographically different aggregates. Frequent genetic exchange among groups of fish implies that mixing occurs, and outside populations are available to enhance depleted stocks. Moreover, fishing pressure on Dolly Varden is likely not as intense as that on coastal cutthroat trout. Populations are larger, the fish are more widely spread throughout the Sound and larger numbers can better tolerate harvest. Finally, current exposure to lingering oil is unlikely because most of the bioavailable oil is confined to subsurface intertidal areas and not dissolved in the water column.

Given the available evidence, Dolly Varden are considered to be recovered from effects of the oil Spill.

HARBOR SEALS

Injury

Harbor seal numbers were declining in the Gulf of Alaska, including in Prince William Sound, before the oil Spill. Exxon Valdez oil affected harbor seal habitat, including key haul-out areas and adjacent waters, in Prince William Sound and as far away as Tugidak Island, near Kodiak. Estimated mortality as a direct result of the oil Spill was about 300 seals in oiled parts of Prince William Sound. In some parts of the Sound, 80 percent of the seals had oil on them in May 1989 and remained oiled until their molt in August. Some of the haul-out sites were oiled through the pupping season, and many pups became oiled shortly after birth. Based on aerial surveys conducted at trend-count haulout sites in central

Prince William Sound before (1988) and after (1989) the oil Spill, seals in oiled areas declined by 43 percent, compared to 11 percent in unoiled areas.

Recovery Objective

Harbor seals will have recovered from the effects of the oil Spill when their population is stable or increasing.

Recovery Status

Harbor seal populations in the Sound were declining before the oil Spill and the decline continued after the Spill occurred. Factors contributing to this decline may involve environmental changes that occurred in the 1970's in which the amount and quality of prey resources were diminished. It is possible that the changes in the availability of high quality forage fish such as Pacific herring and capelin altered the ecosystem such that it may now support fewer seals than it did prior to the late 1970's. Other sources of mortality that may be contributing to lower seal numbers could include predation, subsistence hunting, and commercial fishery interactions (e.g., entanglement and drowning in nets).

Satellite tagging studies sponsored by the Trustee Council and genetic studies carried out by the National Marine Fisheries Service indicate that harbor seals in the Sound are largely resident throughout the year and have limited movement and interbreeding with other subpopulations in the northern Gulf of Alaska. This suggests that recovery must come largely through recruitment and survival within resident populations.

Based on annual counts from haulouts concentrated in the south-central region of the Sound, seal numbers stabilized from 1996–2005 and likely increased between 2001–2005. From 1990–2005, seal numbers at sites that were not oiled decreased at a greater rate than oiled sites, indicating no localized effects of the Spill. However, the entire Spill zone was not surveyed, and trends may have been influenced by movements of seals from oiled to unoiled sites after the Spill and a return to more oiled sites in recent years. This hypothesis has not been studied directly.

Harbor seals are considered recovered due to collective evidence from the last ten years indicating that harbor seal population numbers are stabilizing or increasing.

HARLEQUIN DUCKS

Injury

Harlequin ducks spend most of their time in intertidal and shallow subtidal habitats where much of the oil was initially stranded. In Prince William Sound, about 150 harlequin duck carcasses were collected immediately after the Spill in 1989. From these recovered birds, it was estimated that 1,000 harlequins were killed by the initial oiling event, which represented about 7 percent of the wintering population. In addition to acute effects, harlequin ducks were one of the few species for which chronic injury related to long-term exposure to lingering oil was documented.

Recovery Objective

Harlequin ducks will have recovered when breeding- and non-breeding-season demographics and biochemical indicators of hydrocarbon exposure in harlequins in oiled areas of Prince William Sound are similar to those in harlequins in unoiled areas.

Recovery Status

Winter populations of harlequin ducks in Prince William Sound have ranged from a high of 19,000 ducks in 1994 to a low of around 11,000 ducks in March of 1990, one year after the Spill. The ~~2009~~ ²⁰¹⁰ estimate of wintering harlequin ducks in the Sound was approximately 15,000 ~~425~~.

Comment [cwb11]: Change recommended by USFWS

Several post-Spill studies were designed to measure the extent and severity of injuries to the Prince William Sound harlequin duck population from the oil Spill and assess recovery. Through 1998, oil Spill effects were still evident although the extent and magnitude of the injury remained unclear. Supporting studies provided evidence of continuing injury to harlequins through the following mechanisms: 1) invertebrate recovery in upper intertidal and subtidal areas remained incomplete for some species, thereby impacting potential prey base for harlequins; 2) oil persisted in intertidal areas of Prince William Sound where it was identified as a source of contamination of benthic invertebrates; 3) the possibility of external oiling of feathers remained due to lingering ~~surface~~ oil; 4) the ~~possibility of oil ingestion while digging for prey in the subsurface~~; 5) a biochemical marker of oil exposure (cytochrome P450) was ~~higher~~ ^{greater} in tissues of harlequin ducks captured in oiled areas than in reference areas and 5) overwinter female survival was lower in oiled than reference areas.

Comment [cwb12]: Change recommended by USGS

From 1997–2007, age composition and ~~population~~ ^{numerical} trends were compared in harlequin ducks between oiled and unoled areas of the Sound. No difference in population trends was observed between areas. Although populations in the oiled area were no longer declining as they were in the mid-1990s, a positive trend was not observed. Overall, more males than females occurred Sound-wide which is consistent with other Pacific populations of harlequin ducks. The ratio of immature to adult males was similar between areas, thus indicating similar recruitment into both populations. However, there remained ~~a~~ a disproportionately lower number of female ducks in the oiled areas. From 2000–2002, female survival rates were ~~converging~~ ^{similar} between oiled and unoled areas. However, in 2005 through 2011 the P450 biomarker was elevated in ducks from the oiled areas. Finally, lingering oil appeared to remain in habitats used by harlequins, thereby maintaining the possibility of chronic effects related to continued exposure.

Comment [cwb13]: Change recommended by USGS

In 2013 studies, hepatic CYP1A levels in harlequin ducks, based on EROD activity, were similar between areas oiled during the Spill and in nearby unoled areas. This constitutes the first time since initiation of harlequin duck CYP1A sampling in 1998 that EROD activity has not been higher in oiled areas than in unoled areas of Prince William Sound. This would indicate that harlequin ducks are no longer exposed to residual oil from the Spill.

Harlequin ducks are considered to be recovered, as indications of negative effects (reduced survival and declining numbers) in oiled areas have abated and breeding- and non-breeding-season demographics in oiled and unoled areas have converged.

INTERTIDAL COMMUNITIES

Injury

Over 1,400 miles of coastline were oiled by the Spill in Prince William Sound, on the Kenai and Alaska peninsulas, and in the Kodiak Archipelago. Heavy oiling affected approximately 220 miles of this shoreline. It is estimated that 40–45 percent of the 11 million gallons of crude oil Spill by the Exxon Valdez washed ashore in the intertidal zone. For months after the Spill in 1989, and again in 1990 and 1991, both oil and intensive cleanup activities had significant impacts on the flora and fauna of this environment.

Initial impacts to the intertidal zone occurred at all tidal levels and in all types of habitats throughout the oil Spill area. Direct assessment of the Spill effects included sediment toxicity testing, documenting abundance and distribution of intertidal organisms and sampling ecological parameters of community structure. Dominant species of algae and invertebrates directly affected by the Spill included common rockweed, speckled limpet, several barnacle species, blue mussels, periwinkles, and oligochaete worms. At lower elevations on gravel and mixed sand/gravel beaches, the abundance of sediment organisms and densities of clams declined. Large numbers of dead and moribund clams were documented on treated beaches, but these effects were likely due to a combination of oil toxicity and hot water washing. Intertidal fish were also affected. In a study conducted in different habitats, density and biomass of fish at oiled sites showed declines relative to reference sites in 1990.

Recovery Objective

Intertidal communities will have recovered when such important species as *Fucus* (marine algae/seaweed) have been reestablished at sheltered rocky sites, clams and mussels at soft or mixed sediment beaches are not contaminated by residual oil, the differences in community composition and organism abundance on oiled and unoiled shorelines are no longer apparent after taking into account geographic differences, and the intertidal and nearshore habitats provide adequate, uncontaminated food supplies for predators and subsistence users.

Recovery Status

By 1991, in the lower and middle intertidal zones, algal coverage and invertebrate abundances on oiled rocky shores had returned to conditions similar to those observed in unoiled areas. However, large fluctuations in the algal coverage in the oiled areas caused a subsequent alteration in community structure. The *Fucus* canopy was initially eliminated in most of the areas that underwent extensive cleaning, thereby removing the protection provided by this alga to intertidal organisms from predation, desiccation and abrasion. This early eradication of *Fucus* led to instability of this alga's subsequent populations because the single-aged stands present after recolonization of the habitat were susceptible to large synchronous die-offs. Until a broader distribution of mixed-aged stands is established, this cycle may continue for many generations. Meanwhile, full recovery of *Fucus* is crucial for the recovery of intertidal communities at oiled sites, because many intertidal organisms depend on the shelter this seaweed provides.

As of 1997, *Fucus* had not yet fully recovered in the upper intertidal zone on shores oriented towards direct sunlight, but in many locations, recovery of intertidal communities had been substantial. In other habitat types, such as estuaries and cobble beaches, many species did not show signs of recovery when they were last surveyed in 1991. Studies on the effects of cleanup activities on oiled and washed beaches showed some invertebrates, like mollusks and annelid worms were still much less abundant than on comparable unoiled beaches through 1997. It is undetermined how much recovery has occurred in these locations since 1997, because further work has not been conducted.

Lingering oil is still present in some intertidal areas within the Spill zone. Recent studies indicate that at beaches with pockets of buried lingering oil, high amphipod mortality is associated with elevated hydrocarbon concentrations.

Intertidal communities are considered to be recovering, due to the progress in the reestablishment of functioning intertidal communities.

KILLER WHALES

Injury

More than 160 killer whales in eight resident (fish eating) pods regularly use Prince William Sound/Kenai Fjords as part of their ranges. Transient (marine mammal eating) groups are observed in the Sound less frequently, but some (the AT1 population) use the Sound year-round. After the Spill, the loss of individual whales from the resident AB pod was of particular concern. At the time of the Spill, this group numbered 36 animals, and from 1989–1990, fourteen whales disappeared. During that time no young were recruited into the population. Members of the transient AT1 population were also observed in the area of the Spill and adjacent to the tanker as it was leaking oil. Two stranded whales were found in 1990, but their cause of death was not determined.

The original link between the AB pod losses and the oil Spill was largely circumstantial. No carcasses of any resident whales were discovered. However, whales were observed surfacing in Exxon Valdez oil slicks following the Spill in 1989 and nearly all of the deaths occurred at the time of the Spill or the following winter. It is likely that petroleum or petroleum vapors were inhaled by whales, and it is also possible that they ate contaminated fish. The mortality rate for the AB pod was 19 percent in 1989 and 21 percent in 1990, compared to an expected natural mortality rate of 2.2 percent or less.

The AT1 population appears to range only through Prince William Sound and the Kenai Fjords region. From 1984–1989, their numbers were stable at 22 regularly observed individuals, but in a retrospective analysis it was determined that nine whales disappeared shortly after the Spill. Because transients may occasionally leave their groups and swim with other transient whales, it could not be immediately determined if these whales were dead. However, in the subsequent 20 years these individuals were not seen by researchers with any other transient groups and they had not reappeared with their original group. Thus, they were considered deceased. It was hypothesized that these whales died from inhaling toxic oil vapors or as a result of eating oiled harbor seals. The timing and magnitude of missing individuals directly following the Spill and the fact that the AT1 pod is a year-round resident of the Sound suggest that oil may have caused a decline immediately after the Spill.

Since 1989, a total of 15 of 22 whales have gone missing from the AT1 group and are now presumed dead (five of the carcasses were found on beaches). During that same period there has been no recruitment of calves into this genetically unique group of transients. The AT1 transients are a distinct population segment and considered depleted under the Marine Mammal Protection Act.

Recovery Objective

The recovery objective for killer whales is a return to a pre-Spill number of 36 for the AB pod and a stable population trend in the AT1 population.

Recovery Status

From 1990–1995 seven calves were born within the AB pod; however, additional mortalities occurred and by 2005, the number of whales was only 28. AB pod continues a slow recovery and in 1990 numbered 30 individuals, although the pod has now split and travels as two distinct units. Killer whales are long-lived and slow to reproduce. Female killer whales give birth about every five years, and are likely to produce only four to six calves throughout their life. Moreover, a disproportionate number of females were lost at the time of the Spill, and population modeling has demonstrated that the Spill impacted the AB pod primarily through the loss of young and reproductive females. Unexpected mortalities in the years since the Spill have also impacted this group. These factors indicate that the

recovery rate of this population will continue to be slow. The AB pod is the only tracked pod that has experienced a decline following the Spill. Other pods have increased at an average rate of 3% per year.

Transient killer whales, such as the AT1 population, largely prey on marine mammals, especially harbor seals. From data collected at haul-outs in the south-central region of the Sound, it appears that harbor seals numbers may have increased over the past five years. It is unclear how the population dynamics of harbor seal influence transient whale populations, but changes in the availability of such an important prey species could impact survival of individuals and reproductive success within groups. Research sponsored by the Trustee Council on contaminants in killer whales in the Sound indicates that individuals of the AT1 population are carrying elevated levels of PCBs, DDT, and DDT metabolites in their blubber. Although the presence of these contaminants is not related to the oil Spill, the high concentrations found in these transients are comparable to levels that cause reproductive problems in other marine mammals. Accordingly, it is likely that the population dynamics of this population are being influenced by factors other than residual oil which may further hinder their ability to rebound from the initial injury from the Spill.

Since 1990, the AB Pod females that survived EVOS have produced nearly as many calves as would be expected based on the number of females and their ages. The lack of recovery of AB Pod, thus, can be largely attributed to the loss of young adult females, which reduced the number of reproductive females by half, and by the loss of juveniles, such that fewer animals matured to replace the reproductive females that died. As a result, the annual birth rate in AB Pod since the EVOS has been about 70 percent the birth rate observed in other resident pods, which was significantly lower than expected, this pod is considered recovering. Full recovery can be expected over decades if recruitment rates remain positive and unexpected mortalities do not occur. The AT1 transient population of killer whales has remained stable at seven individuals with no recorded births or deaths since 2010 and is considered not recovering. Progress toward recovery appears unlikely as key breeding females have been lost and no new recruitment observed.

The AB killer whale pod is considered to be recovering due to the low but stabilized reproduction rate of the pod. The recovery status of the AT1 killer whale population is considered to be not recovering due to a lack of recruitment of breeding females.

KITTLITZ'S MURRELETS

Injury

The Kittlitz's murrelet is found only in Alaska and portions of the Russian Far East. A large percentage of the world population, which may number only a few tens of thousands, breed in Prince William Sound (PWS). The Kenai Peninsula coast, lower Cook Inlet and Kachemak Bay are also important concentration areas for this species.

Seventy-two Kittlitz's murrelets were positively identified among the bird carcasses recovered after the oil Spill. Nearly 450 more Brachyramphus murrelets were not identified to the species level, and it is reasonable to assume that some of these were Kittlitz's. In addition, many more murrelets probably were killed by the oil than were actually recovered. Estimates of the total number of Kittlitz's murrelets that died as a result of the Spill vary from 255–2,000; it has been suggested that this represents 5–10 percent of the world's population.

Comment [c14]: All changes recommended by USFWS

Recovery Objective

Kittlitz's murrelets will have recovered when their population has recovered to a level had the Spill not occurred. Stable or increasing productivity within normal bounds will be an indication that recovery is underway.

Recovery Status

While studies of Kittlitz's murrelets were conducted in the 2000s, our knowledge of their ecology and trends remains limited. They are ~~historically~~ known to nest in montane areas ~~historically~~ or actively shaped by glacial action outcroppings and are thought to reside within PWS from May through August. Nesting has been reported from around the PWS region, as well as the Kenai and Alaska Peninsulas, and Kodiak Island. Kittlitz's murrelets lay a single egg and have an intrinsically low population growth rate, thus recovery from an acute loss is likely to be slow. ~~Few studies have been conducted on Kittlitz's murrelets, however they are known to nest in areas of glacial outcroppings, and they are thought to reside within the Sound from May until September/October. Kittlitz's murrelets have an intrinsically low population growth rate, thus recovery from an acute loss is likely to be slow.~~

Kittlitz's murrelets declined 99 percent from 1972 to 2004 and 88 percent from 1989-2004. While this decline likely started prior to the Spill, the rate of decline was 18 percent per year from 1972, but beginning in 1989 that rate increased to 31 percent.

Kittlitz's murrelets have shown evidence of steep declines, which began before the Spill. The rate of decline between 1972 and 2007 was -18% per year, but if measured between 1989 and 2007, the rate of decline was -31% per year. Estimating population trends for this species is complicated, however, because of the small population size, patchy distribution, and difficulty in distinguishing the rare Kittlitz's murrelet from the more abundant marbled murrelet. Data from EVOSTC surveys in PWS from 2010 and 2012 suggest a possible stabilization of Kittlitz's murrelets at a lower population size.

Natural recovery has not restored this resource to ~~pre-Spill levels or levels that would have existed had the Spill not occurred.~~ What little evidence is available ~~reveals from studies in Alaska suggest possible predator limitation in some areas, within their feeding areas, and impacts due to a shifting climate~~ lack of productivity due to food availability and chick predation. A 2014 study has also found that paralytic shellfish poisoning has contributed to chick mortality at nest sites on Kodiak Island. While it is likely that basic biological studies would be useful to understand what may be limiting recovery, ~~it is unlikely, due to these confounding effects~~ make it unlikely that further study will clarify whether there are still residual effects of the Spill. In addition, the rarity of this species makes it difficult and expensive to study.

A reexamination of data from 1989-2011 by U.S. Fish and Wildlife Service researchers has suggested that estimates of previous population trends of Kittlitz's Murrelet in PWS were driven by two early surveys that suffered from low identification rates and suspected higher than usual species misidentification. When the questionable data were censored, and two years (2001 and 2009) of intensive Kittlitz's Murrelet surveys are added, the population of Kittlitz's Murrelets in PWS shows no sign of a significant decrease since 1989. A weighted non-linear regression also shows no significant decline. However, this paper has been refuted by other USFWS researchers who believe that the data provide evidence for a major decline of KIMU in PWS that may have stabilized during the 2000s. Unfortunately surveys in 2010 and 2012 indicate further decline.

With the conflicting research and apparent lack of a stable population trend While the population decline appears to have abated, Kittlitz's murrelets have not met their recovery objective are

considered to be recovering from the Spill and, due to the factors discussed above, their current recovery status remains unknown.

MARBLED MURRELET

Comment [c15]: All changes recommended by USFWS

Injury

Marbled murrelets are found throughout the northern Gulf of Alaska and are known to concentrate in Prince William Sound. Carcasses of nearly 1,100 Brachyramphus murrelets were found after the Spill, and about 90 percent of the murrelets that could be identified to the species level were marbled murrelets. Since they are a small bird and not easily seen, many more murrelets probably were killed as a result of the oil than were found/recovered. Estimates vary but between 2,900 and 14,800 individuals were killed by the initial oiling and this represented 6–12 percent of the marbled murrelets in the Spill area. In addition to direct mortality, foraging activity and behavior was likely disrupted during the cleanup activities.

Recovery Objective

Marbled murrelets will have recovered when their population has recovered to a level had the Spill not occurred. Sustained or increasing productivity within normal bounds will be an indication that recovery is underway.

Recovery Status

Marbled murrelets were declining in the Sound before the oil Spill, and the decline has continued since the Spill. In PWS, it is estimated that marbled murrelets declined at a rate of 5% per annum from 1989-2012, a cumulative population loss of -69%. It is listed as a threatened species in Washington, Oregon, California and British Columbia. Marbled murrelets have low intrinsic productivity and a slow population growth rate. Therefore, recovery from an acute loss will likely take many years.

Marbled murrelets rely on forage fish such as Pacific herring and Pacific sand lance, which may be declining in the Spill area due to various reasons. Their dietary preferences and foraging areas make significant contact with lingering oil unlikely and there are no differences in population trends between oiled and unoled areas. Exogenous factors such as climatic factors, decreases in habitat availability, and shifts in forage fish populations are the most likely drivers of murrelet population dynamics.

Marbled murrelets have not met their recovery objective of an increasing or stable population. They are considered to be recovering not recovering from the effects of the Spill.

MUSSELS

Injury

Mussels are a keystone species in the nearshore environment throughout the spill area and are locally important for subsistence users. They provide prey for harlequin ducks, black oystercatchers, juvenile sea otters, river otters and many other species. Mussel beds are also important components of intertidal habitats because they provide physical stability and habitat for other organisms in the intertidal zone. Although mussels were coated with oil from the Exxon Valdez, dense mussel beds were purposely not disturbed during cleanup operations so the stability and habitat they provided would be preserved. However, some unconsolidated groups of mussels were subjected to hot water high pressure washing.

In 1989, after the spill, concentrations of oil in mussel tissue from the oiled area increased rapidly. These concentrations were typically far higher than in mussels from unoiled areas (or in mussels sampled from 1977-1979). The chemical composition of this oil was consistent with Exxon Valdez oil. Long-term mussel contamination occurred where substantial amounts of oil was trapped in sediment; primarily within coarse-textured habitats, including heavily oiled beaches exposed to considerable wave and storm energy (e.g., Sleepy Bay). In 1991, high concentrations of relatively unweathered oil were found in the mussels and in underlying byssal mats and sediments in certain dense mussel beds. No differences in abundance or biomass were documented in sheltered rocky and estuarine habitats. However, in coarse-textured habitats along the Kenai Peninsula, mussel populations were still affected.

Recovery Objective

Mussels will have recovered when population and productivity at oiled sites are comparable to populations and productivity at unoiled sites, when chemical markers no longer indicate oil exposure, and when mussels can provide adequate, uncontaminated food supplies for predators and subsistence users.

Recovery Status

The primary route by which mussels accumulate oil is through ingestion of petroleum hydrocarbons in the water. Much of the lingering oil in the Sound and the Gulf of Alaska is sequestered in the subsurface sediments. Mussels are found both as epibiota, attached to the surface substrates, and also partially embedded in coarse sediment, where they could come into close contact with oiled sediments. It is possible that mussels could filter particulate and dissolved hydrocarbons from the water if the oil is re-suspended during storm surges, wave action or when underlying sediments are disturbed by predators. The current distribution of oil within a mussel bed is determined by water flow, amount of oil present, sediment grain size, and disturbance history.

After the spill, hydrocarbons accumulated in mussels for about a decade at sites where oil was retained in sediments. Remaining oil was biologically available for many years after the spill, but the frequency of occurrence and average hydrocarbon concentrations in mussel tissue has declined with time. In most instances concentrations of oil in mussels from the most heavily oiled beds in Prince William Sound were largely indistinguishable from background by 1999. However, concentrations in sediment underlying the mussel beds remained elevated.

Data from 2012 indicated that hydrocarbon concentrations in mussels, even on armored beaches where elimination has been slow, are not different from background.

As mussels have met all of their goals for recovery, they are considered recovered from the effects of the Spill.

PACIFIC HERRING

Injury

Pacific herring are an ecologically and commercially important species in the PWS ecosystem. They are central to the marine food web; providing food to marine mammals, birds, invertebrates and other fish. Herring are also commercially fished for food, bait, sac-roes and spawn on kelp.

Pacific herring spawned in intertidal and subtidal habitats in Prince William Sound shortly after the oil Spill. All age classes and a significant portion of spawning habitats and staging areas in the Sound were

contaminated by oil. Juvenile and adult herring typically come to surface at night to feed and would have had increased exposure probability at this time. Lesions and elevated hydrocarbon levels were documented in some adult Pacific herring from the oiled areas. Laboratory studies showed abnormalities and possible depressed immune functions in Pacific herring exposed to oil. ~~Significant adult mortality was not observed in 1989, but this would not be unexpected given the heavy predation or scavenging by different groups of predators.~~ Egg mortalities and larval deformities were also documented in the 1989 year class, but population level effects of the Spill were never clearly established.

Comment [c16]: Change recommended by ADFG

Prior to the Spill, herring populations in the Sound were increasing as documented by record harvests in the late 1980s. However, four years after the Spill a dramatic collapse of the fishery occurred, and the herring population has never rebounded. Herring populations are dominated by occasional, very strong year classes that are recruited into the overall population. The 1988 pre-Spill year-class of Pacific herring was large in Prince William Sound, and as a result, the estimated peak biomass of spawning adults in 1992 was high. Despite the expectation that this large spawning event would lead to high numbers of fish, the population exhibited a density-dependent reduction in size of individuals, and in 1993 there was an unprecedented crash of the adult herring population in PWS. The overall 1993 harvest was about 14 percent of the 1992 harvest, and the 1989 year class was one of the smallest cohorts ever to return as spawning adults.

Recovery Objective

The population of PWS Pacific herring will be considered recovered when the spawning biomass has been above the current regulatory fishery threshold of 243,000 tons for 6 to 8 years; two strong recruitments (> 220 million) of age-3 fish have occurred during those 6 to 8 years, and spawning occurs in at least three geographic regions of the Sound.

Recovery Status

The herring fishery in the Sound has been closed for 19 of the 25 years since the Spill. The population began increasing again in 1997 and the fishery was opened briefly in 1997 and 1998. However, the population increase stalled in 1999, and recent research suggests that the opening of the fishery in 1997 and 1998 stressed an already weakened population and may have contributed to the 1999 decline. The fishery has been closed since then and no trend suggesting healthy recovery has occurred.

One of the primary factors currently limiting recovery of herring in the Sound seems appears to be disease. Two pathogens, a virus and a fungal infection are prevalent in herring populations among several age classes. Conditions which made herring susceptible to these two diseases (viral hemorrhagic septicemia and *Ichthyophonus hoferi* infection) are unknown, but it appears they have been impacting herring for over a decade. While these diseases can occur at background levels, they do not usually distress impact fish populations for such a long duration, and this cycle seems to be unique to the herring of Prince William Sound.

Comment [cwb17]: Change recommended by ADFG

Comment [c18]: Changes recommended by Herring Team

Lingering oil exists in the Sound; however there does not appear to be much overlap between current herring spawning areas and sites known to harbor residual oil. In 2006, some herring spawn was observed in areas of the Sound that were oiled however, the spatial extent was limited, and this was the first year in decades that it has been reported. Therefore, it is not likely that lingering oil is directly affecting spawning adults, eggs or larvae.

Low genetic diversity does not appear to be a limitation within herring populations. It was has been hypothesized suggested that historic overfishing coupled with the population crash of 1993 could have resulted in a population with low genetic diversity. Similar genetic structure could limit a population's

ability to tolerate disease or recover from acute losses, but the genetic diversity of Prince William Sound herring is no different from other northwest populations.

Other factors may have contributed to the crash of 1993. Some evidence implies that zooplankton production in the 1990's was less than in the 1980's, thereby causing food to be limited at the time of a peaking population. This hypothesis is offered some support by the fact that the average size-at-age of herring had been decreasing since the mid-1980s as population numbers were rising. Poor nutrition may also increase susceptibility of herring to disease.

Predation also plays a role in herring population dynamics, as they are a primary forage fish within the Prince William Sound ecosystem. It is plausible that the small herring population is fighting an on-going disease problem and is further being kept in check by predators such as whales, seals, sea lions and seabirds.

Despite the pressures of predation and disease, ADF&G biomass estimates/forecasts in 2010⁰⁹, 2011¹⁰ and 2012¹¹ exceeded the commercial fishing threshold of 22,000 tons. However, they did not provide a large enough harvestable surplus to allocate fish among all five herring fisheries: purse seine sac roe, gillnet sac roe, spawn-on-kelp not in pounds, spawn-on-kelp in pound fisheries, and herring food/bait fishery. Estimates/Hindcasts from the 2013 forecast model for 2011 and 2012, 2013, and 2014 were below the regulatory threshold with 2013 having the lowest mile-days of spawn in PWS since 1973.

Comment [c19]: Changes recommended by ADFG

Comment [cwb20]: Changes recommended by ADFG

A combination of factors, including disease, predation and poor recruitment appear to contribute to the continued suppression of herring populations in the Sound. No strongly successful year class has been recruited into the population and health indices suggest that herring in the Sound are not fit. However, the biomass has remained relatively stable over the past seven years but at a lower tonnage than can support a sustainable commercial fishery. **Pacific herring have not yet met their recovery objectives and are considered recovering from the effects of the Spill.**

PIGEON GUILLEMOTS

Injury

Although pigeon guillemots are widely distributed in the North Pacific region, they do not occur anywhere in large concentrations. An estimated 2,000 – 6,000 guillemots, representing 10–15 percent of the Spill area population, died from acute oiling. Additionally, an increase in nest predation of pigeon guillemot chicks and incubating adult birds occurred in the Sound after the Spill. Researchers speculated that immediately after the Spill, predators such as river otters and minks preyed more heavily on nesting guillemots due to heavy oiling and subsequent reduction of their customary shellfish prey.

Recovery Objective

Pigeon guillemots will have recovered when their population is stable. Sustained or increasing productivity within normal bounds will be an indication that recovery is underway.

Recovery Status

Pigeon guillemot populations were likely declining prior to the Spill and this decline has continued through 2008. The causes of the decline are unclear and the extent to which the Spill has been a factor has not been determined. From 1989 to 1991, pigeon guillemot abundance decreased more in oiled areas than in unoiled areas, and this accelerated decrease persisted in most years through 2001. Summer surveys along both oiled and unoiled shorelines of the Sound have indicated that numbers of guillemots

continued to decline through 2005. March surveys reveal no significant trends in abundance although the data appear to suggest a decline at this time of year as well.

In 1999, adult pigeon guillemots in the oiled areas were still being exposed to oil as indicated by elevation of a biochemical marker of exposure, cytochrome P450. No differences were found between P450 activity in chicks from oiled and unoiled sites. The difference in P450 activity between adults and chicks is probably due to the fact that pigeon guillemot chicks are fed primarily fish, while adults eat a combination of fish and invertebrates. Invertebrates are more likely to sequester petroleum compounds, whereas fish metabolize them. Data collected in 2004 indicated that there was no difference in P450 activity in adult pigeon guillemots collected in oiled and unoiled parts of the Sound.

Reduction in forage fish, specifically herring and sand lance, has been implicated in declines of pigeon guillemots. The extent to which the oil Spill resulted in the depletion of these species could indirectly injure guillemots and other seabirds by removing the food resources on which they depend. Other factors, such as predation and interactions with commercial fisheries, might be contributing to the negative population trend; however comprehensive studies including these variables have not been conducted.

The pigeon guillemot population continues to decline in both oiled and unoiled areas of Prince William Sound. Nest predation is a potential source of mortality that may be limiting recovery in some areas, implying that predator removals could prove an effective restoration option. More data on productivity levels is needed to determine if the recovery objective of increasing abundance and productivity has been met.

A project to determine if mink predation is a limiting factor in the nesting success of PIGU on the Naked Island complex began in 2014 and will continue through 2015.

Pigeon guillemots are considered to be not recovered from the effects of the Spill.

PINK SALMON

Injury

Up to 75 percent of wild pink salmon in Prince William Sound spawn in the intertidal portions of streams. Eggs deposited in gravel and developing embryos were chronically exposed to hydrocarbon contamination from the water column and from leaching oil deposits on adjacent beaches. When juvenile pink salmon migrate to saltwater, they spend several weeks foraging for food in nearshore habitats. Thus, juvenile salmon entering seawater from both wild and hatchery sources were likely exposed to oil as they swam through contaminated waters and fed along oiled beaches. Two primary types of injury impacted early life stages of pink salmon: 1) growth rates in both wild and hatchery-reared juvenile pink salmon from oiled parts of the Sound were reduced; and 2) increased embryo mortality was documented in oiled versus unoiled streams.

Recovery Objective

Pink salmon will have recovered when population indicators, such as juvenile growth and survival, are within normal bounds and when ongoing oil exposure, which may cause injury to pink salmon embryos (eggs), is negligible.

Recovery Status

In the years preceding the Spill, returns of wild pink salmon in Prince William Sound varied from a maximum of 23.5 million fish in 1984 to a minimum of 2.1 million in 1988. Many factors, such as the timing of spring plankton blooms and changes in water circulation patterns throughout the Gulf of Alaska are likely to have a great influence on year-to-year returns in both wild and hatchery stocks of pink salmon. Since the Spill, returns of wild pinks have varied from a high of about 12.7 million fish in 1990 to a low of about 1.9 million in 1992. In 2001 the return of wild stock fish was estimated to be 6.7 million fish.

The decade preceding the oil Spill was a time of peak productivity for pink salmon in the Sound. In 1991 and 1992, it appears that wild adult pink salmon returns to the Sound's Southwest District were reduced by 11 percent; however wild salmon returns are naturally highly variable. Furthermore, the methods used to estimate this decrease could not be used to produce reliable injury estimates across multiple generations of salmon. An analysis of escapement data from 1968-2001 did not show any differences in annual escapements between oiled and unoiled parts of the Sound. Therefore, population-level effects from the Spill did not impact wild pink salmon or were short-lived.

Sound-wide population levels appear to be within normal bounds. In addition, reduced juvenile growth rates in Prince William Sound occurred only in the 1989 season. Since then, juvenile growth rates have been within normal bounds.

Higher embryo mortality persisted in oiled streams when compared to unoiled streams through 1993: These differences were not detected from 1994 - 1996, but higher embryo mortality was again reported in 1997. It could not be determined if the reemergence of elevated embryo deaths was due to the effects of lingering oil (perhaps newly exposed by storm-related disturbance of adjacent beaches), or due to other natural factors (e.g., differences in the physical environment). Although patches of lingering oil still persist in or near intertidal spawning habitats in a few of the streams used by pink salmon in southwestern Prince William Sound, the amounts were considered negligible based on 1999 and 2001 studies. In 1999, dissolved oil was measured in six pink salmon streams that had been oiled in 1989. Only one of the six streams had detectable concentrations of oil, and they were about a thousand times lower than concentrations reported as toxic to developing pink salmon embryos.

Based on these results, continuing exposure of pink salmon embryos to lingering oil is negligible and unlikely to limit pink salmon populations. **Given the fact that pink salmon population levels and indicators such as juvenile growth and survival are within normal bounds, pink salmon were considered recovered from the effects of the oil Spill in 1999.**

RIVER OTTERS

Injury

River otters have a low population density in Prince William Sound. Twelve river otter carcasses were found following the Spill, but the actual total mortality is not known. Studies conducted during 1989-91 identified several differences between river otters in oiled and unoiled areas in the Sound, including biochemical alterations, reduced body size, and increased home-range size. The lack of comparable pre-Spill information precluded any effort to determine if these differences were the result of the oil Spill.

Recovery Objective

The river otter will have recovered when biochemical indicators of hydrocarbon exposure or other stresses and indices of habitat use are similar between oiled and unoiled areas of Prince William Sound, after taking into account any geographic differences.

Recovery Status

Although some of the differences (e.g., values of blood characteristics) between river otters in oiled and unoiled areas in Prince William Sound were apparent through 1996, they did not persist in 1997 and 1998.

In 1999, the Trustee Council considered river otters to be recovered, because the recovery objectives had been met and indications of possible lingering injury from the oil Spill were not present.

ROCKFISH

Injury

Dead rockfish were observed throughout the Sound immediately following the Spill, but an absolute count was never documented. Necropsies of five fish indicated that oil ingestion was the cause of death. Additionally, hydrocarbon concentrations in dead fish from oiled areas were higher than those from unoiled areas. Closures to salmon fisheries apparently caused increasing fishing pressure on rockfish, which may have adversely affected local populations.

Recovery Objective

Due to the continuing lack of data on rockfish, no recovery objective can be identified.

Recovery Status

From 1989–1991, higher petroleum hydrocarbon concentrations were measured in rockfish from oiled areas when compared to unoiled areas. Interpretation of these data is limited, however, because oil accumulation differs by species and by age of the fish, and these variables were not fixed across sites. Other Council-funded studies have been conducted on rockfish since the Spill, including 1) an examination of larval growth of fish, (including rockfish) in 1989; 2) a genetics investigation designed to identify species of rockfish larvae and young in the Gulf of Alaska and 3) a microscopic examination of fish tissues to identify lesions associated with oil exposure. These studies were inconclusive as none of them directly linked exposure of Exxon Valdez oil to any of the endpoints that were measured.

It is unlikely that rockfish are currently being exposed to lingering oil because known pockets of lingering oil rarely occur in their preferred habitat. Documented lingering bioavailable oil is in the subsurface sediments of the intertidal zone, and rockfish mostly occur in differing habitats of subtidal areas and in pelagic environments. From 1999–2000, no differences were measured in physiological responses to oil in rockfish from oiled and unoiled areas.

Rockfish are managed by the Alaska Department of Fish and Game for recreational fishing and the North Pacific Fisheries Management Council for commercial fishing in PWS. Data collected by both groups in the years since the Spill show that the population is healthy in Prince William Sound and have shown no biomarkers of oil exposure. There have been no demonstrated differences in population or breeding success between oiled and unoiled areas.

As there is no defined recovery objective, we used objectives set by other injured resources to determine the rockfish's recovery status. **As there is no difference in breeding success or population between oiled and unoiled areas and no evidence of ongoing exposure to lingering oil we consider rockfish to be recovered.**

SEA OTTERS

Injury

Sea otters were originally found throughout the north Pacific including Japan, Russia, the United States, Canada and Mexico. By the late 1800s, they had been eliminated from most of their range due to over-harvest by fur traders. Sea otters came under international protection in 1911 and since then, their numbers have rebounded. Today, sea otters can only be harvested for subsistence purposes. Surveys of sea otters in the 1970s and 1980s indicated a healthy and expanding population in most of Alaska, including Prince William Sound.

More than a thousand otters became coated with oil in the days following the Spill, and 871 carcasses were collected throughout the Spill area. Estimates of the total number of sea otters lost to acute mortality vary, but range as high as 40 percent (2,650) of the approximately 6,500 sea otters inhabiting the western areas of the Sound. In 1990 and 1991, higher than expected proportions of prime-age adult sea otters were found dead in western Prince William Sound (PWS). Higher mortality of recently weaned juveniles in oiled areas was documented through 1993. Continuing studies of mortality rates, based largely on sea otter carcass recoveries, suggest that relatively poor survival of otters in the oiled area persisted for well over a decade.

Recovery Objective

Sea otters will have recovered when the population in oiled areas returns to conditions that would have existed had the Spill not occurred and when biochemical indicators of hydrocarbon exposure in otters in the oiled areas are similar to those in otters in unoiled areas. An increasing population trend and normal reproduction and age structure in western Prince William Sound will indicate that recovery is underway.

Recovery Status

No apparent population growth occurred for Prince William Sound sea otters through 1991. After 1993, the population in the western Sound began increasing at a rate approximately one-half of the pre-Spill rate of increase. From 1993–2000, the number of otters increased by 600 animals which represents an annual growth rate of 4 percent. However, in areas that were heavily oiled, such as northern Knight Island, sea otter populations remained well below pre-Spill numbers, and population trends continued to decline through 2010. Moreover, the demographics within this group apparently were not stable as many of the females are below reproductive age and young, non-territorial males moved into and out of the population.

However, the aerial surveys in 2013 indicated that population abundance in Prince William Sound have converged in oiled and unoiled areas. The estimated number of sea otters more than doubled relative to the 1993 estimate and the increase over that time frame was greater to or similar to estimates of sea otters that died within the first years of the Spill. The 2013 surveys indicated that the sea otter population at heavily-oiled northern Knight Island, where abundance was depressed for two decades after the Spill, had finally reached pre-Spill levels.

Starting in 2011, there was a distinct change in the age-class proportions of dying sea otters, with a return to the pre-Spill pattern of predominantly young and older sea otters recovered as carcasses. This pattern continued in 2012 and 2013, which may be interpreted as evidence that from 2011 - 2013, chronic exposure to lingering oil and/or chronic effects due to previous exposure abated to the point where they are no longer factors constraining survival.

Overall, the current population level data for sea otters in PWS are consistent with the EVOSTC definition of recovery for sea otters from the long-term injury incurred in the wake of the 1989 oil Spill. The support for this is based primarily on demographic data, including (1) a return to estimated pre-Spill abundance of sea otters at northern Knight Island, a heavily-oiled area within PWS, and (2) a return to pre-Spill mortality patterns based on ages-at-death. Gene transcription rates in 2012 were similar in sea otters from oiled, moderately-oiled and unoiled areas, suggesting abatement of exposure effects in 2012. However, because 2012 gene transcription rates generally were low for sea otters from all areas relative to 2008, these observations cannot be fully interpreted without data from a wider panel of genes. This slight uncertainty with respect to the data from the biochemical indicator is outweighed by the strength of the data for the demographic indicators. The return to pre-Spill numbers and mortality patterns suggests a gradual dissipation of exposure to? lingering oil over the past two decades, to the point where continuing exposure is no longer of biological significance to the PWS sea otter population. **Therefore, sea otters are considered to be recovered.**

SEDIMENTS

Injury

The Exxon Valdez Spilled approximately 11 million gallons of crude oil into Prince William Sound, and much of this oil washed up on shores and was deposited in intertidal and subtidal zones of the Spill area. Intertidal shorelines captured approximately 40 – 45 percent of the oil, and up to 13 percent of the oil settled in subtidal habitats. Using a variety of methods, manual removal eliminated some of the oil from the intertidal zone early in the response phase, and within a few months of the Spill, 89 percent of the moderately to heavily oiled beaches had been treated. Cleanup activities also occurred in 1990 and 1991. According to Shoreline Cleanup Assessment Team (SCAT) surveys, by 1992, approximately 10 km of the original estimated 583 km beaches with surface oiling remained uncleaned. The SCAT surveys were focused on documenting surface oiling as a way to direct cleanup activities. Therefore, subsurface and subtidal oil was not as closely monitored.

Recovery Objective

Sediments will have recovered when there are no longer significant residues of Exxon Valdez oil on shorelines (both intertidal and subtidal) in the oil Spill area. Declining oil residues and diminishing toxicity are indications that recovery is underway.

Recovery Status

Approximately 10 acres of Exxon Valdez oil remains in surface sediments of Prince William Sound, primarily in the form of highly weathered, asphalt-like or tar deposits. In 2003, it was estimated that 20 acres of unweathered, lingering oil may still be present in subsurface, intertidal areas of the Sound, which could represent up to 100 tons of remaining oil. Most of this oil is found in protected, unexposed bays and beaches. Subsurface oil was not subjected to the original cleanup activities, and because this oil is trapped beneath a matrix of cobbles, gravel and finer sediments, it is not easily exposed to natural weathering processes.

The most recent studies examining the extent of subsurface shoreline oiling in PWS and the Gulf of Alaska included selection of sites that had any level of initial oiling for field surveys. Known field data were combined with modeling to estimate the extent of oiled shoreline at that point. An earlier estimate of the amount of oil remaining was that 200 tons of oil might still exist. Given the slow loss rate of subsurface oiling that estimate may still be reasonable.

Comment [c21]: Changes recommended by USGS

~~The most recent studies documenting residual oil occurred on those beaches that were considered heavily or moderately oiled in 1989. Beaches reported as lightly oiled were not surveyed. Moreover, beaches outside of the Sound were not included, so the amount and extent of residual oil in the entire Spill zone is not known, but one estimate suggests as much as 200 tons of oil may still exist. Several studies have evaluated the extent of lingering oil on armored oiled beaches along the outer Kenai Peninsula coast, the Alaska Peninsula, and Kodiak Archipelago. These studies looked at the same sites repeatedly at intervals from 1992–2012. By 1995, little visible oiling was observed in the study area on Kodiak. Overall, by 1995, hydrocarbon concentrations in sediments at the Gulf of Alaska sites were generally lower than for sites in Prince William Sound, but at some locations substantial concentrations persisted. Through 2005, surface oil was not frequently observed in these areas, and subsurface oil was present as mostly unweathered mousse.~~

In 1989, chemical analysis of oil in subtidal sediments was conducted at a small number of index sites in Prince William Sound. In the subtidal areas, petroleum hydrocarbon concentrations were highest at depths of 1–60 feet (below mean low water) and diminished out to depths of 300 feet. It is likely that oil in subtidal sediments have decreased substantially since the Spill. In 2001, several sites that were sampled after the Spill were re-visited, and no oil was found in the subtidal sediment from these locations.

Twenty-five years after the Spill, lingering oil persists in the intertidal zones of Prince William Sound and on northwest shorelines of the Spill area. The presence of subsurface oil continues to compromise wilderness and recreational values, expose and potentially harm living organisms, and offend visitors and residents, especially those who engage in subsistence activities along still-oiled shorelines. Although much of the oil has diminished over time, pockets of unweathered oil exist, and natural degradation of this oil is very slow.

Therefore, sediments are still considered to be recovering.

SOCKEYE SALMON

Injury

Commercial salmon fishing was closed in Prince William Sound and in portions of Cook Inlet and near Kodiak in 1989 to avoid the possibility of contaminated salmon being sold at market. As a result, there were higher-than-desirable numbers (i.e., “overescapement”) of spawning sockeye salmon entering the Kenai River and Red and Akalura lakes on Kodiak Island. Initially, these high escapements produced an overabundance of juvenile sockeye that overgrazed the zooplankton, and altered planktonic food webs in the nursery lakes. As a result, growth rates were reduced during the freshwater stage of the salmon’s life cycle, which led to a decline in returns of spawning adults. The net result was an initial loss of sockeye production.

Recovery Objective

Sockeye salmon in the Kenai River system and Red and Akalura lakes will have recovered when adult returns-per-spawner are within normal bounds.

Recovery Status

Although sockeye freshwater growth tends to return to normal within two or three years following an overescapement event, there are indications that the populations are less stable for several years. The overescapement following the Spill resulted in lower sockeye productivity, (as measured by return per spawner) in the Kenai River watershed from 1989–92. However, production of zooplankton in both Red and Akalura lakes on Kodiak Island quickly rebounded from the initial effects overgrazing. By 1997, Red Lake had responded favorably in terms of smolt and adult production and was at or near pre-Spill production of adult sockeye. At Akalura Lake there were low juvenile growth rates in freshwater during the period 1989–92, and these years of low growth correspond to low adult escapements during the period 1994–97. Starting in 1993, however, the production of smolts per adult increased sharply and the smolt sizes and age composition suggested that rearing conditions had improved. It is possible that overescapement also affected lakes on Afognak Island and on the Alaska Peninsula. However, analysis of sockeye freshwater growth rates of juveniles from Chignik Lake on the Alaska Peninsula did not identify any impacts associated with a 1989 overescapement event. On the basis of catch data through 2001 and in view of recent analyses of return per spawner estimates presented to the Alaska Board of Fisheries in 2001, the return-per-spawner in the Kenai River system is within historical bounds. Therefore, it is highly unlikely that the effects that reverberated from the overescapements in 1989 continue to affect sockeye salmon.

In 2002, this species was considered to be recovered from the effects of the oil Spill.

SUBTIDAL COMMUNITIES

Injury

Subtidal habitats encompass all of the seafloor below the mean lower low water tide line to about 800 meters, although deeper habitats are often referred to as the deep benthos. For purposes of this List and evaluating oil Spill effects, the impacted subtidal zone generally ranges from the lower intertidal zone to a depth of about 20 meters. Communities in the near subtidal areas are typically characterized by dense stands of kelp or eelgrass and comprise various invertebrate species, such as amphipods, polychaete worms, snails, clams, sea urchins and crabs. Subtidal habitats provide shelter and food for an array of nearshore fishes, birds, and marine mammals.

It is estimated that up to 13 percent of the oil that was Spilled deposited in the subtidal zones. The direct toxicity of the oil, as well as subsequent cleanup activities caused changes in the abundance and species composition of plant and animal populations below lower tides. Initial injuries were evident for several oil-sensitive species. Infaunal amphipods, a prominent prey species in subtidal communities, were consistently less abundant at oiled than at unoiled sites. Reduced numbers of eelgrass shoots and flowers were also documented and may have resulted from increased turbidity associated with cleanup activities. Two species of sea stars and helmet crabs also were less abundant at oiled sites when compared to oiled areas. However, stress tolerant organisms, including polychaete worms, snails and mussels were more abundant at oiled sites. It has been suggested that these species may have benefited from organic enrichment of the area from the oil or from reduced competition or predation because other, more sensitive species were depleted.

Recovery Objective

Subtidal communities will have recovered when community composition in oiled areas, especially in association with eelgrass beds, is similar to that in unoiled areas or consistent with natural differences between sites such as proportions of mud and sand, and that the subtidal community and sediments found within are no longer contaminated by lingering oil.

Recovery Status

Invertebrate assemblages within eelgrass beds and adjacent areas of soft sediment, were compared at oiled and unoiled sites from 1990–1995. It was hypothesized that reduction in eelgrass and kelp could alter the habitat structure of subtidal communities and continue to impact resident species because food and shelter resources were removed from the environment. By 1995, some benthic species within eelgrass habitats of the oiled areas had recovered. However, important species such as amphipods, certain bivalves, crabs and sea stars were not as abundant at oiled sites as they were in unoiled areas. It was difficult to interpret the findings of these studies, because it was not possible to distinguish between natural conditions and differences in habitat characteristics caused by the Spill or subsequent cleanup activities.

More recently, a census of marine life throughout the Gulf of Alaska measured biodiversity indices of plants and animals in the intertidal and shallow subtidal zones. Measurements of species abundance, richness and evenness were compared among areas in Prince William Sound, Kodiak Island and Kachemak Bay. Generally, community structure was significantly different between intertidal and subtidal areas with intertidal communities comprising more species and being more variable than subtidal communities. However, direct comparisons between oiled and unoiled sites were not evaluated for each community, and comparisons in these communities at a smaller scale are not known.

Concentrations of oil in subtidal areas declined by 1995, but were still slightly elevated over unoiled sites. In 2001, at a few random sites adjacent to heavily or moderately oiled intertidal areas, little or no oil was found in the subtidal sediments. However, a systematic sampling of sediments from subtidal areas in the entire Spill zone has not been conducted.

In the early 1990's, several benthic organisms using the subtidal zones showed trends towards recovery, and hydrocarbon concentrations had declined in many areas. However, consistent, systematic surveys have not been conducted for many species. Given the length of time since evidence of injury was last documented, the lack of subtidal oil for many years, and the resiliency and short generation times for the species that had shown lower populations in the oiled areas, it seems likely that recovery has occurred.

Subtidal communities are very likely recovered. In addition, further study, with sufficient effort and scope to achieve powerful tests of the impacts of lingering oil, would be relatively expensive and unlikely to definitively demonstrate an effect of the oil Spill on this resource.

HUMAN SERVICES

COMMERCIAL FISHING

Injury

Commercial fishing was injured as a result of the Spill's direct impacts to commercial fish species (see individual resource accounts) and through subsequent emergency fishing closures. Fisheries for salmon, herring, crab, shrimp, rockfish and sablefish were closed in 1989 throughout Prince William Sound,

Cook Inlet, the outer Kenai coast, Kodiak and the Alaska Peninsula. Shrimp and salmon commercial fisheries remained closed in parts of Prince William Sound through 1990.

Recovery Objective

Commercial fishing will have recovered when the commercially important fish species have recovered and opportunities to catch these species are not lost or reduced because of the effects of the oil Spill.

Recovery Status

In the 1994 Restoration Plan, the Trustee Council specifically recognized the declines in pink salmon and Pacific herring populations, and considered the reduction in these two fisheries as the biggest contributors to injury of the commercial fishing service in the Spill area. Therefore, many restoration activities were focused towards these resources. The strategy for restoring commercial fishing included funding projects that accelerated fish population recovery, protected and purchased important habitat and monitored recovery progress. By 2002, the Trustee Council considered pink salmon and sockeye salmon to be recovered from the oil Spill. However, recovery was not considered complete for Pacific herring and the recovery status of this resource remains 'Not recovering' (see individual resource accounts).

Income from commercial fishing dramatically declined immediately after the Spill, and for a variety of reasons, disruptions to income from commercial fishing continue today, as evidenced by changes in average earnings, ex-vessel prices and limited entry permit values. Natural variability in fish returns and a number of economic changes in the commercial fishing industry since 1989 probably mean that many of these changes in income are not directly attributable to the Spill. However, these factors also make discerning Spill-related impacts difficult. Economic changes confronting the industry include the increased world supply of salmon (due primarily to farmed salmonids) and corresponding reduced prices, entry restrictions in certain fisheries (such as Individual Fishing Quotas, for halibut and sablefish), allocation changes (e.g., a reduction in the allocation of Cook Inlet sockeye salmon to commercial fishermen), reduction in processing capacity, and spatial limitations of groundfish fisheries in the Spill areas in conjunction with sea lion management. Finally, competition among commercial, recreational, and subsistence fishers influence management decisions of these shared resources.

Since 1989, there have been no non-herring, Spill-related, district-wide fishery closures related to oil contamination, and populations of pink and sockeye salmon are considered recovered from the effects of the Spill. The Prince William Sound herring fishery has been closed for 19 of the 25 years since the Spill and herring are still considered to be recovering.

Commercial fishing, as a lost or reduced service, is considered to be recovering from the effects of the oil Spill.

PASSIVE USE

Injury

Passive use is the service provided by natural resources to people that will likely not visit, contact, or otherwise use the resource. Thus, injuries to passive use are tied to public perceptions of injured resources. Passive use is the appreciation of the aesthetic and intrinsic values of undisturbed areas and the value derived from simply knowing that a resource exists. The oil Spill occurred in what many Americans viewed as an undisturbed area and caused visible injury to shorelines, fish and wildlife. The loss to passive use following the oil Spill was estimated by the State of Alaska at \$2.8 billion. Using a

contingent valuation approach, this was the median value that those surveyed were willing to pay to prevent a catastrophe similar to the Exxon Valdez Oil Spill from happening again.

Recovery Objective

Passive use will have recovered when people perceive that aesthetic and intrinsic values associated with the Spill area are no longer diminished by the oil Spill.

Recovery Status

The Trustee Council determined that passive use injuries occurred as a result of the oil Spill because natural resources including scenic shorelines, wilderness areas, and popular wildlife species, from which passive uses are derived, were injured. The key to the recovery of passive use is providing the public with current information on the status of injured resources and the progress made towards their recovery.

Two vital components of the Trustee Council's restoration effort are the research, monitoring, and general restoration program and the habitat protection and acquisition program. Extensive work has been done to restore and monitor resources and communicate these findings to the public. The research, monitoring, and general restoration program is funded each year through the annual work plan, which documents the projects that are currently funded to implement restoration activities for injured resources and services. This includes two long-term monitoring programs. The habitat protection program preserves habitat important to injured resources through the acquisition of land or interests in land. As of 2006, the Council has protected more than 630,000 acres of habitat, including more than 1,400 miles of coastline and over 300 streams valuable for salmon spawning and rearing.

Other public information efforts in which the Council is currently engaged follows:

- The Trustee Council's website (www.evostc.state.ak.us) offers detailed information regarding past, current, and future restoration efforts
- The Trustee Council prepares a number of documents for distribution to the public including:
- An Invitation for Proposals, issued at five-year intervals, which solicits restoration project ideas from the scientific community and the public for the Council's restoration activities, including two long-term monitoring programs,
- The Annual Work Plan (described above),
- Updates to the Restoration Plan (1996, 1999, 2002, & 2006) which periodically provides new information on the recovery status of injured resources and services.
- Project final reports are available to the public at the Trustee Council's website, through the Alaska Resource Library and Information Services (ARLIS) in Anchorage as well as at several other libraries in the State, at the Library of Congress, and through NTIS (National Technical Information Service). In addition, the Council supports researchers in publishing their project results in peer-reviewed scientific literature, which expands their audience well beyond Alaska.
- Public Input: The Public Advisory Committee (PAC) is an important means of keeping stakeholders and others informed of the progress of restoration and providing the public's opinions to the Trustee Council as they make decisions.

Until the public no longer perceives that lingering oil is adversely affecting the aesthetics and intrinsic value of the Spill area it cannot be considered recovered.

Because recovery of a number of injured resources is incomplete, the Trustee Council considers services related to passive use to be recovering from the effects of the Spill.

RECREATION AND TOURISM

Injury

Recreation and tourism in the Spill area dramatically declined in 1989 in Prince William Sound, Cook Inlet and the Kenai Peninsula. Injuries to natural resources led resource managers to limit access to hunting and fishing areas, and users such as kayakers were prevented from enjoying those beaches that harbored visible oil. Recreation was also affected by changes in human use in response to the Spill, because areas that were unoiled become more heavily used as activity was displaced from the oiled areas.

Recovery Objective

Recreation and tourism will have recovered, in large part, when the fish and wildlife resources on which they depend have recovered, and recreational use of oiled beaches is no longer impaired.

Recovery Status

Recreation and tourism accounted for 26,000 jobs, generated \$2.4 billion in gross sales and contributed \$1.5 billion to Alaska's economy in 2003. The number of visitors to Alaska has increased in the years since the Spill and it is expected that the recreation and tourism industry in south-central Alaska will grow approximately 28 percent per year through 2020. By 2001, over \$10 million had been spent on repair and restoration of recreational facilities in the Spill area, and damage caused by the Spill or cleanup efforts at the Green Island cabin and Fleming Spit campsites were repaired.

Telephone interviews conducted in 1999 and 2002 of people who used the Spill area for recreation before and after the Spill, indicated that, although oil remained on beaches, it did not deter them from using the area. However, they continued to report diminished wildlife sightings in Prince William Sound, particularly in heavily oiled areas such as around Knight Island. They also reported seeing fewer seabirds, killer whales, sea lions, seals, and sea otters than were generally sighted before the Spill, but also reported observing increases in the number of seabirds over the last several years. Key informants with experience along the outer Kenai coast reported diminished sightings of seabirds, seals, and sea lions. However, they indicated that the possible presence of residual oil has no effect on recreational activities along the outer Kenai coast, the Kodiak Archipelago, and the Lake Clark and Katmai national park coastlines. Changes in the amount of wildlife observed could be due to a variety of factors, including the Spill.

Recreation and tourism rely on both consumptive and non-consumptive uses of natural resources. Although these activities have increased since the Spill, several resources have not yet recovered from the Spill and beaches used for recreation contain lingering oil. Resources that are important to recreation and tourism, but are still not considered recovered from the Spill or their recovery is unknown include Kittlitz's and marbled murrelets, pigeon guillemots, and killer whales. Sport fishing resources that affected recreation and tourism are now either very likely recovered (cutthroat trout) or recovered (rockfish and pink and sockeye salmon).

Even though visitation has increased since the oil Spill, the Trustee Council's recovery objective requires that the injured resources important to recreation be recovered and recreational use of oiled beaches not be impaired. Lingering oil remains on beaches and in some localized areas this remains a concern for users. Moreover, some of the natural resources upon which recreation and tourism rely have not recovered from the effects of the Spill.

Therefore, the Trustee Council finds recreation and tourism to be recovering from the effects of the Spill, but not yet recovered.

SUBSISTENCE

Injury

Fifteen predominantly Alaskan Native communities (with a total population of about 2,200 people) in the oil Spill area rely heavily on harvests of subsistence resources, such as fish, shellfish, seals, deer, and waterfowl. Oil from the Spill disrupted subsistence activities for the people of these villages and approximately 13,000 other subsistence permit holders in the area. Oil affected the subsistence harvests through a variety of mechanisms including reduced availability of fish and wildlife due to injury, concern about possible health effects of eating oiled fish and wildlife, and disruption of the traditional lifestyle due to cleanup and related activities.

Recovery Objective

Subsistence will have recovered when injured resources used for subsistence are healthy and productive and exist at sustainable levels. In addition, there is recognition that people must be confident that the resources are safe to eat and that the cultural values provided by gathering, preparing, and sharing food need to be re-integrated into community life.

Recovery Status

After the Spill, subsistence harvest declined between 9–77 percent in 10 villages within Prince William Sound, Cook Inlet and Kodiak. Villages in Tatitlek and Chenega reduced their harvest by 56 and 57 percent, respectively. Outside of the Sound, harvest declined in Akhiok (on the lee side of Kodiak Island) by nine percent, but by 77 percent in Ouzinkie, which is on the northern side of the island. The primary reason that harvest declined so dramatically was the fear that oil had contaminated the resources and made them unfit to eat.

Harvest levels have generally increased in many communities since the Spill, but results of harvest surveys have been variable. By 2003, they were generally higher than pre-Spill levels in the communities in Cook Inlet, but lower in Kodiak and Prince William Sound (except for Cordova). Even though the harvest levels in the PWS communities were not as high as pre-Spill estimates, they were within the range of other Alaska rural communities. Harvest composition was also altered by the Spill. In the first few years following the Spill, people harvested more fish and shellfish than marine mammals because of the reduced number of marine mammals and the perception that these resources were contaminated and unsafe to eat.

Both safety concerns and the reduced availability of shellfish contributed to a decline in harvest levels. From 1989–94, subsistence foods were tested for evidence of hydrocarbon contamination, with no or very low concentrations of petroleum hydrocarbons found in most subsistence foods. However, concerns about oil contamination remained, and there was a belief that the increase in paralytic shellfish poisoning (PSP) was linked with Exxon Valdez oil. By 2006, most subsistence users expressed confidence in foods such as seals, finfish and chitons. However, the safety of certain shellfish, such as clams was still met with skepticism.

Subsistence use is a central way of life for many of the communities affected by the Spill, thus the value of subsistence cannot be measured by harvest levels alone. The subsistence lifestyle encompasses a cultural value of traditional and customary use of natural resources. Following the oil Spill, there was

concern that the Spill disrupted opportunities for young people to learn cultural subsistence practices and techniques, and that this knowledge may be lost to them in the future. In a 2004 survey of the Spill area communities, 83 percent of respondents stated that their “traditional way of life” had been injured by the oil Spill and 74 percent stated that recovery had not occurred.

Many factors may contribute to the changes observed in subsistence harvests and the lifestyle surrounding this tradition. Demographic changes in village populations, ocean warming, increased competition for subsistence resources by other people (e.g., sport fishing charters), predators (e.g., sea otters), and increased awareness of PSP and other contaminants may play a role in resource availability, food safety, and participation in traditional practices.

Fears about food safety have diminished since the Spill, but it is still a concern for some users. Additionally, harvest levels from villages in the Spill area are comparable to other Alaskan communities.

For these reasons, subsistence is considered to be recovering from the effects of the oil Spill.

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Exxon Valdez Oil Spill Trustee Council



DRAFT Work Plan for
Fiscal Year 2015

Issued October 20, 2014



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Draft 10-20-14

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Notice

The abstract of each proposal was written by the authors of the proposals to describe their projects. To the extent that the abstracts express opinions about the status of injured resources they do not represent the views of the Executive Director or other staff of the *Exxon Valdez* Oil Spill Trustee Council, nor do they reflect policies or positions of the Trustee Council.

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- Office of Equal Opportunity, U.S. Department of the Interior, Washington DC 20240.

PLEASE COMMENT

You can help the Trustee Council by reviewing this draft work plan and letting us know your priorities for the Fiscal Year. You can comment by:

Mail: 4210 University Drive
Anchorage, AK 99508-4650
Attn: Draft Fiscal Year 2015 Work Plan

Telephone: 1-800-478-7745
Collect calls will be accepted from fishers and boaters who call through the marine operator.

Fax: 907-276-7178 or 907-279-8012

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FY15 Proposal Funding Recommendations

The funding described in this document is approximate, for funding amounts authorized by the Council, please see the Annual Funding Overview (AFO) for the appropriate fiscal year. The AFO is posted on the EVOSTC website after the fall Council meeting.

Page Number	Project Number	Principal Investigator	Project Title	FY15 Requested	Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
6	15120100	EVOS Admin	EVOS Administration	\$2,319,025	Not Reviewed	Not Reviewed	Fund	N/A	
7	15100853	Irons	Pigeon Guillemot Restoration Program	\$391,206	Fund	Fund	Fund	Fund	
11	15120116	Pallister	Marine Debris Removal Program	\$310,650	Fund	Fund	Fund	Fund	
15	15150121	Michel	Lingering Oil in PWS Update	\$114,570	Fund	Fund	Fund	Fund	
17	15150122	Fall	Subsistence Survey Update	\$281,969	Not Reviewed	Not Reviewed	Fund	Fund	
20	15120114	McCammon	EVOSTC Long-Term Monitoring Program Projects (GulfWatch Alaska)	\$2,803,400	Fund	Fund	Fund	Fund	
73	15150114-T	Bochenek	LTM Program - Supplemental Data Management Support	\$174,200	Fund Reduced	Fund Reduced	Fund Reduced	Fund Reduced	
76	15120111	Pegau	PWS Herring Program - Coordination and Logistics	\$1,365,678	Fund	Fund	Fund	Fund	
121	15120112	Jennings	NOAA Harbor Protection – Project Management	\$10,519	Fund Reduced	Fund Reduced	Fund Reduced	Fund Reduced	
125	15120112-A	Patton	NOAA Harbor Protection – Cordova Clean Harbor	\$72,996	Fund	Fund	Fund	Fund	
129	15120112-B	Carpenter	NOAA Harbor Protection – Cordova Snow Management	\$141,315	Fund	Fund	Fund	Fund	
TOTALS				\$7,985,528					

EVOSTC Long-Term Monitoring Program Projects (GulfWatch Alaska)

The funding described in this document is approximate, for funding amounts authorized by the Council, please see the Annual Funding Overview (AFO) for the appropriate fiscal year. The AFO is posted on the EVOSTC website after the fall Council meeting.

****The total for these projects can be found above under 15120114-McCammon***

Page Number	Project Number	Principal Investigator	Project Title	FY15 Requested	Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
65	15120114R	Ballachey	LTM Program - Nearshore benthic systems in the Gulf of AK	\$309,560	Fund	Fund	Fund	Fund	
28	15120114A	Batten	LTM Program - Continuous Plankton Recorders	\$70,700	Fund	Fund	Fund	Fund	
33	15120114C	Bishop	LTM Program - Seabird Abundance in Fall and Winter	\$83,400	Fund	Fund	Fund	Fund	
35	15120114D	Bochenek	LTM Program - Data Management	\$163,900	Fund	Fund	Fund	Fund	
39	15120114E	Campbell	LTM Program - Oceanographic Conditions in PWS	\$203,700	Fund	Fund	Fund	Fund	
67	15120114S	Carls	LTM Program - Oil Level and Weathering Tracking	\$169,200	Fund	Fund	Fund	Fund	
42	15120114G	Doroff	LTM Program - Oceanographic Monitoring in Cook Inlet/Kachemak Bay	\$133,700	Fund	Fund	Fund	Fund	
30	15120114B	Hoffman	LTM Program - Coordination and Logistics	\$293,400	Fund	Fund	Fund	Fund	
45	15120114H	Holderied	LTM Program - Science Coordination and Synthesis	\$146,100	Fund	Fund	Fund	Fund	
47	15120114I	Hollmen	LTM Program - Conceptual Ecological Modeling	\$78,600	Fund	Fund	Fund	Fund	
50	15120114J	Hopcroft	LTM Program - Seward Line Monitoring	\$104,000	Fund	Fund	Fund	Fund	
69	15120120	Jones	LTM Program - Data Management and Synthesis	\$379,200	Fund	Fund	Fund	Fund	

Page Number	Project Number	Principal Investigator	Project Title	FY15 Requested	Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
55	15120114L	Konar	LTM Program - Ecological Communities in Kachemak Bay	\$48,100	Fund	Fund	Fund	Fund	
52	15120114K	Kuletz	LTM Program - PWS Marine Bird Surveys	\$24,200	Fund	Fund	Fund	Fund	
57	15120114M	Matkin	LTM Program -Long-term killer whale monitoring	\$132,300	Fund	Fund	Fund	Fund	
59	15120114N	Moran	LTM Program - Humpback Whale Predation on Herring	\$141,600	Fund	Fund	Fund	Fund	
61	15120114O	Platt	LTM Program - Forage Fish Distribution, Abundance, and Body Condition	\$202,400	Fund	Fund	Fund	Fund	
63	15120114P	Weingartner	LTM Program - GAK1 Monitoring	\$119,000	Fund	Fund	Fund	Fund	

EVOSTC Long-Term Herring Monitoring and Research Program Projects

The funding described in this document is approximate, for funding amounts authorized by the Council, please see the Annual Funding Overview (AFO) for the appropriate fiscal year. The AFO is posted on the EVOSTC website after the fall Council meeting.

**The total for these projects can be found above under 15120111-Pegau*

Page Number	Project Number	Principal Investigator	Project Title	FY15 Requested	Science Panel	Science Coord	PAC	Executive Director	Trustee Council
86	15120111A	Bishop	PWS Herring Program - Validation of Acoustic Surveys	\$141,046	Fund	Fund	Fund	Fund	
89	15120111C	Bochenek	PWS Herring Program - Data Management Support	\$23,217	Fund	Fund	Fund	Fund	
114	15120111Q	Branch	PWS Herring Program - Population Dynamics Modeling	\$100,407	Fund	Fund	Fund	Fund	
94	15120111E	Buckhorn	PWS Herring Program - Expanded Herring Surveys	\$90,579	Fund	Fund	Fund	Fund	
97	15120111F	Buckhorn	PWS Herring Program - Juvenile Herring Abundance Index	\$84,911	Fund	Fund	Fund	Fund	
99	15120111G	Buckhorn	PWS Herring Program - Intensive Surveys of Juv	\$6,758	Fund	Fund	Fund	Fund	
105	15120111K	Hershberger	PWS Herring Program - Herring Disease Program	\$291,902	Fund	Fund	Fund	Fund	
112	15120111P	Guyon	PWS Herring Program - Herring Genetics	\$53,083	Fund	Fund	Fund	Fund	
107	15120111L	Gorman	PWS Herring Program - Herring Condition Monitoring	\$251,572	Fund	Fund	Fund	Fund	
102	15120111H	Hoover	PWS Herring Program - Outreach & Education	\$35,970	Fund	Fund	Fund	Fund	
110	15120111O	Pegau	PWS Herring Program - Coordination and Logistics	\$339,007	Fund	Fund	Fund	Fund	
118	15120111R	Pegau	PWS Herring Program - Aerial Surveys	\$70,850	Fund	Fund	Fund	Fund	

Non-EVOSTC Program Proposals & Project Amendments

Draft 10-20-14

Project Number: 15120100

Project Title: EVOSTC Administrative Budget

Primary Investigator(s): Elise Hsieh, EVOSTC Executive Director
Linda Kilbourne, EVOSTC Administrative Manager

PI Affiliation: N/A

Project Manager: ADFG

EVOSTC Funding Requested:

FY15	Fiscal Year Total
\$2,319,025	\$2,319,025

Abstract:

The budget structure is designed to provide a clearly identifiable allocation of the funds supporting Trustee Council activities. The program components are:

- Administration Management
- Data Management
- Science Program
- Public Advisory Committee (PAC)
- Habitat Protection Program
- Trustee Council Member Expenses
- Trustee Agency Support/Project Management
- Alaska Resources Library & Information Services (ARLIS)

The budget estimates detailed within those specified program components are projected based upon prior year actual expenditures and include the application of estimated merit step increases, as well as payroll benefits increases. Detailed 12-month budget component items cover necessary day-to-day operational costs of the *Exxon Valdez* Oil Spill Restoration Office and administrative costs associated with overseeing current Trustee Council program objectives.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Not Reviewed	Not Reviewed	Fund	N/A	

Project Number: 15100853

Project Title: Pigeon Guillemot Restoration Research in Prince William Sound

Primary Investigator(s): David Irons

PI Affiliation: USFWS

Project Manager: USFWS

EVOSTC Funding Authorized To Date: \$1,327,356

FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14
\$317,000	\$284,300	\$48,400	\$0	\$281,000	\$0	\$0	\$396,656

Additional EVOSTC Funding Requested: \$809,896

FY15	FY16	FY17	FY18
\$391,206	\$154,015	\$139,968	\$124,708

Requests include 9% GA.

Total EVOSTC Funding (Authorized and Requested): \$2,137,252

Funding From Non-EVOSTC Sources:

FY14	FY15	FY16	FY17	FY18	Total Non-EVOSTC Funding
\$391,280	\$ 371,280	\$ 317,580	\$313,580	\$312,580	\$1,716,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project provides an opportunity to restore the population of Pigeon Guillemots (*Cephus columba*) in Prince William Sound, Alaska, which has fallen by more than 90% at the Naked Island Group since 1989. A restoration plan for Pigeon Guillemots in PWS was prepared to address the species' lack of population recovery following injury by the 1989 Exxon Valdez oil spill. Predation on nests and adults by mink is now the primary limiting factor for guillemot reproductive success and population recovery at the most important historical nesting site for guillemots in PWS (i.e., the Naked Island group). Mink on the Naked Island group are descended in part from fur farm stock and arrived on the island group during the 1980s. The goal of the project is to remove all mink from the Pigeon Guillemot nesting areas and allow for recovery to occur. We trapped for the first time in the winter and spring of 2014. Seventy-six mink were killed. It is unknown how many were left, but one trapper suspected 20-30 might have been left. But the females likely produced more young this summer. We expect it will take 2 to 3 trapping seasons to remove all mink from the nesting areas. This summer we counted 74 pigeon guillemots, up from 53 last year, but control islands also had a similar increase. We did not expect to see an increase in birds the first year. We surveyed active nests and found 11, down from 17 in 2008, which was expected. This winter and spring we will trap again.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15

Date: September 2014

The Panel notes that the proposal is strong and well written and provides a level of detail that allows for constructive review. We do note the high cost of the mink trapping effort in relation to the number culled in FY14. We are concerned about the effectiveness of the project and its ability to achieve its goals in the long term given that eradication of mink will not be allowed.

Science Coordinator, PAC, Executive Director Comments – FY15

Date: September and October 2014

We concur with the Science Panel

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund Contingent	Not Reviewed	Fund	Fund

Science Panel Comments – FY14

Date: September 2013

The panel recommends funding of this proposal. The panel notes that the proposal is strong and well-written and provides a level of detail that allows for constructive review. The panel does acknowledge that culling could be a temporary or on-going solution and a “money sink,” if continued into future years and that it is a substantial commitment to fund and monitor over time. However, it is active restoration, which is rare among submitted proposals, and it is an interesting scientific experiment.

Science Coordinator Comments – FY14

Date: September 2013

I concur with the science panel regarding the scientific merit of the proposal. I also echo the concerns of the Panel: this is likely a temporary solution and a full cull would be needed to increase the population by the numbers cited in the proposal. Dr. Irons stated in his final report for Phase 1 of this project (Page 12):

“ because even a single mink can devastate a guillemot colony (US Fish and Wildlife, unpubl data), culling is unlikely to significantly reduce the level of guillemot nest predation or facilitate population recovery ”

Has something changed since the report was accepted that a limited cull would now be considered useful?

I also have several questions regarding the design of the project including: If the number of birds increases, are there any plans to determine if the increase was from the predator removal or other factors? The plan includes monitoring the population on Smith Island as a control which is currently mink-free. However, there is no monitoring plan discussed in the proposal. Will Smith Island be surveyed at the same time and frequency as Naked Island? The proposal states that ADFG is only willing to consider a limited cull at this time. If a complete removal is found to be necessary, would a permit to complete this work be possible or denied due to the mixed genetic stock of the mink on the Island?

At this time, I feel that the Council should postpone a funding decision until a final Environmental Assessment is provided by the PI and the question above regarding the limited cull is answered.

Public Advisory Committee – FY14

Date: October 2013

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Executive Director Comments – FY14

Date: September 2013

I concur with the Science Panel and support the concerns of the Science Coordinator. Due to the prospect of matching funds if this proposal is funded at this time and the opportunity for active restoration, I recommend funding, conditioned upon completion of the EA to the satisfaction of EVOSTC Executive Director and the coordinating agencies (USFWS, APHIS, ADFG, USFS).

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	No consensus	No comments	No consensus

Science Panel Comments – FY12

Date: June 2011

This proposal has been previously submitted to the EVOS Trustee Council and reviewed by the Science Panel. Support for the work was strong among the Science Panel members. One concern that arose pertained to the question of whether the mink found today on Naked and nearby Islands in the Naked group are descendants of the animals introduced artificially or whether these are fully native mink with an intact natural genome. That question has now been answered with DNA analysis revealing a mixed genome, not reflecting a pure native stock. This answer would appear to satisfy the question of whether these mink are natural (no) and to allow the extermination to move forward, if supportable scientifically by the Science Panel and Trustee staff and if politically and financially acceptable to the Trustee Council.

Here we will provide a review of the adequacy of the science. First, it is noteworthy that PIGUs are the only bird species still listed as Not Recovering after EVOS. Second, the importance of Naked Island and its potential recovery to this species is evident – the Naked Island group held about 25% of the PIGU population in PWS prior to the spill despite representing only 2 % of the PWS shoreline. Third, the inference that mink represent the impediment to PIGU recovery on Naked is strong, based especially on comparison Smith Island where mink are absent and PIGU survival is good. Fourth, the contention that strong recovery of PIGUs on Naked would lead to spread and re-colonization of other suitable sites in PWS is a reasonable expectation, so restoration on Naked pays a wider dividend of recovery elsewhere in PWS. Fifth, we know that the introduced foxes are now gone from Naked so that isn't the problem. Sixth, the alternatives analysis is compelling in showing that no other restoration option would work and that eradication is the only solution. For example, providing more of the now reduced lipid-rich prey would be useless, resulting in feeding mink better not in enhancing PIGU survival and abundance. Culling would be a half-step and require costly intervention forever, and thus can be rejected as a viable restoration option. Seventh, elimination of predatory mammals on islands is a well-established practice to enhance ground-nesting seabirds and other birds. Consequently, this proposal makes good sense scientifically and addresses an ongoing restoration failure of importance. The only questions involve the costs and the potential use of dogs, if trapping fails to get every last mink in the eradication process. The costs are 2.4 Million or 1.3 Million if a National Wildlife Foundation match is obtained. We concur that these cost estimates are reasonable because a 3-5 year time frame is needed to complete the removal. So while high, the expenditures are likely justified. The use of dogs in the removal of mink seems to possibly conflict with animal rights as an unacceptably cruel practice.

Science Coordinator Comments – FY12

Date: June 2011

This proposal is scientifically compelling and builds on four years of work focused on this topic. While the idea of a direct restoration project is appealing, I am concerned that the total project cost is very high in relation to the total number of nests that they project will be added to the island complex.

Public Advisory Committee Comments – FY12**Date: July 2011**

No project specific comments

Executive Director Comments – FY12**Date: July 2011**

I do not have a recommendation for this project. The project is very compelling because it potentially provides active restoration for an injured species. However, the high cost and speculation regarding the long-term outcome needs to be weighed carefully by the Council.

FY07 FUNDING RECOMMENDATIONS

Science Panel	Science Coordinator	PAC	Executive Director
Fund reduced	Not reviewed	Not reviewed	Fund reduced

Science Panel Comments – FY07**Date: Fall 2006**

This proposal investigates the efficacy of direct restoration techniques for the pigeon guillemot population in PWS. They will genetically sample mink that reside on Naked Island Archipelago to determine if the population was introduced or native and make recommendations for a recovery plan for pigeon guillemots based on the findings. Pigeon guillemots are one of two non-recovered species and this project represents one of the few restoration based proposals that have been submitted. The genetic sampling of mink and studies examining the relative contribution of mink vs. other predators to pigeon guillemot survival and reproduction are important in evaluating mink removals as a potential restoration activity. However, there is some concern that removal of mink may not be an appropriate restoration activity if the mink are in fact native. Also, food limitation studies may be difficult to interpret with respect to restoration and are perhaps premature. Mink removal may still prove an effective restoration tool even if food quality is poor. Furthermore, given the likely annual variation in food supply, a lack of food in one year may not be a reasonable predictor of future food limitation. We recommend funding the initial year of this proposal and suggest that efforts be made to provide genetic evidence on mink at the end of that year so that reasoned decisions can be made regarding future funding.

Science Coordinator Comments – FY07**Date: Fall 2006**

The Science Director is on a long-term detail from the FWS and must therefore, recuse herself from making recommendations on FWS proposals. The PI on this proposal is employed by the FWS.

Public Advisory Committee – FY07**Date: Fall 2006**

Not Reviewed

Executive Director Comments – FY07**Date: April 2006**

Salaries and logistics are the major expenses of this proposal. Assuming mink predation on pigeon guillemots, any direct restoration will likely involve controlling the mink population on Naked Island. Before this can be undertaken a determination must be made whether the mink population is indigenous or introduced. Therefore, I only recommend funding the minimum mink capture and genetic testing program necessary to determine where the population is indigenous or introduced. I further recommend local trappers and logistics be utilized in this effort to reduce expense.

Project Number: 15120116

Project Title: Marine Debris Removal Program

Primary Investigator(s): Chris Pallister

PI Affiliation: Gulf of AK Keeper

Project Manager: ADFG

EVOSTC Funding Authorized To Date: \$1,410,071

FY12	FY13	FY14
\$481,064	\$483,088*	\$445,919

**Funding for FY13 was for Project 13120116-AM 2.24.13*

Additional EVOSTC Funding Requested: \$310,650

FY15	FY16	FY17	FY18
\$310,650	\$0	\$0	\$0

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$1,719,039

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$384,400	\$335,000	\$396,120	\$140,000	\$0	\$1,285,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/2/14.*

This marine debris cleanup project will during 40 days remove heavy deposits (over 20 tons per mile) of plastic marine debris from approximately 3 miles of shoreline on the northeast shore of Montague Island along Hinchinbrook Entrance. This shoreline is critical habitat for Steller sea lions and is frequented by depleted harbor seals. The cleanup work will be a continuation of a marine debris project begun in 2013 in this specific area for the EVOSTC and continued through 2014 with Legislative and ADEC grants. Through August 2014, starting at Zaikof Point on Montague Island at the entrance to PWS and moving south, 6.5 miles of this shoreline have been cleaned. The 2015 cleanup will also remove both Japanese tsunami debris and other marine debris. At the completion of this project approximately 9.5 miles out of 74 miles of heavily fouled shoreline stretching south of Hinchinbrook Entrance will have been cleaned. A large component of the Japanese tsunami debris is Styrofoam, urethane foam, and lightweight debris such as bottles and other plastic containers. This debris is highly mobile and susceptible to refloating by tides and storms. Once the debris is refloated from shoreline deposits, prevailing winds and currents will move it through Hinchinbrook Entrance. The debris will then be redistributed throughout the inner islands of Prince William Sound fouling hundreds of miles of previously cleaned intertidal habitat. The primary goal of this cleanup project is to remove in 40 days as much debris as possible from the northeast shore of Montague Island in order to limit recontamination of inner PWS shorelines. This project replaces a cleanup originally planned nearly 30 miles further south in Patton Bay. A large peninsular land mass called Box Point traps and contains debris in Patton Bay and points further south. Refloated debris south of Box Point does not threaten inner PWS shorelines nearly as much as the debris deposits further north. It is important to focus the cleanup effort on areas that threaten the most environmental damage.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Draft 10-20-14

Science Panel Comments – FY15**Date: September 2014**

The panel recommends funding of this proposal and notes the excellent work by the PI.

Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

We concur with the Science Panel.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

The panel recommends funding of this proposal. The panel supports the PI decision to switch clean-up effort to address Styrofoam debris from the Japanese tsunami, and thus also endorses provision of funds to complete the originally intended clean-up on islands of high resource value, as proposed.

Science Coordinator Comments – FY14**Date: September 2013**

I concur with the Science Panel.

Public Advisory Committee – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Executive Director Comments – FY14**Date: September 2013**

I concur with the Science Panel.

FY13 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Fund	Fund	Not Reviewed	Fund

**Funding for FY13 was for Project 13120116-AM 2 24 13 which was an amendment to the original proposal designed to address tsunami debris.*

Science Panel Comments – FY13**Date: January 2013. Individual Panel Member Comments****Reviewer 1:**

This project was the most meritorious of the FY 2012 proposals for clean-up projects and was accordingly funded. The modifications made to the work plan and suggested here for the 2013 field season are well justified by the unexpected challenges associated with tsunami debris from the Japanese earthquake. There is urgency to address the Styrofoam debris quickly, as proposed, because once the large pieces have been broken up by waves and harsh weather, the resulting small bits are exceedingly difficult to find and remove. Even though Japanese or US government funding may become available, re-orienting FY 2013 field efforts to focus on where the GoA Keeper has documented massive debris, especially styrofoam, accumulations is well conceived and I urge support. Postponing the planned debris removal with a lag of one year will not jeopardize the original goals, provided additional funds are provided to handle the proposed FY 2013 clean-up of tsunami debris. In addition, as the Styrofoam breaks up into smaller pieces, the potential for fish and wildlife harm grows dramatically as these smaller pieces can become ingested by fish and birds. A large fraction of the area where the debris has

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been documented to be most abundant falls on historic herring nesting grounds (Montague, Naked, Eleanor, Knight Islands) potentially interfering with herring recovery efforts. The budget is well leveraged and this clean-up is very cost-effective with diverse contributions to the project. I consider this proposal to be the highest priority project among all submitted for FY 2013 consideration by the EVOS Trustee Council and urge its support.

Reviewer 2:

This amendment to a previously awarded grant is well justified. Indeed, the subsequent input of tsunami debris dwarfs the amount of debris that was already present. I concur that cleaning up the large amount of Tsunami debris should take precedence over the previously funded work. The amendment is well prepared, and the budget seems reasonable. I recommend funding the amendment.

Reviewer 3:

This project seems to have the strongest relationship to injured resources in the spill region among the submitted FY 2013 proposals. Marine debris can adversely modify natural marine habitats and can harm or even kill animals when ingested. Probability of ingestion increases with time after degradation into smaller, bite-sized pieces (e.g., Styrofoam, plastics) by wave action. The justification for the project is strengthened by the arrival of massive amounts of tsunami debris. If funded, the project should be well coordinated with any other state and federal cleanup efforts, as well as those by organizations, such as the Marine Conservation Alliance. I am supportive of EVOS funding of this proposal.

Reviewer 4:

This proposal focuses on a marine debris cleanup program that is an extension of the currently funded work plan. While there is a substantial request for this project, GoAK will match the EVOSTC funds at a 1 to 1 level. They propose to stretch funding over a three year period. They propose to clean large stretches of coastline by removal of plastic and styrofoam debris. Much of this additional work will be due to the Japanese tsunami debris that complicates the previous cleanup efforts. The debris areas are valuable intertidal regions. Funding is recommended.

Science Coordinator Comments – FY13

Date: September 2013

I concur with the comments individual science panel members regarding the technical merits of this project. I would like to see a discussion of how the Gulf of Alaska Keeper is coordinating their work with ADEC's and NOAA's efforts on the removal of tsunami marine debris.

Public Advisory Committee – FY13

Date: January 2013

Abstracts were submitted to individual members of the PAC for comment. No comments were received.

Executive Director Comments – FY13

Date: September 2013

I recommend funding his Amendment to the original proposal for FY'13. As a multi-year project, funding for FY'14 would be re-submitted on September 1, 2013 for Council review at their Fall 2013 meeting.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June-July 2011	Fund	Fund	Fund	Fund

Science Panel Comments – FY12

Date: June 2011

This long term marine debris removal program has been ongoing for the past 10 years. The costs seem to be reasonable considering the logistics, although it was unclear if they are relying on the NOAA grant to complete

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the work. The PI's are experienced but outreach efforts are weak and the project lead is in Anchorage. The team leader should speak with Village of Eyak team to see if there might be an opportunity for partnership.

Science Coordinator Comments – FY12

Date: June 2011

I concur with the Executive Director and Science Panel

Public Advisory Committee Comments – FY12

Date: July 2011

The PAC supports funding the Gulf of Alaska Keeper marine debris project, and encourages the project team and EVOS staff to work with Eyak and other groups to strengthen the public outreach and education component of the project. Passed, with dissent by Brune, who questions the value of a one-time cleanup effort; and with Andersen Faulkner abstaining due to her association with Eyak.

Brune raised a question about funding marine debris cleanup when much of the debris can be attributed to international trade and not as a result of the oil spill. Hsieh stated that it adversely impacted injured species, therefore, addressing it could help with their restoration. French noted that a one-time cleanup of marine debris would not help much, since debris arrives every year—stopping it at the source would be more effective. Stacy Studebaker made a point that education and outreach should be a component of the marine debris project, and that many in Kodiak, participated in beach cleanup efforts. French agreed, and further stated that many other groups were involved in marine debris cleanup throughout Alaska, and perhaps better integration of their efforts would be of value. Mutter noted that there was an annual Marine Debris Workshop held at the Alaska Forum on the Environment, which included many marine debris cleanup organizations.

Fandrei asked that the Trustee Council be made aware of the PAC's concern with funding short-term projects for marine debris cleanup because they do not address the long-term problem—the source of the debris.

Executive Director Comments – FY12

Date: July 2011

I concur with the Science Panel's recommendations. The proposal is extremely detailed and the PIs are already achieving a high level of debris survey and removal. Their familiarity with and effectiveness in this area is impressive.

Gulf of Alaska Keeper has worked to strengthen their public outreach and determine whether Council funds would be eligible for fed match. In between debris cleanup trips this summer, they have been collaborating with the Chugach Children's Forest.org project, Alaska Geographic, and the Chugach School District to involve students from Chenega and Tatitlek, and the Alaska Sealife Center regarding an interactive marine debris exhibit. They have made excellent inroads to expand their outreach.

As requested by the Council, GoAK has submitted an addendum with a menu of four public outreach proposals. My preliminary recommendation is in favor of funding Proposal 1, Youth Action on Marine Debris, with the Center for Alaskan Coastal Studies proposal is diversified, highly leveraged and well-designed.

Project Number: 15150121

Project Title: Lingering Oil in PWS Update

Primary Investigator(s): Jacqueline Michel, Research Planning, Inc.
Michel Boufadel, NJ Institute of Technology

PI Affiliation: Research Planning, Inc. **Project Manager:** NOAA

EVOSTC Funding Authorized To Date: \$0

FY12	FY13	FY14
\$0	\$0	\$0

Additional EVOSTC Funding Requested: \$114,570

FY15	FY16
\$114,570	\$0

Requests include 9% GA.

Total EVOSTC Funding (Authorized and Requested): \$114,570

Funding From Non-EVOSTC Sources:

FY14	FY15	FY16	FY17	FY18	Total Non-EVOSTC Funding
	\$0				\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/2/14.*

The results of previous EVOS-funded work on modeling of the lingering subsurface oil in PWS on adjacent shorelines were correlated with reduced probability of suitable habitat use by sea otters in 1998 and 2008. This work will repeat the spatial modeling of the distribution of sea otters in 2013 to determine if this effect persists through 2013, the most recent year for which population data for sea otters in PWS are available. In addition, a desk-top exercise will be conducted to determine likely treatment methods and estimated costs for restoration of sites selected based on existing site field data, statistical modeling studies, and the field bioremediation study of four beaches. Modeling results for the locations of lingering subsurface oil will be used to produce a database of sites contaminated with moderate oil residue (MOR) and heavy oil residue (HOR). Sites with the same level of contamination will be added to the database. For each site in the database, the Principal Investigators will evaluate approaches for accelerating the removal of the lingering oil. The evaluation will include assessment of the technical (engineering) feasibility and cost. The appropriate approaches will be ranked and presented.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

The Panel notes the cost-effective design and experience of PIs. Panel also notes this project does not replicate the work from the Carls project.

Science Coordinator Comments – FY15**Date: September 2014**

This work continues an important data set and will allow for the identification of targeted areas for direct restoration activities.

Public Advisory Committee – FY15**Date: October 2014**

There are no project specific comments.

Executive Director Comments – FY15**Date: October 2014**

I concur with the Science Panel and Science Coordinator.

Project Number: 15150122

Project Title: Subsistence Survey Update

Primary Investigator(s): James Fall

PI Affiliation: ADFG

Project Manager: ADFG

EVOSTC Funding Authorized To Date: \$0

FY12	FY13	FY14
\$0	\$0	\$0

Additional EVOSTC Funding Requested: \$291,476

FY15	FY16
\$281,969	\$0

Requests include 9% GA.

Total EVOSTC Funding (Authorized and Requested): \$281,969

Funding From Non-EVOSTC Sources:

FY14	FY15	FY16	FY17	FY18	Total Non-EVOSTC Funding
	\$0				\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/12/14 and 10/2/14.*

Subsistence uses are a vital natural resource service that was injured by the Exxon Valdez oil spill (EVOS). In the years following the spill, harvest levels and participation rates declined markedly, and transmission of cultural skills and values was disrupted. The EVOS Trustee Council (EVOSTC) has adopted the following recovery objective for subsistence:

“Subsistence will have recovered when injured resources used for subsistence are healthy and productive and exist at pre-spill levels. In addition, there is recognition that people must be confident that the resources are safe to eat and that the cultural values provided by gathering, preparing, and sharing food need to be reintegrated into community life.”

The last update of subsistence harvests, pertaining to 2003, concluded that “recovery is incomplete and the future direction of change is uncertain” (Fall 2006:396). The EVOSTC considers the status of subsistence as “recovering” but not recovered. The purpose of this project is to collect, analyze, and report information about current subsistence uses of fish and wildlife in a subset of EVOS area communities that is comparable with previous research results and that can be applied to evaluate the status of subsistence uses in light of the EVOS TC recovery objective.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Not Reviewed	Not Reviewed	Fund	Fund	

Science Panel Comments – FY15

Date: September 2014

There was not enough detail provided in the proposal to assess the validity of the survey design. The Panel acknowledges the experience and expertise of the PI but also has notes that the survey cost per household appears to be quite high. Also, there are complicating (confounding) factors that probably influence use of traditional subsistence foods, such as availability of alternative foods and the prevalence of modern technology, leading to changing lifestyle patterns.

Science Coordinator Comments – FY15

Date: September 2014

I concur with the Science Panel.

Public Advisory Committee – FY15

Date: October 2014

The PAC recommends that the Subsistence Survey Update project (15150122) be funded with the condition that the local communities are well informed before surveys are conducted.

Executive Director Comments – FY15

Date: October 2014

I concur with the Science Coordinator and Science Panel regarding the high cost and confounding factors. I also acknowledge the interest in updating the prior surveys. With regard to the lack of detail, the PI is highly experienced and I am confident the EVOSTC staff can work with the PI to develop the proposal to implementation.

Regarding the PAC motion regarding the need for pre-survey community outreach: the Fall proposal notes, "Prior to research, meetings will be held in each study community to review project goals and methods and to seek input on research questions. Formal approval of the project in the form of a resolution will be sought from the tribal governments in each community."

EVOSTC Long-Term Monitoring
Program Projects (GulfWatch Alaska)

Project Number: 15120114

Project Title: EVOSTC Long-Term Monitoring Program (GulfWatch Alaska)

Primary Investigator(s): Molly McCammon

PI Affiliation: AOOS

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$8,574,800

FY12	FY13	FY14
\$2,904,600	\$2,675,800	\$ 2,994,400

Additional EVOSTC Funding Requested: \$5,211,400

FY15	FY16
\$2,803,400	\$2,405,000

Requests include 9% GA.

Total EVOSTC Funding (Authorized and Requested): \$13,783,200

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$1,784,000	\$1,738,000	\$1,823,000	\$1,802,000	\$1,536,000	\$8,683,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

The goal of the Long-term Monitoring (LTM) program, now known as Gulf Watch Alaska, is to provide sound scientific data and products that inform management agencies and the public of changes in the environment and the impacts of these changes on *Exxon Valdez* oil spill (EVOS) injured resources and services. The five-year program includes: 1) four monitoring components (environmental drivers, benthic, pelagic, lingering oil); 2) data management services; 3) integrated syntheses of data; 4) historic data recovery and syntheses; and 5) science outreach.

The program has six primary objectives:

1. Sustain and build upon existing time series in the EVOS-affected regions of the Gulf of Alaska.
2. Provide scientific data, data products and outreach to management agencies and a wide variety of users.
3. Develop improved monitoring for certain species and ecosystems.
4. Develop science synthesis products to assist management actions, inform the public and guide monitoring priorities for the next 20 years.
5. Enhance connections between the Gulf Watch Alaska and Herring Research and Monitoring programs.
6. Leverage partnerships with outside agencies and groups to integrate data from broader efforts.

Some highlights from our progress in year 2 of the program include:

- Completed all project sampling and program reporting
- Updated and added information to the program website (www.gulfwatchalaska.org) and data portal
- Developed and documented new protocols for certain species\
- Held successful annual meeting and time series workshop, launched two new working groups, and elected the program Science Review Team
- Collaborated with the HRM program in joint synthesis reports, program meetings, and program reports

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

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Science Panel Comments – FY15

This year, the Panel was pleased to see improvement in this year's proposals regarding QA/QC of data collection and integration of projects, including the oceanography proposals and proposals by Matkin, Moran and Arimitsu & Piatt. The revised reporting forms also prompted greater inclusion of benchmark results, publications and changes to work plans. The Panel was also pleased to see that the Science Advisory Panel has been selected and is actively providing feedback to the Program. The Panel appreciates the PIs initial efforts to engage junior scientists and continues to encourage post-docs being integrated into the programs.

Next year, the Panel would still like to see improvements in:

Inclusion of fundamental information

The Panel would like to see the inclusion of fundamental information regarding the 1) approach, design and analysis of studies and 2) explicit statements of how analyses are answering major questions. This key information is essential to evaluating proposals, and we expect to see brief descriptions included in the next proposals. We are not requesting that detailed descriptions be provided to the degree exhibited in original proposals or publications; PIs should use their expertise to identify and include essential, fundamental information that should be included to facilitate review. Good examples of the level of expected detail include the proposals by Carls, Jones, Piatt and the Marine Debris Removal proposal by Pallister (available on the EVOSTC website).

The Panel appreciates that any additional requests for information in proposals can be perceived as onerous and that the Panel had indicated in prior years that they did not want the entire original proposal text included every year. However, the minimal, essential information requested should not take long to incorporate and could remain in subsequent proposals. From a Panel perspective, proposals cannot be evaluated without key, fundamental information on major hypothesis in part so changes to the design can be considered in proper context. We appreciate your efforts in refining your multi-year proposal submissions.

Coordination & Collaboration/Synthesis

The Panel appreciated the programs' explicit statements recognizing the synergisms among project efforts. It is clear that most projects are already working together where it is practical or advantageous to the achieving the goals of individual projects. We also appreciated that the programs recognized the need to integrate data across projects to arrive at a synthetic view of the status and trends of the PWS ecosystem, including more information on conceptual models and the synthesis of existing datasets that promise the necessary integration across projects. However progress in these areas will need to be more explicit and more fully developed, and details provided to the Panel were too limited to be able to truly evaluate progress in this area. We look forward to seeing synthesis (integrated data synthesis, not just conceptual synthesis) both within and across projects at the February synthesis meeting and view this as a critical checkpoint to assess progress of the program toward a synthetic understanding.

Science Coordinator Comments – FY15

Date: September 2014

I concur with the Science Panel's overall comments. The Program has clearly worked hard over the past field seasons to better integrate the projects, refine the administrative and outreach activities, and collect and maintain the scientific data.

PAC, Executive Director Comments – FY15

We concur with the Science Panel and Science Coordinator.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

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Science Panel Comments – FY14

Date: September 2013

The science panel appreciates the general approach of the LTM program but feels that more basic information was needed to fully evaluate the potential success of the program. Our comments below, and for several individual projects, highlight examples that would have benefitted from the inclusion of additional information for developing more informative proposals and progress reports. The panel looks for more informative proposals and progress reports in the future. Our goal is to provide feedback that may strengthen the program while it is still in its formative stage of implementation.

****Proposals by Matkin on killer whales, Moran on humpback whales, and Carls & Lindeberg on benthic monitoring were all praised by the Science Panel for their importance, inclusion of detail, and significant progress.***

Proposals were lacking in detail, hindering their evaluation

There was not enough information provided for the Science Panel to evaluate the proposals and offer substantive suggestions. In order to evaluate proposal merits, the Science Panel wanted to see more detail, including:

- Sampling design, locations and methods, including QA/QC of data collection
- Approach to data analysis including statistical methods and/or relevant contrasts
- Explicit statement of how analyses will answer the major questions
- A discussion of results to date and any adjustments in project design in view of results
- Explicit statement of how individual project results relate to or will be integrated into the broader program
- The proposals should be reviewed as a whole by someone from the group before submission

The panel, EVOSTC and agency staff will be looking at options for providing brief guidance and/or a form for the programs in advance of proposal drafting and submission to clarify expectations. When EVOSTC staff has a draft form or guidance, we will circulate it to the Team Leads for their feedback. There was also initial discussion regarding reporting which we will also circulate if it is further developed.

An overall review by an outside expert in physical oceanography and climate would be useful.

In the current round of proposals, the need to describe physical oceanographic forcing was rarely described. Several proposals generally provided vague language, in some cases they cut and pasted text from the overarching and original 2012 proposal.

There is uneven treatment and an apparent lack of collaboration among the four oceanography projects in LTM. The Weingartner (GAK1) and Hopcroft (Seward Line) proposals are well thought out and collaborative. However, Campbell and Doroff proposals should be more collaborative and thorough, including physical measurements, they are also unclear on instrument calibration and data QA/QC. There is no evidence of collaboration with trained physical oceanographers or reference to the PWS sampling stations in the Hopcroft proposal. An overall review of the physical oceanography and climate aspects of LTM (and, to a lesser extent, herring) would be useful.

Outside expert for oceanography review - some suggestions for trained oceanographers who work with biologists include: John Largier, UC Davis/Bodega Marine Laboratory, Steven Bogard, SWFSC-NMFS, and Jack Barth, OSU.

Publications

The Science Panel encourages investigators to publish their results in peer-reviewed journals to make their hard-won results available to wider scientific audience. This encouragement especially applies to young investigators who are establishing their careers. They may quickly become unable to compete for other jobs. We anticipate the FY17 Invitation will include an expectation to publish.

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Data Management

The Science Panel is concerned about progress on data management. The data management proposal drew heavily on their old proposal without including sufficient updated evidence of interactions between the programs' PIs and the data management team. In addition, there does not appear to be a data management policy or QA/QC policy created as the programs approach Year Three. In addition, no milestones were reported in the newly submitted proposals, so it was difficult to gauge how much progress had been made in the last two years. Moreover, it was not clear how data would be available for synthesis. The panel recommends that the Council condition funding upon the creation of a credible and detailed data management policy and a QA/QC policy and include clear milestones in for their proposal.

Regarding a QA/QC policy: such a document is a basic need of any data management. We note too that instruments commonly need to be calibrated before and after use to be able to adjust for measurement drift, if it occurs. With two separate data centers operating under the EVOSTC program it is crucial that a high level of QA/QC be maintained. The Science Panel is concerned that adequate attention is not being devoted to this fundamental aspect of data management. It is particularly important that to assemble complete metadata to ensure that long-term data sets can be verified and understood once the current participants have moved on to new positions. For example, EPA and NSF require detailed data management and QA/QC plans as part of all proposals. Large monitoring programs, such as NSF's LTER and oceanographic programs, devote considerable time and effort to addressing these critical needs.

Example: As a specific example, the Ocean Tracking Network (OTN) has four nearly full-time people creating metadata forms that are required to be filled out, submitted and checked for QA-QC before data can be added to the database. Since OTN is currently adding equipment to tracking arrays in PWS, it would be particularly appropriate at this time to arrange communication between senior OTN data managers with EVOSTC program data PIs to ensure that data standards are adequate. As with OTN, and as emphasized in the initial funding of the EVOSTC programs, skilled data management resulting in data that can be relied upon by the scientific community and resource agencies will ultimately determine the long-term success and influence of the programs. The contact at OTN is Bob Branton (bob.branton@gmail.com) or (bob.branton@dal.ca).

Attrition of Experienced Personnel

The panel notes that it may be a challenge to replace experienced personnel retiring or transitioning out of the programs, but the need for their expertise remains. To address these changes, the panel suggests that the programs partner their junior PIs with newly recruited, experienced scientists. Where difficulties exist in filling key positions, the panel also suggests strategically tapping outside experts to review projects and provide consultation and setting up a Post-Doc training program for the LTM and Herring projects. As experienced personnel leave the program either through retirement or departure, the salary savings could fund this kind of activity.

Potential Resource - The panel encourages the programs to consider options for developing concepts for postdoctoral programs that can help address these issues. The panel and the programs' internal panels and advisory groups can provide assistance in identifying potential post doc candidates who may be helpful to the programs. Intergovernmental Personnel Assignments and perhaps NRC Research Associate post-docs may also be a source for additional expertise and post-doc work.

Synthesis in Advance of February 2015 Workshop

There is concern from our review of the proposals that the programs are postponing work on synthesis until just before the Workshop. The programs should think through and create a step-by-step route and design for their 2015 synthesis so there is sufficient field time to work on it. This plan should include mechanisms and process. The part of synthesis that involves creation of and testing of models is best done by an iterative process in which modeling is sequentially tested by reference to new data and the models revised accordingly.

There was also a suggestion to focus on cross-cutting topical issues, such as acoustics and calibration. PIs with different expertise could be paired to initiate and encourage actual synthetic analyses and presentation in contrast to single PI presentations on isolated projects or topics.

Examples for pairings include disease and physiology, and modeling of herring movements and disease

Inter-project cooperation and communication

The Science Panel acknowledges and salutes the efforts made to coordinate logistics of field projects, especially following a long period when PIs worked relatively independently on most projects. However we are not convinced that some of the individual projects are as well connected as they should be, in terms of communication among PI's. This comment is based on an apparent lack of connectivity among some of the proposals.

Program Science Panel and Upcoming 2015 Synthesis

*See also Synthesis in Advance of February 2015 Workshop, above.

Proposal Objective 2. Assist with Scientific Review Panel

"Setup of the panel has been delayed in order to make the most effective use of panel members' time in advance of the synthesis workshop. Planning of the synthesis workshop begins in the final two quarters of year 2, the panel will be established by the end of year two (approximately one year in advance of the synthesis workshop)."

This is a major problem. Bringing an outside science review into projects makes changes difficult (because of already established long-term monitoring protocols). Some of these aspects should have been established in Year 1 rather than just before a major synthesis workshop in Year 3. The Science Panel suggests they establish a group that reviews the developed monitoring and integration plans and how they support synthesis.

Regarding the Program's Science Panel:

What is its status? Their influence and guidance is not apparent, guidance, integration is needed. The LTM Program's internal Science Panel should be already composed, constituted and advising by now.

Science Coordinator Comments – FY14

Date: September 2013

I concur with overall comments of the Science Panel. I agree with the Panel's comments regarding the overall poor quality of the proposals. Most proposals made no effort to even change the dates of their tasks and deliverables making it almost impossible to determine where the project was in meeting its objectives. I am also particularly concerned by the lack of a functioning science advisory committee this far into the program. The creation of this group was a requirement of the FY12 Invitation for Proposals under which this program was funded. *I would recommend to the Council that funding of the administrative portion of this program be withheld until a plan is in place for a program science advisory body.*

Public Advisory Committee Comments – FY14

Date: October 2013

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Executive Director Comments – FY14

Date: October 2013

I concur with the Science Panel and their extensive comments noted above and support the concerns of the Science Coordinator.

Trustee Council Comments – FY14**Date: October 2013**

The Council requests the Team Leads and PIs within the Long-Term Programs in Project numbers 14120111 and 14120114 work with EVOSTC staff to address Science Panel and EVOSTC staff comments in the Fiscal Year 2014 Work Plan and participate in a Long Term Programs' Data Review Meeting with EVOSTC and Trust Agency Staff.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

I concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund
April 2011	Fund	Fund	Fund	Fund

Science Panel Comments – FY12**Date: July 2011 – Individual Panel Member Comments****Individual Comment 1:**

Seabird monitoring costs double in year 3 – The explanation is clear, although the basis for why two surveys may be needed in year 3 and what is lost when only 1 is done is unclear. Cost breakdown for Coordination, data management, outreach, and administration – The suite of activities included under this heading is now explicit as are the total costs associated with each one in the budgets provided. I wish to note, however, the “conceptual modeling” project of Hollmen does not fall into any of these categories – it is a scientific study, not an administrative service, outreach activity, coordination, or data management task, and should be reviewed as such. In that context, I examined the Hollmen proposal and have some concerns. Although intended to be “conceptual modeling”, I find no mention of any concepts in the proposal. I cannot find indication of the methodological approaches to be used and why they were chosen. For example, will this be a Bayesian process? Will modeling be ecosystem based? Will ECOPATH or something analogous be employed? There are no literature citations in this proposal. For 395K over 5 years, more detail would seem to be called for. I cannot find a CV included for the PI, Hollmen. Does she have modeling experience, and, if so, in what types of models?

Synthesis concerns – the PIs provide a thoughtful and compelling response to this issue, providing an excellent overview and demonstrating potential for meaningful syntheses.

Data management – The PIs make a strong case for the cost efficiencies associated with leveraging that lower the costs of the data management for EVOS Trustee projects by joining with AOOS in a coordinated effort with

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a single consultant-provider. The response also makes a justifiable case for why teaming up with AOOS makes sense – because of their presumed permanence as compared to other science programs. I am impressed that Phil Mundy chairs the AOOS external advisory committee and concur that he has the experience and wisdom to provide rational advice and guidance. Nevertheless, the bottom line after all is said and done is – Does AXIOM deliver the data products that are acceptable to the scientists it is serving. This response document appears to argue that the scientists that participate in the Monitoring Program are indeed satisfied. So that helps me side with continuing the relationship with Axiom. Nevertheless, this document implies a willingness to interact with NCEAS and to discuss their recommendations for improvements in all aspects of Axiom's data management services and I think that facilitating that set of interactions in a meaningful way (meaning to sufficient depth and not just superficial) is important for piece-of-mind given delays in delivery of reports from Axiom on past EVOS Trustee contracts. I am also curious to know if the outstanding final reports have indeed been completed successfully at this time. I see argued in this response document that the past scientist clients of AXIOM are satisfied with the company's services, which addresses one major issue raised by the Science Panel.

Date: April 2011

This proposal is well presented and provides a thorough long-term monitoring program for the spill area. The team is experienced and well -qualified to complete the proposed work. The outreach and education strategies and partnerships are well thought-out and have the potential to provide effective means to disseminate information and engage community members in understanding the results of the integrated monitoring program. The potential future development of a citizen monitoring program would provide another effective strategy. The Science Panel was especially impressed with the section called 'cross-cutting' that showed the linkages with the Herring Program. Gathering and making data available will be the keystone of this program. The Science Panel expressed serious concerns about past performance of some participants and that the data management team does not have sufficient expertise or scientific guidance to deliver a useable data system. In addition, it is not clear at all there is a plan for the inclusion of structurally diverse data where and how will such data be organized so that relevant data and metadata from a broad array of disciplines can be assembled in one database. The panel viewed this as this as an informatics problem that, if not resolved at the onset, will jeopardize the long-term program. There is a very clear need to overcome critical technological impediments to accomplishing synthetic, integrative environmental science, while at the same time promoting more open access to information and data sharing. It is critical that this database be open source and be compliant with the Knowledge Network for Bio-complexity metadata compliant with Ecological Metadata Language. In addition, there should be a plan from the outset as to how to incorporate this data into NPRB's GOA IERP program at the end of the first five-year contract cycle.

Therefore, we strongly recommend that the Council provide assistance from an organization such as the National Center for Ecological Analysis and Synthesis (NCEAS) for peer review and technical assistance to the data management team. With regard to the separate lingering oil monitoring proposal included within the Program proposal, the Panel has no objection to the funding of this additional project.

Science Coordinator Comments – FY12

Date: April 2011

I agree with the Science Panel and Executive Director. I also have serious concerns regarding the data program and would encourage the Council to assist the team by providing funding for a collaborator to assist the data team in their development of the data program. My concerns regarding the proposed contractor are based on a poor past performance with meeting deadlines and producing deliverables. I also believe that the final product would greatly benefit if Axiom was given assistance from a group that has experience working with large heterogeneous data sets.

The PI's that are included in this program proposal have extensive experience gathering data in PWS and have contributed to several long-term data sets that will be the foundation of this program. The team's quick response to our data set questions demonstrates their ability to work together and to openly share information with their fellow researchers.

Draft 10-20-14

Public Advisory Committee – FY12

The PAC supports funding the LTM project proposal, noting that the PAC agrees with the Science Coordinator in that there are serious concerns regarding the data program and would encourage the Council to assist the project team by providing funding for a comprehensive review of the data program. The motion passed, with dissent by Brune and Bauer, based on Axiom's current past due deliverables.

It was moved by French, second by Studebaker, that the PAC supports the Science Panel recommendation for additional funding for the LTM project to consider the effects of lingering oil. Passed unanimously.

Executive Director Comments – FY12

Date: April 2011

There has been strong concern about the program's data manager serving the entire program. Since April, the data manager's work has been favorably reviewed, has submitted late deliverables to the Council and several data management options have been produced by this program and outside entities. These options presented are in conjunction with leaders in the field of heterogeneous scientific database management and are excellent options. I recommend the Council pursue one of these options to ensure successful management of the data produced by this and past Council-funded efforts.

Project Number: 15120114-A

Project Title: LTM Program - Continuous Plankton Recorders

Primary Investigator(s): Sonia Batten

PI Affiliation: SAHFOS

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$ 1,119,900

FY02-FY11	FY12	FY13	FY14
\$984,300	\$0	\$66,800	\$68,800

Additional EVOSTC Funding Requested: \$143,800

FY15	FY16
\$70,700	\$73,100

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$279,400

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$94,700	\$148,000	\$180,800	\$169,000	\$592,500

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

Many important species, including herring, forage outside of Prince William Sound for at least some of their life history (salmon, birds and marine mammals for example) so an understanding of the productivity of these shelf and offshore areas is important to understanding and predicting fluctuations in resource abundance. The Continuous Plankton Recorder (CPR) has sampled a continuous transect extending from the inner part of Cook Inlet, onto the open continental shelf and across the shelf break into the open Gulf of Alaska monthly through spring and summer since 2004. There are also data from 2000-2003 from a previous transect. The current transect intersects with the outer part of the Seward Line and provides complementary large scale data to compare with the more local, finer scale plankton sampling on the shelf and in PWS. We propose to continue sampling this transect through 2016. Resulting data will enable us to identify where the incidences of high or low plankton are, which components of the community are influenced, and whether the whole region is responding in a similar way to meteorological variability. Evidence from CPR sampling over the past decade suggests that the regions are not synchronous in their response to ocean climate forcing. The data can also be used to try to explain how the interannual variation in ocean food sources creates interannual variability in PWS zooplankton, and when changes in ocean zooplankton are to be seen inside PWS. The CPR survey is a cost-effective, ship-of-opportunity based sampling program supported in the past by the EVOS TC that includes local involvement and has a proven track record.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund
April 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-B

Project Title: LTM Program - Administration, Science Review Panel and PI Meeting Logistics, and Outreach and Community Involvement

Primary Investigator(s): Katrina Hoffman

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$836,600

FY12	FY13	FY14
\$263,300	\$274,700	\$298,600

Additional EVOSTC Funding Requested: \$581,500

FY15	FY16
\$293,400	\$288,100

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$1,418,100

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et al. To achieve fiscal efficiency, the Prince William Sound Science Center (PWSSC) serves as the administrative lead and fiscal agent for the consortium implementing this program known as Gulf Watch Alaska (GWA). As fiscal agent and administrative lead, PWSSC is responsible for: managing award contracts for all non-Trustee Agency projects within the program; ensuring the program and projects adhere to all reporting policies, practices and timelines as required by the EVOSTC and NOAA; serving as a liaison between the program and EVOSTC staff; coordinating travel and logistics for principal investigator annual meetings; coordinating travel and logistics for outreach efforts; participating in an annual audit; and providing administrative support to the outreach and community involvement component of the GWA program. The Outreach and Community Involvement component is coordinated by the Alaska Ocean Observing System. We also coordinate with the Herring Research and Monitoring Program on data sharing, administration and outreach.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

There is discussion of the website being the primary outreach tool for the team, yet the site does not appear to be regularly updated or provide much information for the general public on the Program

Science Coordinator Comments – FY15**Date: September 2014**

I concur with the Panel's concerns regarding the outreach program. The website is being used as the "primary source of information" but there is very little information that would be of use to the general public. The publications page is blank and there are no links to the Delta Sound Connection article mentioned in the proposal.

PAC, Executive Director Comments – FY15**Date: October 2014**

We concur with the Science Panel and Science Coordinator.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

This proposal demonstrates a good range of activities, is well written and explained. Very good elaboration on the level of partnering and how partnerships work. The project has good advisory committees, but could use some evaluation of the impacts of its public educational programs – are they reaching the intended audience, etc. The budget may be inadequate to support evaluation costs.

Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: October 2013**

There are no project specific comments.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director, Trustee Council Comments – FY13**Date: September 2012**

There are no project specific comments.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund
April 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-C

Project Title: LTM Program - Seabird Abundance in Fall and Winter

Primary Investigator(s): Mary Anne Bishop

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$211,200

FY12	FY13	FY14
\$51,700	\$78,600	\$80,900

Additional EVOSTC Funding Requested: \$169,700

FY15	FY16
\$83,400	\$87,500

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$382,100

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$10,500	\$45,500	\$63,500	\$63,500	\$63,500	\$246,500

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Gulf Watch Alaska Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et.al. The vast majority of seabird monitoring in areas affected by the Exxon Valdez oil spill has taken place around breeding colonies during the reproductive season, a time when food is generally at its most plentiful. However, seabirds spend most of the year widely dispersed. Late fall through winter are critical periods for survival as food tends to be relatively scarce or inaccessible, the climate more extreme, light levels reduced, day length shorter and water temperatures colder. Post-spill ecosystem recovery and changing physical and biological factors all have the potential to affect PWS seabird populations. Of the seabirds that overwinter in PWS, nine species were initially injured by the Exxon Valdez oil spill, including three species that have not yet recovered (marbled murrelet, Kittlitz's murrelet and pigeon guillemot). Here we propose to continue to monitor from 2012 through 2016 seabird abundance, species composition, and habitat associations using multiple surveys (up to 5 surveys per season) during late fall and winter. The data will improve our predictive models of seabird species abundance and distribution in relation to biological and physical environmental factors. In addition, by monitoring the top-down forcing by seabirds, a major source of herring predation, this project will complement the suite of PWS Herring Research & Monitoring studies, including improved mortality estimates for herring population models. This project is part of the pelagic component within the integrated Gulfwatch Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. Our project uses as observing platforms the vessels associated with the LTM Humpback Whale surveys, PWS Herring Research & Monitoring Juvenile Herring Abundance Index and integrates the seabird observations with those studies. In addition, our projects uses vessels associated with Alaska Dept. of Fish and Game October PWS shrimp surveys, and PWS Science Center February acoustic array cruises.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

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Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

The proposed objectives are to characterize the spatial and temporal distribution of seabirds in PWS during late fall and winter and relate the presence of seabirds with prey distributions from hydro-acoustic surveys for identifying winter habitat of seabirds and improving estimates of herring consumption in winter. The panel feels that improved resolution of sampling during summer, when seabirds are nesting and most accurately censused, may be more fruitful than conducting expansive surveys during the winter. Given the overlap of investigators on the summer and winter surveys, we encourage them to consider conducting annual rather than biannual surveys in summer by scaling back winter surveys.

Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

I concur with the Science Panel

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund
April 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

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Project Number: 15120114-D

Project Title: LTM Program – Data Management

Primary Investigator(s): Rob Bochenek

PI Affiliation: Axiom Consulting

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$518,200

FY12	FY13	FY14
\$190,800	\$163,400	\$164,000

Additional EVOSTC Funding Requested: \$326,600

FY15	FY16
\$163,900	\$162,600

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$844,700

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$683,000	\$640,000	\$620,000	\$500,000	\$500,000	\$2,943,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project supplies the EVOS Long Term Monitoring (LTM) effort with critical data management support to assist study teams in efficiently meeting their objectives and ensuring data produced or consolidated through the effort is organized, documented and available to be utilized by a wide array of technical and non-technical users. This effort leverages, coordinates and cost shares with a series of existing data management projects which are parallel in scope to the data management needs of the long term monitoring program. In the first two years, this project would focus on providing informatics support to streamline the transfer of information between various study teams and isolate and standardize historic data sets in the general spill affected area for use in retrospective analysis, synthesis and model development. These efforts would continue into year three through five but efforts would also focus on developing management and outreach applications for the data and data products produced from the LTM program.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

It was encouraging for the Science Panel to hear via a conference call with Kris Holderied, Tammy Neher, and Scott Pegau that the standardized forms for metadata submission had been recently modified, and that a more refined version is now available to investigators. The Panel is hopeful that this will facilitate all investigators' compliance on submission of both metadata and data in a timely manner (within one year of collection) as agreed upon when accepting funding from EVOSTC.

Science Coordinator Comments – FY15**Date: September 2014**

I concur with the Science Panel's comments. I understand the challenges of achieving data compliance with the individual projects and would be happy to assist if desired.

PAC, Executive Director Comments – FY15**Date: October 2014**

We concur with the Science Panel and Science Coordinator comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund Conditional	Fund Conditional	Not Reviewed	Fund Conditional	Fund Conditional

Science Panel Comments – FY14**Date: September 2013**

Progress is listed as "Data is being archived on the Workspace by investigators in the program..." and "Data from the past two field seasons will be ingested into the data management system. We will continue to refine and expand the information available through the Herring data portal."

Please specify what data have been incorporated. Also, the demonstration of progress is not adequate. More detail is essential. Failing that, this project should be suspended. An inventory of all data proposed to be incorporated eventually into the program should be drawn up and an accounting of progress on incorporating the listed data sets should be reported annually, including any changes to the inventory of target datasets.

The Science Panel is concerned about progress on data management. The data management proposal drew heavily on their old proposal without including sufficient updated evidence of interactions between the programs' PIs and the data management team. In addition, there does not appear to be a data management policy or QA/QC policy created as the programs approach Year Three. In addition, no milestones were reported in the newly submitted proposals, so it was difficult to gauge how much progress had been made in the last two years. Moreover, it was not clear how data would be available for synthesis. The panel recommends that the Council condition funding upon the creation of a credible and detailed data management policy and a QA/QC policy and include clear milestones in for their proposal.

A QA/QC policy is a basic need of any data management. We note too that instruments commonly need to be calibrated before and after use to be able to adjust for measurement drift, if it occurs. With two separate data centers operating under the EVOSTC program it is crucial that a high level of QA/QC be maintained. The Science Panel is concerned that adequate attention is not being devoted to this fundamental aspect of data management. It is particularly important that to assemble complete metadata to ensure that long-term data sets can be verified and understood once the current participants have moved on to new positions. For example, EPA and NSF require detailed data management and QA/QC plans as part of all proposals. Large monitoring programs, such as NSF's LTER and oceanographic programs, devote considerable time and effort to addressing these critical needs.

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Example: As a specific example, the Ocean Tracking Network (OTN) has four nearly full-time people creating metadata forms that are required to be filled out, submitted and checked for QA-QC before data can be added to the database. Since OTN is currently adding equipment to tracking arrays in PWS, it would be particularly appropriate at this time to arrange communication between senior OTN data managers with EVOSTC program data PIs to ensure that data standards are adequate. As with OTN, and as emphasized in the initial funding of the EVOSTC programs, skilled data management resulting in data that can be relied upon by the scientific community and resource agencies will ultimately determine the long-term success and influence of the programs. The contact at OTN is Bob Branton (bob.branton@gmail.com) or (bob.branton@dal.ca).

Science Coordinator, Executive Director Comments – FY14

Date: September and October 2013

We concur with the Science Panel.

Public Advisory Committee Comments – FY14

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

Trustee Council Comments – FY14

Date: October 2013

The Council requests the Team Leads and PIs within the Long-Term Programs in Project numbers 14120111 and 14120114 work with EVOSTC staff to address Science Panel and EVOSTC staff comments in the Fiscal Year 2014 Work Plan and participate in a Long Term Programs' Data Review Meeting with EVOSTC and Trust Agency Staff.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13

Date: September 2012

We concur with the Science Panel.

Public Advisory Committee Comments – FY13

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Modify	Modify		Modify

Science Panel Comments – FY12

Date: June 2011

The PIs make a strong case for the cost efficiencies associated with leveraging that lower the costs of the data management for EVOS Trustee projects by joining with AOOS in a coordinated effort with a single consultant-

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provider The response also makes a justifiable case for why teaming up with AOOS makes sense – because of their presumed permanence as compared to other science programs I am impressed that Phil Mundy chairs the AOOS external advisory committee and concur that he has the experience and wisdom to provide rational advice and guidance Does Axiom deliver the data products that are acceptable to the scientists it is serving This response document appears to argue that the scientists that participate in the Monitoring Program are indeed satisfied. So that helps me side with continuing the relationship with Axiom. Nevertheless, this document implies a willingness to interact with NCEAS and to discuss their recommendations for improvements in all aspects of Axiom's data management services and I think that facilitating that set of interactions in a meaningful way (meaning to sufficient depth and not just superficial) is important for piece-of-mind given delays in delivery of reports from Axiom on past EVOS Trustee contracts I see argued in this response document that the past scientist clients of AXIOM are satisfied with the company's services, which addresses one major issue raised by the Science Panel.

Science Coordinator Comments – FY12

Date: June 2011

I agree with the Science Panel and Executive Director I also have serious concerns regarding the data program and would encourage the Council to assist the team by providing funding for a collaborator to assist the data team in their development of the data program. My concerns regarding the proposed contractor are based on a poor past performance with meeting deadlines and producing deliverables. I also believe that the final product would greatly benefit if Axiom was given assistance from a group that has experience working with large heterogeneous data sets

Public Advisory Committee – FY12

Date: July 2011

Issues raised by the Science Panel, Trustee Council staff, and the PAC called for additional work and collaboration to assist with establishment of a data management system that includes accessible scientific data as well as public information. French noted that he had no problem with either NCEAS or Woods Hole—he questioned Axiom's role and staying power. French said he supported the NCEAS and Axiom collaboration Chairman Eilo summed the PAC interest in the Trustee Council implementing a solid data management, synthesis, and public access system

Executive Director Comments – FY12

Date: July 2011

There has been strong concern about the program's data manager serving the entire program. Since April, the data manager's work has been favorably reviewed, has submitted late deliverables to the Council and several data management options have been produced by this program and outside entities These options presented are in conjunction with leaders in the field of heterogeneous scientific database management and are excellent options. I recommend the Council pursue one of these options to ensure successful management of the data produced by this and past Council-funded efforts.

Project Number: 15120114-E

Project Title: LTM Program – Long term monitoring of oceanographic conditions in Prince William Sound

Primary Investigator(s): Robert Campbell

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$628,600

FY12	FY13	FY14
\$238,100	\$193,200	\$197,300

Additional EVOSTC Funding Requested: \$413,000

FY15	FY16
\$203,700	\$209,300

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$1,041,600

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$23,300	\$23,300	\$23,300	\$145,000	\$135,000	\$349,900

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. This project is intended to provide physical and biological measurements that may be used to assess bottom-up impacts on the marine ecosystems of Prince William Sound. Specifically, it is proposed to deploy an autonomous profiling mooring in central Prince William Sound that will provide high frequency (~daily) depth-specific measurements of physical (temperature, salinity, turbidity), biogeochemical (nitrate, phosphate and silicate) and biological (Chlorophyll-a concentration) parameters, over the course of the growing season (focused on the vernal and autumn blooms). Several regular vessel surveys are also proposed to provide ground-truth data for the mooring, and to attempt to capture some of the spatial variability in PWS. As well as the mooring site, the surveys will visit all four of the SEA bays to maintain ongoing EVOSTC funded time series measurements at those sites and to support proposed herring research (Pegau et. al). The major entrances (Hinchinbrook Entrance and Montague Strait) will also be visited. The surveys will make the same suite of measurements as the mooring, and will also collect water and plankton samples. This project will also link significantly with the herring research efforts proposed by Pegau et al.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

The physical measurements are very important in a project of this kind. There is little evidence that the nuances of the physical oceanography – from instrument calibration, data QA, interpretation of results, and relationships to other similar programs – are in place. There is no reference to or integration with the UA (University of Alaska) physical oceanographers from the GulfWatch (GAK1) program or to the physical measurements being made in PWS in the Seward Line program, or the historical physical oceanography conducted by the PWSSC that describes water mass movements from the shelf into Hitchinbrook Entrance and through PWS.

For the moored instrument, calibration is a concern. The proposal states that instruments will be calibrated annually. Typically they should be calibrated before and after each deployment, and the data corrected for drift of the instruments. Has a physical oceanographer been consulted on this? The concern is that the physical data will be assumed to be accurate and will be used for various purposes without adequate QA/QC.

There is not a lot of specificity on how the plankton will be handled, net sizes or other factors. Need further information on target species, and it would be good to show how this relates to Hopcroft's Seward line project, particularly those EVOSTC funded samples taken in PWS, and to Batten's continuous plankton recorder results. There is no evidence of this in the Collaboration and Cooperation section of the proposal.

Science Coordinator, Executive Director Comments – FY14**Date: September and October 2013**

We concur with the Science Panel.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

Trustee Council Comments – FY14**Date: October 2013**

There are no project specific comments.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: July 2011**

There are no project specific comments.

Project Number: 15120114-G

Project Title: LTM Program – Long-term monitoring of oceanographic conditions in Cook Inlet/Kachemak Bay

Primary Investigator(s): Angela Doroff, ADFG
Kris Holderied, NOAA

PI Affiliation: ADFG, NOAA

Project Manager: ADFG, NOAA

EVOSTC Funding Authorized To Date: \$535,800

FY12	FY13	FY14
\$191,900	\$177,400	\$166,500

Additional EVOSTC Funding Requested: \$242,500

FY15	FY16
\$133,700	\$108,800

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$778,300

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$180,000	\$180,000	\$180,000	\$155,000	\$155,000	\$850,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is designed to assist in the evaluation of recovery and restoration of injured resources in the foot print of the Exxon Valdez oil spill (EVOS), by characterizing oceanic conditions in Cook Inlet and determining, in coordination with oceanographic monitoring at other sites under the Gulf Watch Alaska program, connections between marine conditions and plankton communities in near-shore and Gulf of Alaska waters. Mapping currents and water mass movements contributes to our understanding of patterns in the abundance and diversity of marine plankton, invertebrates, fish, birds, and mammals in coastal south-central Alaska. In this study, we are mapping the waters in lower Cook Inlet and Kachemak Bay to understand seasonal patterns, effects of freshwater runoff, intrusions of the Alaska Coastal Current, and complex frontal structures, and then relate these observations to distributions of injured resources. Characterizing seasonal patterns in physical oceanography will also help us understand the connectivity of water movement and potential plankton transport pathways between Kachemak Bay, lower Cook Inlet and the adjacent Gulf of Alaska shelf. By determining the local species of phytoplankton and zooplankton and understanding their seasonal distribution we will begin to understand lower trophic patterns that support upper trophic level marine species. This continuing project proposal does not change significantly from our original proposal for year 4. Information from this project is also being used to inform local mariculture operations, understand depletions of hard shell clams and other invertebrate species, develop NOAA Cook Inlet ocean circulation model applications, and support monitoring and research programs for harmful algal blooms and ocean acidification.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Draft 10-20-14

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14

Date: September 2013

The Science Panel agrees that mapping the waters of lower Cook Inlet and Kachemak Bay to understand the effects of intrusions of the Alaska Coastal Current and variation of other currents on phytoplankton and zooplankton distribution and abundance is a valuable part of long-term ecosystem monitoring.

Questions arose about the ability to meet this objective with the proposed unbalanced sampling design. Sampling transects 3, 4, 6, and 7 (Kachemak Bay and lower Cook Inlet) will be reduced from quarterly in the first three years of the project to three times in Y4 and twice in Y5 due to budget constraints, thereby limiting the scope of analysis among years. Would a different, but inter-annually consistent, design provide a more powerful, thorough, and rigorous analysis of temporal and spatial variation under these budget constraints? Alternatives might include reducing the: (1) sampling frequency of transects to three times per year throughout the study, (2) the number of stations along transects to maintain quarterly sampling or (3) the number of transects to maintain quarterly sampling. We advise that this sampling plan be carefully re-evaluated and justified.

Concerns were also expressed about the collection and handling of physical measurements – are instruments appropriately calibrated, and how are data handled (QA/QC)? Evidence of collaboration with other physical measurement programs (GAK1, Seward Line) and the relationship to (and use of?) the results of the new Seward Line PWS stations were of interest. Are the physical oceanography measurements in the program designed to take into account the gyre and counter-gyre in Kachemak Bay?

Science Coordinator, Executive Director, Trustee Council Comments – FY14

Date: September and October 2013

There are no project specific comments.

Public Advisory Committee Comments – FY14

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the Science Panel.

Draft 10-20-14

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

Executive Director Comments – FY13**Date: September 2012**

I concur with the Science Panel.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-H

Project Title: LTM Program – Science Coordination and Synthesis

Primary Investigator(s): Kris Holderied

PI Affiliation: NOAA

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$410,800

FY12	FY13	FY14
\$123,500	\$139,000	\$148,300

Additional EVOSTC Funding Requested: \$297,700

FY15	FY16
\$146,100	\$151,600

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$708,500

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$13,000	\$13,000	\$13,000	\$13,000	\$13,000	\$65,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is part of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et al. Long-term monitoring has been implemented within the *Exxon Valdez* Oil Spill (EVOS)-affected region under a variety of organizations and programs. However, many of these efforts have been conducted independently, with emphasis on monitoring of single species or within individual disciplines. By explicitly providing for science coordination and syntheses of data from our long-term monitoring program, as well as incorporating an interdisciplinary framework into program development and implementation, we seek to improve open access to multi-disciplinary data and promote use of integrated information from the entire program for both research and resource management in the EVOS-affected region. The science coordination and synthesis component of our integrated program improves linkages between monitoring in different regions as well within a given region, as a way to better discern the impacts of environmental change on restoration and continued recovery of injured resources. Science coordination includes facilitating program planning and sharing of information between principal investigators, developing annual reports on the science program, and coordinating ongoing evaluation of the overall program. Science synthesis efforts helps integrate information across the entire program and is closely coordinated with the conceptual ecological modeling and data management teams in our integrated program.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-I

Project Title: LTM Program – Conceptual Ecological Modeling

Primary Investigator(s): Tuula Hollmen

PI Affiliation: ASLC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$270,600

FY12	FY13	FY14
\$83,100	\$91,900	\$95,600

Additional EVOSTC Funding Requested: \$160,500

FY15	FY16
\$78,600	\$81,900

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$431,000

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Gulf Watch Alaska Long-term Monitoring of Marine Conditions and Injured Resources and Services program. Under this research project, we will develop conceptual ecological models to support the synthesis and planning relating to the long term monitoring program in Prince William Sound, outer Kenai coast, and lower Cook Inlet/Kachemak Bay. To develop these models, we will summarize system components, processes, and influences into a synthetic framework. The conceptual models will assist in identification of data needs and development of long term monitoring priorities and, by iterative revision and refinement of models, demonstrate progress in understanding of ecosystem structure and function through the Gulf Watch Alaska program. The conceptual models will also provide guidance for development of numerical and quantitative models of system function and responses to external influences. Finally, the conceptual models will provide a communication tool among scientists, resource managers, policy-makers, and the general public, and will provide visualization and interactive tools to support outreach efforts of the Gulf Watch Alaska program.

We have developed a general conceptual ecosystem model based on input from principal investigators of the Gulf Watch Alaska program, representing current understanding of system structure and function by the program PIs. We have developed a semi quantitative linkage rating tool to characterize desired properties of interactions and relationships among system components. The rating tool has been applied to an example sub model, and will be used to explore and rank properties of a suite of ecological and management oriented sub models currently in development. Additionally, our team is developing decision support tools to assist the program with prioritization of monitoring variables and linkages to key management objectives.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15

Date: September 2014

The Panel appreciated that the conceptual model could provide significant integration, however the Panel remained concerned about the lack of detail on the conceptual models. It is important for the Panel to better understand what exactly the conceptual modeling approaches, how they are implemented, and specifically how they make use, and will in the future make use, of the data collected by other projects. The details of the organizing model (and sub-models described in the conference call) and its value for guiding future work must be demonstrated at the upcoming synthesis meeting; otherwise the Panel is unlikely to recommend continued funding for this work beyond FY15.

Science Coordinator, PAC, Executive Director Comments – FY15

Date: September and October 2014

We concur with the concerns of the Science Panel

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund Conditional	Fund Conditional	Not Reviewed	Fund Conditional	Fund

Science Panel Comments – FY14

Date: September 2013

From the CV, there is no evidence that the PI has experience as a synthetic ecological modeler. Her CV and publications suggest that she is more of an avian physiologist. It is unclear how their web-based visualization and data exploration tools differ from those of the data management group and NCEAS. Is there unnecessary duplication? Also, it appears that there are no plans to achieve the objectives until the very end of the 5-yr program. This is not acceptable, as it leaves inadequate time for iterative model evaluation and refinement.

This modeling project is very important to the overall program. However, it lacks evidence of any progress two years into the project and offers no vision of what can and will be done. No milestones have been tied to ongoing costs for this project. The proposals include an integration component but the submissions were boilerplate. More explicit information that sets out a road map is needed, not necessarily a longer submission. The programs are focused on monitoring but the programs should still have forward-thinking research. There should also be an adaptive process that allows the programs to set out a conceptual model, which is continuously updated and refined as its accuracy is challenged by new data and the PIs should develop a collection of reasonable hypotheses. To address these problems, the panel recommends the formation of a Conceptual Modeling Group, drawn from the programs' existing PIs who are already involved in the programs and known for their synthetic vision: Piatt, Pegau, Weingartner, Hopcroft and Jeep Rice. Examples of synthesis can be found on the Internet, including Chesapeake Bay, George's Bank and Steve Brandt's spatially explicit modeling of habitat quality and fish growth. Daniel Pauly and Tom Okey have been involved in an ECOPATH-ECOISM modeling of the PWS food web.

Science Coordinator, Executive Director Comments – FY14

Date: September and October 2013

We concur with the Science Panel

Public Advisory Committee Comments – FY14

Date: October 2013

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Trustee Council Comments – FY14

Date: October 2013

Draft 10-20-14

There are no project specific comments.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13

Date: September 2012

We concur with the Science Panel.

Public Advisory Committee Comments – FY13

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel Comments – FY12

Date: June 2011 – Individual Panel Member Comments

Individual Comment 1:

I examined the Hollmen proposal and have some concerns. Although intended to be “conceptual modeling”, I find no mention of any concepts in the proposal. I cannot find indication of the methodological approaches to be used and why they were chosen. For example, will this be a Bayesian process? Will modeling be ecosystem based? Will ECOPATH or something analogous be employed? There are no literature citations in this proposal. For 395K over 5 years, more detail would seem to be called for. Does the PI have modeling experience, and, if so, in what types of models?

Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12

There are no project specific comments.

Project Number: 15120114-J

Project Title: LTM Program – Seward Line Monitoring

Primary Investigator(s): Russ Hopcroft

PI Affiliation: UAF

Project Manager: ADFG

EVOSTC Funding Authorized To Date: \$258,300

FY12	FY13	FY14
\$98,100	\$59,900	\$100,500

Additional EVOSTC Funding Requested: \$211,700

FY15	FY16
\$104,000	\$107,700

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$470,200

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$300,000	\$400,000	\$400,000	\$400,000	\$400,000	\$1,900,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

The ocean undergoes year-to-year variability in the physical environment, superimposed on longer-term cycles, and potential long-term trends. These variations influence ocean chemistry, and propagate through the lower trophic levels, ultimately influencing fish, seabirds and marine mammals. Over the past 50 years the Northern Pacific appears to have undergone at least one clear “regime shift,” while the last 12 years have seen multi-years shifts of major atmospheric indices, leaving uncertainty about what regime the coastal Gulf of Alaska is currently in. Regime shifts are often expressed as fundamental shifts in ecosystem structure and function, such as the 1976 regime shift that resulted in a change from a shrimp dominated fisheries to one dominated by pollock, salmon and halibut. Long-term observations are also critical to describe the current state, and natural variability inherent in an ecosystem at risk of significant anthropogenic impact. Given the potential for such profound impacts, this proposal seeks to continue multidisciplinary observations which began in 1997 along the Seward Line and in PWS that assess the current state of the Northern Gulf of Alaska, during 2012-2017. Such observations form critical indices of ecosystems status that help us understand some key aspects of the stability or change in upper ecosystems components for both the short and longer-term. By analogy, the weather has been for more than a hundred years, yet regular observations are still needed to know what is happening and what can be expected in the near future.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments.

Public Advisory Committee Comments – FY14

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/June 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-K

Project Title: LTM Program – Continuing the Legacy: Prince William Sound Marine Bird Population Trends

Primary Investigator(s): Kathy Kuletz

PI Affiliation: USFWS

Project Manager: USFWS

EVOSTC Funding Authorized To Date: \$441,600

FY12	FY13	FY14
\$206,500	\$24,200	\$211,100

Additional EVOSTC Funding Requested: \$239,900

FY15	FY16
\$24,200	\$215,700

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$681,700

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$56,000	\$22,000	\$56,000	\$22,000	\$56,000	\$212,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

We propose to conduct small boat surveys to monitor abundance of marine birds in Prince William Sound, Alaska, during July 2012, 2014, and 2016. Eleven previous surveys have monitored population trends for marine birds and mammals in Prince William Sound after the *Exxon Valdez* oil spill. We will use data collected to examine trends from summer to determine whether populations in the oiled zone are increasing, decreasing, or stable. We will also examine overall population trends for the Sound. Continued monitoring of marine birds and synthesis of the data are needed to determine whether populations injured by the spill are recovering. Data collected from 1989 to 2010 indicated that pigeon guillemots (*Cepphus columba*) and marbled murrelets (*Brachyramphus marmoratus*) are declining in the oiled areas of Prince William Sound. We have found high inter-annual variation in numbers of some bird species and therefore recommend continuing to conduct surveys every two years. These surveys are the only ongoing means to evaluate the recovery of most of these injured marine bird species. Surveys would also benefit the benthic monitoring and forage fish monitoring aspects of the Long-term Monitoring Project as well as the Herring Project.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

The Science Panel agrees that continuing the long-term monitoring of marine birds in Prince William Sound (since 1989) is important, given that some species (pigeon guillemots and marbled murrelets) are still declining in oiled areas. We also agree that the high inter-annual variation in numbers of some bird species is problematic, and hence, we question whether maintaining biennial sampling is sufficient to detect trends in recovery. Annual sampling may be needed to better couple variation in bird abundances with ocean conditions, and thereby improve our understanding of factors affecting the recovery of bird populations in PWS; however, it also would increase the budget substantially. In light of this, we recommend that the PIs review the purpose and goals of sampling and that the sampling frequency be carefully reconsidered, in part by using a power analysis of impacts of alternative survey frequencies.

Science Coordinator Comments – FY14**Date: September 2013**

In concur with the Science Panel but I do not agree that more frequent sampling may be necessary.

Public Advisory Committee Comments – FY14

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

Executive Director Comments – FY14**Date: October 2013**

I concur with the Science Panel but do note that the sampling frequency has been reviewed by the Panel in the past with varied recommendations. Suffice to say, issues regarding budget and purpose remain and should be continued to be revisited by the PIs.

Trustee Council Comments – FY14**Date: October 2013**

There are no project specific comments.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel Comments – FY12**Date: June 2011 – Individual Panel Member Comments****Individual Comment 1:**

Seabird monitoring costs double in year 3 – The explanation is clear, although the basis for why two surveys may be needed in year 3 and what is lost when only 1 is done is unclear

Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-L

Project Title: LTM Program – Long-term monitoring of Ecological Communities in Kachemak Bay: a comparison and control for PWS

Primary Investigator(s): Brenda Konar

PI Affiliation: UAF

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$144,400

FY12	FY13	FY14
\$48,100	\$48,200	\$48,100

Funding includes 9% GA

Additional EVOSTC Funding Requested: \$95,500

FY15	FY16
\$48,100	\$47,400

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$239,900

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. As part of this component, we monitor rocky intertidal, seagrass and clam gravel beach systems as well as the sea otter abundance and diet in Kachemak Bay. This component is complementary to work being conducted under this program in Prince William Sound and Katmai.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-M

Project Title: LTM Program – Long-term killer whale monitoring

Primary Investigator(s): Craig Matkin

PI Affiliation: North Gulf Oceanic

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$272,800

FY12	FY13	FY14
\$7,200	\$132,300	\$132,300

Additional EVOSTC Funding Requested: \$265,800

FY15	FY16
\$132,300	\$132,300

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$536,100

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$23,500	\$23,500	\$23,500	\$23,500	\$23,500	\$117,500

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

The proposed project is a continuation of the annual monitoring of AB pod and the AT1 population killer whales in Prince William Sound-Kenai Fjords. These groups of whales suffered significant losses at the time of the oil spill and have not recovered at projected rates. Monitoring of all the major pods and their current movements, range, feeding habits, and contaminant levels will help determine their vulnerability to future perturbations, including oil spills. The project also extends the scope of the basic monitoring to include an innovative satellite tagging program used to examine habitat preference, feeding ecology and assist in relocating whales for feeding studies. It continues examination of feeding habits using observation, prey sampling and innovative chemical techniques. The study will delineate important habitat, variations in pod specific movements and feeding behavior within a temporal and geographic framework. We will examine the role of both fish eating and mammal eating killer whales in the near-shore ecosystem and their impacts on prey species. Community based initiatives, educational programs, and programs for tour boat operators will continue to be integrated into the work to help foster restoration by improving public understanding and reducing harassment of the whales.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments

Project Number: 15120114-N

Project Title: LTM Program – Long-term monitoring of humpback whale predation on Pacific herring in Prince William Sound

Primary Investigator(s): John Moran

PI Affiliation: NOAA

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$395,800

FY12	FY13	FY14
\$127,400	\$128,800	\$139,600

Additional EVOSTC Funding Requested: \$196,000

FY15	FY16
\$141,600	\$54,400

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$591,800

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$83,500	\$74,700	\$75,000	\$78,500	\$25,000	\$336,700

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. We will evaluate the impact by humpback whales on Pacific herring populations in Prince William Sound. Following protocols established during the winters of 2007/08 and 2008/09 (EVOSTC project PJ090804). We will continue to monitor the seasonal trends and abundance of humpback whales in Prince William Sound. Prey selection by humpback whales will be determined through acoustic surveys, visual observation scat analysis and prey sampling. Chemical analysis of blubber samples (stable isotopes and fatty acid analysis) will provide a longer term perspective on whale diet and shifts in prey type. These data will be combined in a bioenergetic model to determine numbers of herring consumed by whales, with the long term goal of enhancing the age structure modeling of population with better estimates of predation mortality.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

This proposal was praised by the Science Panel for their importance, inclusion of detail, and significant progress.

Science Coordinator, Executive Director Comments – FY14**Date: September and October 2013**

We concur with the Science Panel

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Trustee Council Comments – FY14**Date: October 2013**

There are no project specific comments

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments

Project Number: 15120114-O

Project Title: LTM Program – Monitoring long-term changes in forage fish distribution, abundance, and body condition in Prince William Sound.

Primary Investigator(s): John Piatt

PI Affiliation: USGS

Project Manager: USGS

EVOSTC Funding Authorized To Date: \$614,900

FY12	FY13	FY14
\$209,900	\$202,500	\$202,500

Additional EVOSTC Funding Requested: \$352,800

FY15	FY16
\$202,400	\$150,300

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$967,600

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$297,200	\$297,200	\$297,200	\$297,200	\$72,200	\$1,261,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. In response to a lack of recovery of wildlife populations following the *Exxon Valdez* Oil Spill (EVOS), and evidence of natural background changes in forage fish abundance, there was a significant effort to document forage fish distribution, abundance, and variability in Prince William Sound (PWS) since the 1990's. We propose to adopt some of these earlier sampling techniques, and also incorporate new methods to monitor forage fish in Prince William Sound with fishing and acoustic surveys of forage fish, and to measure indices of forage fish condition.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

The Panel commends the PI's on the high degree of collaboration with projects in both Programs.

Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

We concur with the Science Panel.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-P

Project Title: LTM Program – GAK1 Monitoring

Primary Investigator(s): Tom Weingartner

PI Affiliation: UAF

Project Manager: ADFG

EVOSTC Funding Authorized To Date: \$337,700

FY12	FY13	FY14
\$109,500	\$112,500	\$115,700

Additional EVOSTC Funding Requested: \$241,600

FY15	FY16
\$119,000	\$122,500

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$579,200

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al.

This program continues a 40-year time series of temperature and salinity measurements at hydrographic station GAK 1. The data set, which began in 1970, now consists of monthly CTDs and a mooring with 6 temperature/conductivity recorders throughout the water column and a nitrate sensor at 150 m depth. The project monitors four important Alaska Coastal Current ecosystem parameters that will quantify and help understand interannual and longer period variability in:

1. Temperature and salinity throughout the 250 m deep water column,
2. Near surface stratification,
3. Near and subsurface nitrate supply on the inner shelf.

In aggregate these variables are basic descriptors of the Alaska Coastal Current, an important habitat and migratory corridor for organisms inhabiting the northern Gulf of Alaska, including Prince William Sound.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-R

Project Title: LTM Program – Long-Term Monitoring: Nearshore Benthic Ecosystems in the Gulf of Alaska

Primary Investigator(s): Brenda Ballachey

PI Affiliation: USGS

Project Manager: USGS

EVOSTC Funding Authorized To Date: \$918,400

FY12	FY13	FY14
\$282,400	\$304,100	\$331,900

Additional EVOSTC Funding Requested: \$641,500

FY15	FY16
\$309,560	\$331,900

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$1,559,860

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$274,000	\$274,000	\$274,000	\$274,000	\$274,000	\$1,370,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of Gulf Watch Alaska: Integrated Long-Term Monitoring of Marine Conditions and Injured Resources and Services. For the Nearshore Benthic ecosystem component, we have implemented a long-term monitoring program at five locations across the GOA, including sampling areas in Western, Northern and Eastern Prince William Sound (PWS), Kenai Fjords National Park, and Katmai National Park and Preserve. Additional nearshore sampling as part of Gulf Watch Alaska is ongoing in Kachemak Bay (Project 12120114-L) and is closely coordinated with this project. The Gulf Watch Alaska nearshore program is integrated with nearshore monitoring implemented in 2006 by the National Park Service to cost-effectively monitor nearshore ecosystems across the central and western Gulf of Alaska, including spill-affected areas, and provide information on recovery and restoration of injured resources. We propose to (1) continue sampling Katmai NPP, Kenai Fjords NP, and Western PWS annually (2015 & 2016; all 3 areas previously sampled in multiple years starting in 2006), and (2) sample Northern PWS in 2015 (previously sampled in 2013) and Eastern PWS in 2016 (previously sampled in 2012 and 2014). We will continue to coordinate with the ongoing nearshore monitoring program in Kachemak Bay. Monitoring metrics include marine invertebrates, kelps, sea grasses, birds, mammals, and physical parameters. In addition to taxa-specific metrics, monitoring includes recognized important ecological relations that include predator-prey dynamics, measures of nearshore ecosystem productivity, and contamination. The nearshore benthic monitoring program also will integrate physical data collected in PWS, along the GOA shelf and in Cook Inlet, under the Environmental Drivers component of the GWA long-term monitoring program.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120114-S

Project Title: LTM Program – Lingering Oil - Extending the Tracking of oil levels and weathering (PAH composition) in PWS through time

Primary Investigator(s): Mark Carls

PI Affiliation: NOAA

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$41,400

FY12	FY13	FY14
\$19,600	\$13,100	\$8,700

Additional EVOSTC Funding Requested: \$175,700

FY15	FY16
\$169,200	\$6,500

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$217,100

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et al. The goal is to provide the EVOSTC with an assessment of persistent Exxon Valdez oil in Prince William Sound, describe its chemical characteristics, and initiate a routine, long-term monitoring program that will resample the same sites every five years over the next 20 years. Beaches will be sampled similar to surveys conducted by Auke Bay Laboratories during 2001-05 and sediment samples will be collected to estimate amounts of remaining oil. Mussel and passive samplers will provide information about biologically available oil. Objectives are 1) fingerprint oil, 2) determine oil persistence and weathering over decades, 3) determine oil sources, 4) determine biological availability, and 5) archive hydrocarbon data in the Trustee-sponsored hydrocarbon database. These data, together with an ongoing retrospective analysis of biomarkers, the most environmentally persistent components of the oil, will help investigators understand potential exposure levels (past and present) and linkages to species at higher trophic levels.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15.**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

This is one of the few projects presenting data, and it was “refreshing.” The hydrocarbon database is important to assess environmental damage in the event of another oil spill, and it may be still relevant to biological assessments of long-term oil impacts and perhaps to re-opener disputes. The PI’s indicate that there are not enough funds for complete updating and QA/QC of the database with 1-person/yr effort. If so, arrangements should be made to correct this oversight. If the solution is to request additional funds, then a detailed supplemental proposal should fully justify this request. In general, the Science Panel requests that fundamental information on the numbers and locations of sampling be included in future project proposals and reports

Science Coordinator, Executive Director Comments – FY14**Date: September and October 2013**

We concur with the Science Panel.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments

Draft 10-20-14

Project Number: 15120120

Project Title: LTM Program –Collaborative Data Management and Holistic Synthesis of Impacts and Recovery Status Associated with EVOS

Primary Investigator(s): Matthew Jones

PI Affiliation: NCEAS

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$1,253,600

FY12	FY13	FY14
\$416,800	\$464,700	\$372,100

Additional EVOSTC Funding Requested: \$453,100

FY15	FY16
\$379,200	\$73,900

Requests include 9% GA

Total EVOSTC Funding (Authorized and Requested): \$1,706,700

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

The AOOS-led Long-Term Monitoring (LTM) and the PWSSC-led Herring Research and Monitoring (HRM) programs propose an ambitious monitoring and research agenda over the next five years. These efforts could facilitate a more thorough understanding of the effects of the oil spill if the new data and information on the spill-affected ecosystems are effectively managed and collated along with historical data on these systems, and then used in a comprehensive synthesis effort. We propose a collaboration among NCEAS and the AOOS LTM and HRM teams to help build an effective data management cyber-infrastructure for proposed monitoring efforts and organize these data with historical data, including previous EVOSTC-funded efforts, to prepare for synthesis and ensure all data are organized, documented and available to be used by a wide array of technical and non-technical users. Building on the LTM and HRM syntheses and modeling efforts and the 20-year historical data from EVOSTC projects and any available current data, NCEAS would convene two cross-cutting synthesis working groups to do a full-systems analysis of the effects of the 1989 oil spill on Prince William Sound and the state of recovery of the affected ecosystems.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

The Panel strongly encourages the two NCEAS working group leads attend the February 2015 Program synthesis meeting.

Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

We concur with the Science Panel.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator Comments – FY14**Date: September 2 and October 013**

There are no project specific comments.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

Executive Director Comments – FY14**Date: October 2013**

NCEAS appears to be working quickly to process the inherently difficult historical data recovery in preparation for their future synthesis efforts, and in spite of what appears to be a more limited involvement regarding collaborating on methods for processing current data. There remains unanimous Panel concern regarding the Programs' data management, as captured in the FY12 Panel comments below.

Trustee Council Comments – FY14**Date: October 2013**

The Council requests the Team Leads and PIs within the Long-Term Programs in Project numbers 14120111 and 14120114 work with EVOSTC staff to address Science Panel and EVOSTC staff comments in the Fiscal Year 2014 Work Plan and participate in a Long Term Programs' Data Review Meeting with EVOSTC and Trust Agency Staff.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Not reviewed due to the lack of a quorum at their meeting No individual comments were received

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel Comments – FY12

Date: April 2011

These comments are from the two Science Panel members that have been tasked by the panel to work with the EVOSTC staff on the data management and synthesis topic. The Panel does not believe that Axiom currently has the capacity to conduct the most effective management of the data. The biological investigations produced by the suite of projects included in this proposal package generate data that are challenging to code in ways that facilitate their combination with other data such as physical or chemical variables. The discipline that handles these challenges is known as informatics. The Science Panel views the inexperience of Axiom personnel as a critical problem. This concern does not imply inadequate capability of the key staff of Axiom. It is a reflection of their limited experience. Consequently, establishing a partnership between Axiom and NCEAS makes sense because Matt Jones and NCEAS are willing to share their cutting-edge expertise. NCEAS is the “National” Center for Ecological Analysis and Synthesis and the principals of the NCEAS proposal are leaders in this field. Pairing NCEAS with Axiom, would promote information sharing of NCEAS’ expertise, such as emerging data standards as DateOne and on a suite of data manipulation and synthesis tools, such as meta-analysis methods. This information transfer represents critical capacity building within Alaska that would greatly benefit EVOSTC, AOOS, NPRB, and other important research and monitoring enterprises. The willingness of NCEAS to collaborate with Axiom is evident from their proposals and discussions with Rob Bochenek, Elise, Molly, and others. Nevertheless, the most creative and appealing aspect of the proposal provided by NCEAS, and which builds on technical metadata processing that NCEAS excels in, relates to the second phase of work – the synthesis activities. Some syntheses have indeed been supported by the EVOS Trustee Council over the years. These include very important outputs of the program – a synthesis of novel oil toxicity mechanisms in pink salmon by Rice et al. 2003, a book edited by Spies that placed the oil and natural resources of coastal Alaska in a context of changing climate, reviews of the delayed and indirect mechanisms by which EVOS oil caused ecological injuries by Peterson et al. (2003), and reviews of multi-year EVOS oil persistence on Alaskan beaches by Short and colleagues.

Phase II of the NCEAS proposal promises facilitation of just such synthesis outputs. This activity is extremely important for both the Herring and especially the Long-term Monitoring programs. The Panel recommends funding of this Phase II, under conditions that reflect engagement of the PIs from these two programs to develop the questions to be addressed and help select the experts who will participate in the study groups and synthesis efforts. The Panel notes that failure to solve the problem of creating an enduring depository for EVOS-Trustee funded data is a long-standing problem. At least 10 years ago, the EVOS Trustee Council and staff endorsed the responsible and ethically necessary principle that each study funded by the Council must deliver all resulting data in electronic form to the council staff as part of their final reporting obligations. Despite this mandate, there exists now no data base of the historically-funded projects. This issue has great capacity to embarrass the Council and the memory of the past failures motivates the Panel to recommend finally solving this problem by engaging the undeniable expertise and preeminence of NCEAS to collaborate in this venture.

Science Coordinator Comments – FY12

Date: April 2011

I concur with the Science Panel and strongly recommend that this proposal be funded. Data may be the single largest legacy of these programs and it is critical that the work starts on the strongest foundation possible.

Draft 10-20-14

Public Advisory Committee – FY12**Date: July 2011**

Issues raised by the Science Panel, Trustee Council staff, and the PAC called for additional work and collaboration to assist with establishment of a data management system that includes accessible scientific data as well as public information. French noted that he had no problem with either NCEAS or Woods Hole—he questioned Axiom's role and staying power. French said he supported the NCEAS and Axiom collaboration. Chairman Eilo summed the PAC interest in the Trustee Council implementing a solid data management, synthesis, and public access system.

Executive Director Comments – FY12**Date: July 2011**

I also strongly concur with the Science Panel and science coordinator. The PAC was also strongly in favor of this very important collaboration, historical data recovery and the synthesis work.

Project Number: 151⁵/20114-T
Project Title: LTM Program – Supplemental Data Management
Primary Investigator(s): Rob Bochenek
PI Affiliation: Axiom Consulting **Project Manager:** NOAA

EVOSTC Funding Authorized To Date: \$0

FY12	FY13	FY14
\$0	\$0	\$0

Additional EVOSTC Funding Requested: \$354,400

FY15	FY16
\$174,200	\$180,200

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$354,400

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$698,000	\$700,000	\$1,398,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/2/14.*

The EVOSTC Long Term Monitoring (LTM) and Prince William Sound Herring Research and Monitoring (PWS Herring) programs propose an ambitious monitoring and research agenda. These efforts could facilitate a more thorough understanding of the effects of the oil spill if the new data and information on the spill-affected ecosystems are effectively managed and collated along with historical data on these systems. Based on feedback acquired from the EVOSTC Science Panel and staff, we propose a supplemental data management effort to execute on major tasks that have been deemed of high importance but are not being addressed by existing data management projects supporting EVOSTC programs (Projects 1412011D and 1412011C). This project proposes to increase the data management support for both LTM and PWS Herring programs by (1) establishing a data coordinator position to improve metadata quality and best practices. Investigators also propose to process primary data into preservation-ready formats ensuring long term preservation of the data resource. Furthermore, this project will (2) develop mechanisms to transfer and integrate LTM and PWS Herring program data products into DataONE and (3) National Oceanographic Data Center and the (4) United States Geological Survey Ocean Biogeographical Information System (OBIS-USA).

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund Reduced	Fund Reduced	Fund Reduced	Fund Reduced	

Science Panel Comments – FY15**Date: September 2014**

The possibility of AOOS joining the DataOne system was discussed at the March 2014 Data Meeting as a way to ensure that the data collected as part of the Programs would be available to the widest audience possible. After reviewing the submitted proposal and the budget clarification provided, we would support the funding of the Data Coordinator position and the tasks associated with becoming a DataOne node. The Data Coordinator position should only be funded for the task of preparing the resource maps for data collected as part of the Council funded Programs. We would recommend that the funding of the NODC and OBIS Submission and associated staff time be considered at a later date.

Science Coordinator Comments – FY15**Date: September 2014**

I concur with the Science Panel and recommend funding for Tasks 1 and 2 for FY15. The total I recommend for funding is \$121,802 for FY15 which includes 9% GA

PAC, Executive Director Comments – FY15**Date: October 2014**

We concur with the Science Panel and Science Coordinator

EVOSTC Long-Term Herring Monitoring and Research Program Projects

Project Number: 15120111

Project Title: PWS Herring and Monitoring Program

Primary Investigator(s): Scott Pegau

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized to Date: \$3,721,372

FY12	FY13	FY14
\$1,027,225	\$1,264,818	\$1,429,329

Additional EVOSTC Funding Requested: \$2,606,999

FY15	FY16
\$1,365,678	\$1,241,321

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$6,328,371

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$154,731	\$0	\$154,731

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

The goal of the Herring Research and Monitoring program is to improve the predictive models of herring stocks through observations and research. The program is designed around a twenty year time frame with changes in emphasis of the process studies every five years. During this period we have four objectives to help us move towards our goal. They are: Provide information to improve input to the age-structure-analysis (ASA) model, or test assumptions within the ASA model. Inform the required synthesis effort. Address assumptions in the current measurements. Develop new approaches to monitoring. A combination of monitoring and process studies will be used to address these objectives. The monitoring projects follow changing conditions and provide inputs to modeling efforts. The process studies are designed to be much shorter and to answer a very specific question. The monitoring components include tracking the prevalence of disease, aerial surveys, increased adult biomass surveys, and juvenile condition and biomass surveys. All of the monitoring components address the first objective.

There are eighteen studies that range in length of one to five years designed to address the different objectives. To address the first objective we are examining the age that fish join the spawning stock, the genetic structure, and examining the approaches available to model herring stocks. To address the second objective we are working on gathering relevant datasets and providing visualization, conducting an analysis using the herring scale library owned by ADF&G, and providing coordination between projects to examine the connectivity. To address the third objective there are intensive studies of juvenile condition and acoustic estimates of juvenile populations, trying to determine if immigration may impact our surveys, providing validation to the acoustic surveys, and conducting laboratory studies of disease. We are looking to herring tagging, disease forecasting, and non-lethal acoustic validation to address the last objective.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Draft 10-20-14

Science Panel Comments – FY15

Date: September 2014

This year, the Panel was pleased to see improvement in this year's proposals regarding QA/QC of data collection and integration of projects, including the proposals by Bishop and Pegau (aerial survey). The revised reporting forms also prompted greater inclusion of benchmark results, publications and changes to work plans

Next year, the Panel would like to see improvements in:

Inclusion of fundamental information

The Panel would like to see the inclusion in proposals of information regarding the 1) approach, design and analysis of studies and 2) explicit statements of how analyses are answering major questions. This key information is essential to evaluating proposals, and we expect to see brief descriptions included in the next set of proposals. We are not requesting that detailed descriptions be provided to the degree exhibited in original proposals or publications, PIs should use their expertise to identify and include essential, fundamental information that should be included to facilitate review. Good examples of the level expected detail include the GulfWatch proposals by Carls, Jones, and Piatt and the Marine Debris Removal proposal by Pallister (available on the EVOSTC website)

The Science Panel would also appreciate having more detail about how the herring programs contribute to the existing and proposed herring assessment process and model. In particular it would be useful to have a short paragraph on each of the tuners used in the model: spawn assessments and acoustic data

The Panel appreciates that any additional requests for information in proposals can be perceived as onerous and that the Panel had indicated in prior years that they did not want the entire original proposal text included every year. However, the minimal, essential information requested should not take long to incorporate and could remain in subsequent proposals. From a Panel perspective, proposals cannot be evaluated without key, fundamental information on major hypothesis and models, in part so changes to the design can be placed in proper context. We appreciate your efforts in refining your multi-year proposal submissions.

Planning Succession Necessitated by Attrition of Experienced Personnel

This continues to be an area of concern for the Panel. The departure of Michele Buckhorn, who serves as the lead PI for three of the twelve submitted projects, could have a large impact on the overall success of the Program. We understand from our discussion with Scott that they are working to address the issue but feel that this highlights the issue of a need for junior scientists to be trained within the projects so smooth transitions in scientific personnel.

The Panel continues to support efforts to increase future capacity with regard to PIs turnover and continues to encourage that post-docs be integrated into the programs.

Improved data submission by Herring Program PIs

We understand that many PIs in the Herring program are behind in providing metadata and data to the central data repository. With the new forms that have been developed, and the availability of assistance from Axiom staff, it is important for each PI to comply with the data submission requirements set forth as a condition of their funding.

Coordination & Collaboration/Synthesis

The Panel appreciated the programs' explicit statements recognizing the synergisms among project efforts. It is clear that most projects are already working together where it is practical or advantageous to the achieving the goals of individual projects. We also appreciated that the programs recognized the need to integrate data across projects to arrive at a synthetic view of the status and trends of herring populations in PWS. However progress in these areas will need to be more explicit and fully developed. Details provided to the Panel were too limited to be able to truly evaluate progress in this area. Discussion on the conference call with the PI was encouraging in that details of the stock models will be provided to the panel in advance of the February synthesis meeting.

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We look forward to seeing synthesis both within and across projects at the February synthesis meeting and view this as a critical checkpoint to assess progress of the program toward a synthetic understanding

Future Consideration

(1) Early life history There appears to be no effort made to examine distribution of herring larvae Larval surveys, especially when spread over time and space can be revealing about species composition and in some instances could provide auxiliary indices of abundance (such as CALCOFI) A focus of the predecessor SEA Program at PWSSC involved how physical transport of herring larvae may play important roles in transporting them to rearing and nursery areas, thereby influencing survival and abundance patterns Some linkage back to those concepts may be fruitful, especially given the extent of physical oceanographic information now available.

(2) Age at maturity It would be a relatively simple matter to examine the maturity of herring captured in the late winter By this time any herring that is set to mature will have developing gonads that can be examined macroscopically – and even histologically, using oocyte diameter as a criterion of maturation. Have such simple and inexpensive approaches been considered?

(3). Spawn Assessments. The questions that arise from spawn assessments are (1) the completeness in time and space, (2) the continuity of the survey effort over time, especially with changes in available resources; (3) the use of mile-‘days’ instead of cumulative distance, which is the measure used in most other parts of the coast, in the US and Canada For acoustic surveys, similar questions arise, especially about the continuity over time, etc The issue of stock assessment of herring, as one of the key forage species in PWS, is vital to much of the entire EVOSTC work and it is difficult to provide adequate assessment without larger agency-level effort. The existing PIs are highly qualified and well regarded, but it is clear that the development of a revised model will take some time There may be other, independent, sources that might provide such a revised model in the interim. Have such sources been considered?

(4) Climate change Climate change may affect various biological attributes of fish populations including growth and susceptibility of disease, etc.

(5) Anthropogenic changes. The impacts of anthropogenic changes related to fisheries, either extractive fishing or fish culture, could be useful.

Science Coordinator Comments – FY15

Date: September 2014

I concur with the Panel’s overall comments. I commend the Program for their high-level of coordination and collaboration both within the Program and with the local community I would also be interested in more detail regarding the incorporation of the projects data into the existing and proposed ASA model

PAC, Executive Director Comments – FY15

Date: October 2014

We concur with the Science Panel and Science Coordinator

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14

Date: September 2013

Proposals were lacking in detail, hindering their evaluation

There was not enough information provided for the Science Panel to evaluate the proposals and offer substantive suggestions In order to evaluate proposal merits, the Science Panel wanted to see more detail, including

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- Sampling design, locations and methods, including QA/QC of data collection
 - Approach to data analysis including statistical methods and/or relevant contrasts
 - Explicit statement of how analyses will answer the major questions
 - A discussion of results to date and any adjustments in project design in view of results
 - Explicit statement of how individual project results relate to or will be integrated into the broader program
 - The proposals should be reviewed as a whole by someone from the group before submission.

The panel, EVOSTC and agency staff will be looking at options for providing brief guidance and/or a form for the programs in advance of proposal drafting and submission to clarify expectations. When EVOSTC staff has a draft form or guidance, we will circulate it to the Team Leads for their feedback. There was also initial discussion regarding reporting which we will also circulate if it is further developed.

Publications

The Science Panel encourages investigators to publish their results in peer-reviewed journals to make their hard-won results available to wider scientific audience. This encouragement especially applies to young investigators who are establishing their careers. They may quickly become unable to compete for other jobs. We anticipate the FY17 Invitation will include an expectation to publish.

Data Management

The Science Panel is concerned about progress on data management. The data management proposal drew heavily on their old proposal without including sufficient updated evidence of interactions between the programs' PIs and the data management team. In addition, there does not appear to be a data management policy or QA/QC policy created as the programs approach Year Three. In addition, no milestones were reported in the newly submitted proposals, so it was difficult to gauge how much progress had been made in the last two years. Moreover, it was not clear how data would be available for synthesis. The panel recommends that the Council condition funding upon the creation of a credible and detailed data management policy and a QA/QC policy and include clear milestones in for their proposal.

Regarding a QA/QC policy, such a document is a basic need of any data management. We note too that instruments commonly need to be calibrated before and after use to be able to adjust for measurement drift, if it occurs. With two separate data centers operating under the EVOSTC program it is crucial that a high level of QA/QC be maintained. The Science Panel is concerned that adequate attention is not being devoted to this fundamental aspect of data management. It is particularly important to assemble complete metadata to ensure that long-term data sets can be verified and understood once the current participants have moved on to new positions. For example, EPA and NSF require detailed data management and QA/QC plans as part of all proposals. Large monitoring programs, such as NSF's LTER and oceanographic programs, devote considerable time and effort to addressing these critical needs.

Example As a specific example, the Ocean Tracking Network (OTN) has four nearly full-time people creating metadata forms that are required to be filled out, submitted and checked for QA-QC before data can be added to the database. Since OTN is currently adding equipment to tracking arrays in PWS, it would be particularly appropriate at this time to arrange communication between senior OTN data managers with EVOSTC program data PIs to ensure that data standards are adequate. As with OTN, and as emphasized in the initial funding of the EVOSTC programs, skilled data management resulting in data that can be relied upon by the scientific community and resource agencies will ultimately determine the long-term success and influence of the programs. The contact at OTN is Bob Branton (bob.branton@gmail.com) or (bob.branton@dal.ca).

Attrition of Experienced Personnel

The panel notes that it may be a challenge to replace experienced personnel retiring or transitioning out of the programs, but the need for their expertise remains. To address these changes, the panel suggests that the programs partner their junior PIs with newly recruited, experienced scientists. Where difficulties exist in filling key positions, the panel also suggests strategically tapping outside experts to review projects and provide

consultation and setting up a Post-Doc training program for the LTM and Herring projects. As experienced personnel leave the program either through retirement or departure, the salary savings could fund this kind of activity.

Potential Resource - The panel encourages the programs to consider options for developing concepts for postdoctoral programs that can help address these issues. The panel and the programs' internal panels and advisory groups can provide assistance in identifying potential post doc candidates who may be helpful to the programs. Intergovernmental Personnel Assignments and perhaps NRC Research Associate post-docs may also be a source for additional expertise and post-doc work.

Synthesis in Advance of February 2015 Workshop

There is concern from our review of the proposals that the programs are postponing work on synthesis until just before the Workshop. The programs should think through and create a step-by-step route and design for their 2015 synthesis so there is sufficient field time to work on it. This plan should include mechanisms and process. The part of synthesis that involves creation of and testing of models is best done by an iterative process in which modeling is sequentially tested by reference to new data and the models revised accordingly.

There was also a suggestion to focus on cross-cutting topical issues, such as acoustics and calibration. PIs with different expertise could be paired to initiate and encourage actual synthetic analyses and presentation in contrast to single PI presentations on isolated projects or topics. *Examples for pairings include:* disease and physiology, and modeling of herring movements and disease.

Herring Program Advisory Group, academic position suggestion

Some additional expertise that could assist with this group are Tim Essington (UW) and Alec McCall, SWFSC would also be a good choice for membership. *See also Attrition of Experienced Personnel, above.

Defining program priorities

There is a basic requirement of the herring program to develop a credible and defensible program/project to assess herring abundance. In practice this means the implementation of a modern stock assessment model. This requirement supersedes all others because virtually all other projects in the herring program, and some in the GulfWatch program, are dependent on the confidence levels associated with the herring assessments. Such assessment is essential even in the absence of any commercial fishery of in Prince William Sound, because herring abundance will impact so much of the ecology of other species.

Stock assessments usually are done by an agency, such as ADFG, but because of the importance of herring it is reasonable for other experts to develop a state-of-the-art age-structured stock assessment (ASA) model tailored for PWS herring, perhaps to be done cooperatively with ADFG. From the proposals this seems to be happening, but, in the opinion of the Science Panel, not rapidly enough. The concern with delay is that it will be difficult to fully appreciate many of the ecological processes of Prince William Sound unless there is a reasonable understanding of the abundance of herring. In other words, the scientific value of nearly all of the herring projects depends partly on the reliability of the herring assessments. Typically, an age-structure-assessment (ASA) model requires a 'tuner' or an independent dataset that provides a time-series index of abundance (i.e., to tune the model). For PWS herring there may be only two options: a time series of (i) spawn data or (ii) acoustic data. The problem is complex, because the time series of these two datasets are of differing length. Perhaps there are other data options, but the modelers need to ensure that they understand the strengths and limitations of all the data they use in the model. This is a task that requires experience.

It is important to note that, while acoustic estimates of abundance of herring are commonly used around the world, they seldom are used as stand-alone independent measures of biomass. Instead, they usually contribute time-series data to more complex models that incorporate age structure data and other information. If the available time series data (from spawn or acoustics) are not suitable for an ASA model, then other assessment models or approaches must be considered – and presumably this could involve acoustic approaches, or even

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simple models based mainly on spawn abundance data. Therefore a firm recommendation of the Science Panel is that the direction and requirements of the stock assessment process, through ASA models, should be clarified and evaluated as soon as possible.

We wish to further elaborate about why all the other herring projects are secondary in importance to stock abundance estimation. It is because much of the biology and life history of herring is impacted by density-dependent processes and this, in turn, can affect growth, maturation, migration, condition, disease and recruitment – all subjects of the proposals in the herring program. Herring abundance also affects other fauna, especially seabirds and marine mammals. Therefore, the Science Panel recommendation is that the assessment of herring abundance should get top priority, and proceed as vigorously and rapidly as possible. This is not to say that the other projects are unworthy or should stop – on the contrary. The assessment project, while vital, is among the most scientifically routine of the lot, because it involves the implementation of existing protocols and methodologies. That does not mean it is simple or easy to do, but it is not a ‘hypothesis testing’ enterprise in the usual sense. Nevertheless, the products of assessments will provide a basis for better science for almost all of the other projects. The common element on all the other projects, with the possible exception of some acoustics projects, is that they aim to determine why and how herring populations change – physiologically or ecologically. In a sense their value is dependent on the rigor of the herring abundance assessments.

What are the implications of this recommendation?

- (1) The project on ASA modeling work should be acknowledged as a priority (even a pre-requisite) among the other herring projects. It needs to be implemented rapidly because its requirements could impact that way that other projects develop, especially acoustic projects.
- (2) The immediate implication is that the development of a functional herring ASA model should be proceeding much more rapidly than indicated in the progress report. If this task cannot be implemented in a timely manner, then the herring program should consider other ways of getting this work done.
- (3) A longer-term implication is that some of the closely related projects that might provide input data to the ASA, especially some of the acoustic projects, could require modification or reconsideration. If the age-structured model cannot incorporate the acoustic data, as it is presently acquired, then the design of the acoustic programs should be adjusted and re-evaluated. However, this cannot be determined until the ASA model is functional and evaluated.
- (4) Once the ASA model is functional, then it should be formally reviewed by 1-2 independent (outside) experts to evaluate its formulation, application and efficacy. Such a review is a common practice and should culminate in a report that documents the review findings. This report would then provide direction about the data requirements for a reliable ASA model of PWS herring. (Note: this was a recommendation in the 2011 Science Panel report).
- (5) If the fully-developed ASA model cannot provide acceptable results because of the limitations of the input data, then other approaches to herring biomass assessments must be considered. These could include simpler models that rely more directly on acoustics or spawn deposition.

Inter-project cooperation and communication

The Science Panel acknowledges and salutes the efforts made to coordinate logistics of field projects, especially following a long period when PIs worked relatively independently on most projects. However we are not convinced that some of the individual projects are as well connected as they should be, in terms of communication among PI's. This comment is based on an apparent lack of connectivity among some of the proposals.

Project gap: microchemistry

The panel noted that the PWS herring population could have important spatial structure that might go undetected by genetic analysis of microsatellites. This could occur if PWS herring consist of a meta-population with spatially separate sub-populations that, nevertheless, have sufficient genetic exchange to preclude genetic detectable differentiation. Therefore it is important to re-examine this issue because the previous genetic work, conducted more than a decade ago, had a short duration and a limited number of probes. Based on the previous

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genetic study in Prince William Sound, and similar but more recent genetic analyses of other herring populations in the eastern Pacific, the panel does not anticipate that the current genetic studies will demonstrate new evidence of genetic variation within PWS. Instead these studies will probably provide important confirmatory evidence of a lack of genetic differentiation detectable within different parts of the Sound. Such evidence, however, would not necessarily mean that PWS herring lack any spatial variation.

It is possible that PWS herring constitute a meta-population consisting of several sub-populations that may have spatially distinct life histories for parts of their lives. If so, these populations could have different growth rates, and population parameters. Knowledge of such possible spatial structure is integral to understanding factors affecting the abundance of PWS herring. The absence of such understanding represents an ongoing gap in the program. Such a gap could be addressed by analyses of microchemistry of otoliths. Time spent by herring in different bays within PWS and the surrounding region, could be reflected in the chemical composition of otoliths that can be detected by analyses of microchemistry. This approach would have linkages to several other projects. Thus, the microchemistry approach would provide helpful new insights to ongoing projects while improving linkages among them.

The panel is aware of difficulties associated with previous attempts to examine microchemistry of herring. We acknowledge that microchemistry must be used carefully as a research tool, but point out that it can be a powerful and informative approach when done properly. For this reason we suggest that the herring program could consider the incorporation of this approach. For technical reasons, explained below, we further suggest that the optimal approach would be the examination of otoliths.

Regarding scales vs. otoliths. Herring scales may not be a good tissue for microchemistry, but otoliths may be useful. The main problem with scales is that herring resorb calcium and other minerals from their scales as they mature sexually. The effect does not interfere with annulus formation on scales but it could confound comparisons of putative population groups. This is not a concern for otoliths where, in theory, the chemical signatures are retained unchanged with age/time. The main concern with otolith collections is that they need to be collected and stored carefully prior to analysis. As they dry, otoliths tend to develop hairline cracks that can accumulate extraneous material – which again can confound results. *Potential Resource* - The current director of the UAF Alaska Stable Isotope Facility is Matt Woller. He is well respected and is an excellent collaborator. See. <http://ine.uaf.edu/werc/asif/>

Forage Fish

The Science Panel supports the enhanced attention to estimating population abundances of important forage fish in the Long-term Monitoring/Gulf Watch Project, while noting that the Herring Program will also be sampling forage fishes acoustically and during net tows, such as those planned to ground-truth acoustic signals. Except for herring itself, the early studies of EVOS impacts on the PWS ecosystem unfortunately failed to establish population assessment on any of the forage fishes of known significance to supporting higher-order predators: sand lance, capelin, and eulachon in particular. The Piatt project in LTM/Gulfwatch can serve as the centerpiece study of forage fish to which information gathered by PIs on other projects could be transferred to provide enhanced knowledge of abundances and dynamics of forage fishes.

Science Coordinator Comments – FY14

Date: September 2013

I concur with the Science Panel. I commend this program for its dedication to using local community resources when appropriate and its efforts to work together as a team. I concur with the Panel's comments regarding the overall poor quality of the proposals. Most proposals made no effort to even change the dates of their tasks and deliverables making it almost impossible to determine where the project was in meeting its objectives.

Public Advisory Committee Comments – FY14

Date: October 2013

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were
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submitted to the PAC; no individual comments were received.

Executive Director Comments – FY14

Date: October 2013

I concur with the Science Panel and Science Coordinator.

Trustee Council Comments – FY14

Date: October 2013

The Council requests the Team Leads and PIs within the Long-Term Programs in Project numbers 14120111 and 14120114 work with EVOSTC staff to address Science Panel and EVOSTC staff comments in the Fiscal Year 2014 Work Plan and participate in a Long Term Programs' Data Review Meeting with EVOSTC and Trust Agency Staff

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work

Science Coordinator, Executive Director Comments – FY13

Date: September 2012

We concur with the Science Panel

Public Advisory Committee Comments – FY13

Date: September 2012

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund
April 2011	Fund	Fund	Fund	Fund

Science Panel Comments – FY12

Date: June 2011 – Individual Panel Member Comments

Individual Comment 1:

Linkages among the projects are done in a thoughtful and detailed fashion. I see huge progress in how well the leaders of the herring program are viewing this Program as a whole and integrating its pieces. I commend the PIs. Specifically, the logistic coordination is compelling and achieves cost efficiencies as well as intellectual linkages. The temporal staging of various research efforts is likewise logical and well-conceived. And I concur that the acoustics studies do involve three different efforts with different gear, sampling methods, and targets, so that any synergies are limited, largely to whether adult herring are encountered during sampling targeting juveniles and this is addressed.

Date: April 2011

This program seeks to add to the existing body of knowledge that began under the PWS Herring Survey program in FY10. The proposed projects will provide both new and continuing information regarding the current status of herring in PWS. The data collected under this program will be made available to researchers and the public and will provide critical information for resource managers. The continuation of current outreach and education

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strategies from the PWS Herring Survey projects and the additional strategies in the proposal have the potential to provide effective means to disseminate information and engage the fishing community and other community members in understanding the results of the integrated monitoring program

The Panel recommends funding most components of this proposal, but reiterates the same serious concern about the data management components. Again the Science Panel strongly recommends that the Council provide assistance from an organization such as the National Center for Ecological Analysis and Synthesis (NCEAS) for peer review and technical assistance to the data management team

The success of this proposal will depend on the reliability of herring spawn surveys which are not part of the present groups of proposals. Herring assessments in PWS, and everywhere else in the eastern Pacific, use spawn surveys as an essential part of the assessment. The approach currently used in PWS differs from all others in the use of mile-days, whereas all other jurisdictions use a static measure of spawn, once spawning is completed. Also, the completeness of the spawn surveys has been questioned (Note: these comments should not be construed as criticism of ADFG or their staff because the panel recognizes the effort and dedication made by such staff. On the contrary, the comments and recommendations related to spawn surveys should be seen as an initiative to provide assistance to field staff associated with herring assessment. The benefits of such assistance will accrue both to the science and management of PWS herring). Nearly all of the proposals are predicated on the availability of reliable herring spawning biomass assessments that are, in turn, dependent on accurate spawn surveys. To provide credible support for these proposals and for management advice future estimation of spawn must be made with a level of accuracy that consistent with that used in other jurisdictions. To provide credible management advice future estimation of spawn must be made with a level of accuracy that is required to support the assessments. There are concerns that substantial amounts of spawn may have gone undetected in some years and that some of the past spawn estimates may have been made inaccurately through error in the estimated width and density of spawn. Such concerns may not be valid but there is no way to determine this without additional work. Therefore to evaluate whether the accuracy and reliability of present and past estimation of herring spawn in PWS is accurate, we recommend developing diver-assisted surveys. The Science Panel noted that diver surveys, yielded different results in the past (details provided in Recommendations to Team Leader). This would also include an assessment model and biological sampling review. Herring Stock Assessment Modeling. A Science Panel Recommendation for Review. Success of the herring program will depend on the reliability of ADF&G herring spawn surveys. Nearly all of the proposals are predicated on the availability of reliable herring spawning biomass assessments that are, in turn, dependent on accurate herring assessments. Herring assessments in PWS, like everywhere else in the eastern Pacific, use spawn surveys as an essential part of the assessment. The approach used in PWS, however, differs from all others in that PWS uses mile-days, whereas all other jurisdictions use a static measure of spawn, once spawning is completed. Herring assessments also rely on accurate bio-sampling for estimates of size and age of herring. Recently, the completeness of the spawn surveys has been questioned and many have questioned the reliability of the present assessments. Additional effort may be required for all aspects of herring assessments to ensure that they are done well and are well-regarded. These comments above should not be construed as criticism of ADFG or their staff, as their present staff is clearly dedicated and hard-working.

Science Coordinator Comments – FY12

Date: April 2011

I concur with the Science Panel. I also have serious concerns regarding the data program and would encourage the Council to assist the team by providing funding for a comprehensive review of the data program. I also concur with the Science Panel that the fundamental data that will be utilized by the program should be rigorously reviewed to ensure the best possible platform for the herring projects. I do believe that the data that has been gathered by ADF&G for PWS herring has been carefully gathered and reviewed. I would like to continue working with staff at ADF&G to determine what actions would have the greatest benefit to both the herring program and ADF&G managers. The possible addition of a staff position at ADF&G that would work closely with herring program would be of tremendous value to both the program and the management agency.

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Public Advisory Committee – FY12

Date: July 2011

The Science Panel said the response to their concerns and further coordination was good. The Alaska Department of Fish and Game will partially fund a herring liaison position. Improved modeling techniques will be included as a separate project (PI is Branch). Torie Baker stated that this type of effort is what is needed to help resource managers in their decision-making. It was moved by French, second by Anderson Faulkner that the PAC concurs with the Science Panel recommendation to fund the Branch modeling project. There were no objections.

Date: April 2011

The PAC supports funding the herring project proposal, noting that the PAC agrees with the Science Coordinator in that there are serious concerns regarding the data program and would encourage the Council to assist the project team by providing funding for a comprehensive review of the data program, and (amendment moved by Baker, second by Andersen Faulkner) further, the PAC supports additional discussions with the Alaska Department of Fish and Game on the use of the recommended dive surveys. The motion passed, with dissent by Brune and Bauer, based on Axiom's current past due deliverables.

The group discussed the herring proposal and the added value of the NCEAS data management addition. Catherine Boerner stated that the data was the "gold mine" of many of these projects, and needed to be made available over the long term—and the NCEAS team will assist in making this happen. Baker raised a question about the use of "outside" consultants versus Alaskans, and how the two would work together. Hsieh said that NCEAS is experienced in working with diverse groups and it was her impression, thus far, that Axiom would also be amenable to working with NCEAS. Brune questioned past due delivery of a product by Axiom, noting the Trustee Council policy to not fund organizations which were behind in deliverables—he believes Axiom should not be awarded additional work when there are outstanding deliverables, and that this sets a dangerous precedent. Fandrei agreed that this was an issue. Hsieh said she expected the outstanding deliverable to come in May. French said it was important that data not be proprietary so it would be publicly available. Amanda Bauer asked if there were other organizations that Axiom did work for. Hsieh mentioned several State and Federal agencies that are Axiom clients.

Executive Director Comments – FY12

Date: July 2011

There has been strong concern about the program's data manager serving the entire program. Since April, the data manager's work has been favorably reviewed, has submitted late deliverables to the Council and several data management options have been produced by this program and outside entities. These options presented are in conjunction with leaders in the field of heterogeneous scientific database management and are excellent options. I recommend the Council pursue one of these options to ensure successful management of the data produced by this and past Council-funded efforts.

In addition, the program and ADF&G have discussed what actions would enhance the program's value to the management of herring. Both entities recommend the Council fund 70% of a ADF&G biometrician III or a fisheries scientist I to coordinate with the herring program and to also focus on a modeling effort. This is included in our draft administrative budget and has the strong support of individual Science Panel members. We have continued to decrease our admin budget, but are also positioning our staff and agency staff to support the long-term programs.

Project Number: 15120111-A

Project Title: PWS Herring Program - Validation of Acoustic Surveys for Pacific Herring Using Direct Capture

Primary Investigator(s): Mary Anne Bishop

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$306,700

FY12	FY13	FY14
\$68,016	\$90,579	\$148,022

Additional EVOSTC Funding Requested: \$286,346

FY15	FY16
\$141,046	\$145,297

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$592,960

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

Acoustic surveys provide a relatively low-cost, remote sensing tool to estimate species-specific fish biomass and abundance. Interpreting acoustic data requires accurate ground truthing of acoustic backscatter to confirm species and length frequency of insonified targets. Since November 2012, juvenile and adult herring acoustic surveys have been conducted in November and late March, respectively. Pelagic trawls are the recommended method for validating species composition and for obtaining relatively unbiased information on length frequency distribution, age, and other biological information. Here we propose to use a low-resistance, light-weight midwater sweeper trawl capable of towing speeds (up to 3 knots) as a method to ground truth acoustic surveys for juvenile herring. Our pelagic trawl surveys will take place in conjunction with and onboard the same vessel as three studies in the PWS Herring Research and Monitoring program: a) Juvenile Herring Abundance Index (years 2-5); b) Acoustic Consistency: Intensive Surveys of Juvenile Herring (year 3). Because of concerns of the Alaska Department of Fish and Game, for the March Expanded Adult Herring Surveys (years 2-5) we are being required to use gillnets and jigging for validation. Our project will provide data on species composition and length frequency to aid in the interpretation of current and historical acoustic surveys. In addition it will provide adult herring samples to Alaska Department of Fish and Game for the adult herring age-structure-analyses model and will provide juvenile herring samples to researchers investigating juvenile herring fitness and disease. Our trawls will also provide fishery-independent surveys for non-herring species, thus increasing our knowledge of pelagic fishes in Prince William Sound.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

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Science Panel Comments – FY15

Date: September 2014

There is evidence of substantial, well-executed field work, and excellent support and integration with other projects

Science Coordinator, PAC, Executive Director Comments – FY15

Date: September and October 2014

We concur with the Science Panel

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14

Date: September 2013

It seems that Dr. Bishop is performing a 'service' to the other PI's, but an essential one, especially in the collection of herring samples. For this service the Science Panel applauds her efforts. It would be useful to know, however, how much of the total effort is actually dedicated to acoustic work. This proposal contributes to the cumulative cost of acoustic work in Prince William Sound – so between the three proposals by PI Buckhorn, and this, the total annual effort and cost of acoustic work is significant. This may be appropriate if acoustics has a central role by providing key data for annual abundance estimates. The rationale for this proposal is to validate an acoustic target using a single beam sounder. This is valid in the context of the present program but there may be a more fundamental question that has not been addressed – although it is not directed specifically at this project. Is the acoustic equipment being used the best for the job? If acoustic estimates were used as the ASA tuning index, how would any change(s) in the acoustic surveys (survey protocols, or equipment) affect the temporal integrity of the index? Similar questions were posed in the 2011 Science Panel report.

A different question. There is an interesting excerpt from the proposal "We recognize that a major deficit in the existing PWS Herring Survey program is the lack of an effective means of validating the acoustic signal. Fortunately, if we can establish through direct capture of insonified fish that certain patterns in echograms can be interpreted as different year classes of herring, *then we may be able to reanalyze historical acoustic measurements to better understand changes in juvenile herring populations.*" The suggestion is that acoustic strength estimates, obtained by field measurements in from this project, could be used to adjust results from past herring surveys. It is not clear who would do this retrospective analysis. Regardless, such a contribution would be welcome - with the caveat that the rationale and methodology must be documented and accessible, preferably in a published report.

Science Coordinator, Executive Director Comments – FY14

Date: September and October 2013

We concur with the Science Panel.

Public Advisory Committee Comments – FY14

Date: October 2013

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Trustee Council Comments – FY14

Date: October 2013

There are no project specific comments

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: June 2011**

There are no project specific comments.

Project Number: 15120111-C

Project Title: PWS Herring Program – Data Management Support

Primary Investigator(s): Rob Bochenek

PI Affiliation: Axiom Consulting

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$283,945

FY12	FY13	FY14
\$130,800	\$130,800	\$22,345

Additional EVOSTC Funding Requested: \$41,197

FY15	FY16
\$23,217	\$23,980

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$331,142

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$21,200	\$0	\$21,200

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

This project supports the EVOS Integrated Herring Research Program with critical data management support to assist study teams in efficiently meeting their objectives and ensuring data produced or consolidated through the effort is organized, documented and available to be utilized by a wide array of technical and non-technical users. This effort leverages, coordinates and cost shares with a series of existing data management projects, cyber-infrastructure and partnerships which contribute capacity and information to this effort. During year one and two, this project would focus on providing informatics support to streamline the transfer of information between various study teams and isolate and standardize historic data sets in the general spill affected area for use in retrospective analysis, synthesis and model development. This work would scale down in year three thru five to provide support for general project level data management and archival.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

It was encouraging for the Science Panel to hear via a conference call with Program Science Leads that the standardized forms for metadata submission had been recently modified, and a more refined version is now available to investigators. However, it was discouraging to learn that not all investigators were compliant on submission of both metadata and data in a timely manner (within one year of collection) as agreed upon when accepting funding from EVOSTC. In the future we see submission of required data and metadata as a condition of funding renewal.

Science Coordinator Comments – FY15**Date: September 2014**

I concur with the Science Panel and would be willing to assist with data compliance if desired.

PAC, Executive Director Comments – FY15**Date: October 2014**

We concur with the Science Panel.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund Conditional	Fund Conditional	Not Reviewed	Fund Conditional	Fund

Science Panel Comments – FY14**Date: September 2013**

Progress is listed as “Data is being archived on the Workspace by investigators in the program ” and “Data from the past two field seasons will be ingested into the data management system. We will continue to refine and expand the information available through the Herring data portal ” Please specify what data have been incorporated. Also, the demonstration of progress is not adequate. More detail is essential. Failing that, this project should be suspended. An inventory of all data proposed to be incorporated eventually into the program should be drawn up and an accounting of progress on incorporating the listed data sets should be reported annually, including any changes to the inventory of target datasets. The science panel is concerned about progress on data management. The data management proposal drew heavily on their old proposal without including sufficient updated evidence of interactions between the programs’ PIs and the data management team. In addition, there does not appear to be a data management policy or QA/QC policy created as the programs approach Year Three. In addition, no milestones were reported in the newly submitted proposals, so it was difficult to gauge how much progress had been made in the last two years. Moreover, it was not clear how data would be available for synthesis. The panel recommends that the Council condition funding upon the creation of a credible and detailed data management policy and a QA/QC policy and include clear milestones in for their proposal.

Regarding a QA/QC policy such a document is a basic need of any data management. We note too that instruments commonly need to be calibrated before and after use to be able to adjust for measurement drift, if it occurs. With two separate data centers operating under the EVOSTC program it is crucial that a high level of QA/QC be maintained. The Science Panel is concerned that adequate attention is not being devoted to this fundamental aspect of data management. It is particularly important that to assemble complete metadata to ensure that long-term data sets can be verified and understood once the current participants have moved on to new positions. For example, EPA and NSF require detailed data management and QA/QC plans as part of all proposals. Large monitoring programs, such as NSF’s LTER and oceanographic programs, devote considerable time and effort to addressing these critical needs. Example: As a specific example, the Ocean Tracking Network (OTN) has four nearly full-time people creating metadata forms that are required to be filled out, submitted and checked for QA-QC before data can be added to the database. Since OTN is currently adding equipment to tracking arrays in PWS, it would be particularly appropriate at this time to arrange communication between

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senior OTN data managers with EVOSTC program data PIs to ensure that data standards are adequate. As with OTN, and as emphasized in the initial funding of the EVOSTC programs, skilled data management resulting in data that can be relied upon by the scientific community and resource agencies will ultimately determine the long-term success and influence of the programs. The contact at OTN is Bob Branton (bob.branton@gmail.com) or (bob.branton@dal.ca).

Science Coordinator, Executive Director Comments – FY14

Date: September and October 2013

We concur with the Science Panel.

Public Advisory Committee Comments – FY14

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13

Date: September 2012

We concur with the Science Panel.

Public Advisory Committee Comments – FY13

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

Trustee Council Comments – FY14

Date

The Council requests the Team Leads and PIs within the Long-Term Programs in Project numbers 14120111 and 14120114 work with EVOSTC staff to address Science Panel and EVOSTC staff comments in the Fiscal Year 2014 Work Plan and participate in a Long Term Programs' Data Review Meeting with EVOSTC and Trust Agency Staff.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund
April 2011	Modify	Modify	Modify	Modify

Science Panel Comments – FY12

Date: April 2011

Gathering and making data available will be the keystone of this program. The Science Panel expressed serious concerns about past performance of some participants and that the data management team does not have sufficient expertise or scientific guidance to deliver a useable data system. In addition, it is not clear at all there is a plan for the inclusion of structurally diverse data: where and how will such data be organized so that relevant data and metadata from a broad array of disciplines can be assembled in one database. The panel viewed this as

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this as an informatics problem that, if not resolved at the onset, will jeopardize the long-term program. There is a very clear need to overcome critical technological impediments to accomplishing synthetic, integrative environmental science, while at the same time promoting more open access to information and data sharing. It is critical that this database be open source and be compliant with the Knowledge Network for Biocomplexity metadata compliant with Ecological Metadata Language. In addition, there should be a plan from the outset as to how to incorporate this data into NPRB's GOAIERP program at the end of the first five-year contract cycle.

Therefore, we strongly recommend that the Council provide assistance from an organization such as the National Center for Ecological Analysis and Synthesis (NCEAS) for peer review and technical assistance to the data management team. With regard to the separate lingering oil monitoring proposal included within the Program proposal, the Panel has no objection to the funding of this additional project. The Panel does not believe that Axiom currently has the capacity to conduct the most effective management of the data. The biological investigations produced by the suite of projects included in this proposal package generate data that are challenging to code in ways that facilitate their combination with other data such as physical or chemical variables. The discipline that handles these challenges is known as informatics. The Science Panel views the inexperience of Axiom personnel as a critical problem. This concern does not imply inadequate capability of the key staff of Axiom. It is a reflection of their limited experience. Consequently, establishing a partnership between Axiom and NCEAS makes sense because Matt Jones and NCEAS are willing to share their cutting-edge expertise. NCEAS is the "National" Center for Ecological Analysis and Synthesis and the principals of the NCEAS proposal are leaders in this field. Pairing NCEAS with Axiom, would promote information sharing of NCEAS' expertise, such emerging data standards as DateOne and on a suite of data manipulation and synthesis tools, such as meta-analysis methods. This information transfer represents critical capacity building within Alaska that would greatly benefit EVOSTC, AOOS, NPRB, and other important research and monitoring enterprises. The willingness of NCEAS to collaborate with Axiom is evident from their proposals and discussions with Rob Bochenek, Elise, Molly, and others. Nevertheless, the most creative and appealing aspect of the proposal provided by NCEAS, and which builds on technical metadata processing that NCEAS excels in, relates to the second phase of work – the synthesis activities. Some syntheses have indeed been supported by the EVOS Trustee Council over the years. These include very important outputs of the program – a synthesis of novel oil toxicity mechanisms in pink salmon by Rice et al. 2003; a book edited by Spies that placed the oil and natural resources of coastal Alaska in a context of changing climate; reviews of the delayed and indirect mechanisms by which EVOS oil caused ecological injuries by Peterson et al. (2003); and reviews of multi-year EVOS oil persistence on Alaskan beaches by Short and colleagues. Despite these valuable legacies, more synthesis is needed into the future, including on herring, where numerous potential explanations for its lack of recovery exist and a growing body of diverse data requires synthesis to extract now cryptic insights.

Phase II of the NCEAS proposal promises facilitation of just such synthesis outputs. This activity is extremely important for both the Herring and especially the Long-term Monitoring programs. The Panel recommends funding of this Phase II, under conditions that reflect engagement of the PIs from these two programs to develop the questions to be addressed and help select the experts who will participate in the study groups and synthesis efforts. The Panel notes that failure to solve the problem of creating an enduring depository for EVOS-Trustee funded data is a long-standing problem. At least 10 years ago, the EVOS Trustee Council and staff endorsed the responsible and ethically necessary principle that each study funded by the Council must deliver all resulting data in electronic form to the council staff as part of their final reporting obligations. Despite this mandate, there exists now no data base of the historically-funded projects. This issue has great capacity to embarrass the Council and the memory of the past failures motivates the Panel to recommend finally solving this problem by engaging the undeniable expertise and preeminence of NCEAS to collaborate in this venture.

Science Coordinator Comments – FY12

Date: April 2011

I concur with the Science Panel. I also have serious concerns regarding the data program and would encourage the Council to assist the team by providing funding for a comprehensive review of the data program. I also concur with the Science Panel that the fundamental data that will be utilized by the program should be rigorously

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reviewed to ensure the best possible platform for the herring projects. I do believe that the data that has been gathered by ADF&G for PWS herring has been carefully gathered and reviewed. I would like to continue working with staff at ADF&G to determine what actions would have the greatest benefit to both the herring program and ADF&G managers. The possible addition of a staff position at ADF&G that would work closely with herring program would be of tremendous value to both the program and the management agency.

Public Advisory Committee – FY12

Date: July

Issues raised by the Science Panel, Trustee Council staff, and the PAC called for additional work and collaboration to assist with establishment of a data management system that includes accessible scientific data as well as public information. In response, the National Center for Ecological Analysis and Synthesis (NCEAS) submitted a proposal to work with Axiom (a subcontractor to AOOS), and the Woods Hole Oceanographic Institution also submitted a proposal. Elements of both options were reviewed and discussed. Data management generally consumes about 30% of a research program budget; the costs for including one of these options for assistance remain within that range. French noted that he had no problem with either NCEAS or Woods Hole—he questioned Axiom’s role and staying power. McCammon said that Axiom would be a subcontractor to AOOS, had been doing cutting edge work, and was committed to the project—they have a 4-year contract. She also stated that the AOOS Board was committed to the project. French said he supported the NCEAS and Axiom collaboration. Eilo summed the PAC interest in the Trustee Council implementing a solid data management, synthesis, and public access system

Brune questioned past due delivery of a product by Axiom, noting the Trustee Council policy to not fund organizations which were behind in deliverables—he believes Axiom should not be awarded additional work when there are outstanding deliverables, and that this sets a dangerous precedent. Fandrei agreed that this was an issue. Hsieh said she expected the outstanding deliverable to come in May. French said it was important that data not be proprietary so it would be publicly available. Amanda Bauer asked if there were other organizations that Axiom did work for. Hsieh mentioned several State and Federal agencies that are Axiom clients. PAC agrees with the Science Coordinator in that there are serious concerns regarding the data program and would encourage the Council to assist the project team by providing funding for a comprehensive review of the data program.

Executive Director Comments – FY12

There has been strong concern about the program’s data manager serving the entire program. Since April, the data manager’s work has been favorably reviewed, has submitted late deliverables to the Council and several data management options have been produced by this program and outside entities. These options presented are in conjunction with leaders in the field of heterogeneous scientific database management and are excellent options. I recommend the Council pursue one of these options to ensure successful management of the data produced by this and past Council-funded efforts.

Project Number: 15120111-E

Project Title: PWS Herring Program – Expanded Adult Herring Surveys

Primary Investigator(s): Michele Buckhorn

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$159,000

FY12	FY13	FY14
\$6,540	\$84,366	\$68,125

Additional EVOSTC Funding Requested: \$333,945

FY15	FY16
\$90,579	\$84,366

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$333,976

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

Prince William Sound herring stock biomass estimates from hydroacoustic surveys provide a direct measure of the stock abundance and are also a primary input into the age-structured assessment (ASA) model that is the forecasting tool used for management. Prior to 2001, the hydroacoustic surveys were conducted exclusively by the Prince William Sound Science Center (PWSSC). Since 2001, the effort has been shared between PWSSC and the Cordova office of Alaska Department of Fish and Game (ADF&G). While the ADF&G considers the hydroacoustic surveys to be critical (Steve Moffitt, personal communication) the lack of a commercial herring fishery in PWS since 1998 has reduced management priorities for herring. Thus the PWSSC contribution has become critically important for the long-term, especially if a future fishery appears only a remote possibility. With the level of effort available over the past several years, PWSSC and ADF&G individually have achieved herring biomass estimates with a precision of about $\pm 30\%$, which is insufficient for management purposes. However, the combined effort currently meets management requirements for precision. Current stock assessment efforts by ADF&G resource managers in PWS focus on the largest spawning aggregations. The objective of this study is to increase the current survey area of adult spawning beyond the Port Gravina and Fidalgo areas to provide a more precise estimate of spawning biomass. We propose to extend the PWSSC acoustic surveys to help identify the relative contributions of additional spawning aggregations over temporal and spatial scales. This will help establish more accurate estimates of the total herring biomass in PWS and provide an alert to changes in biomass in different regions. Beginning in FY2013 and continuing until 2016, hydroacoustic surveys will be conducted in late spring (April-May) to assess adult spawning biomass. ADF&G will continue to conduct direct sampling for age/length/weight. Additional direct capture will be conducted using a midwater trawl at adult spawning sites (See Bishop proposal).

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

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Science Panel Comments – FY15**Date: September 2014**

An extract from the Executive Summary states is as follows: *"With the level of effort available over the past several years, PWSSC has achieved herring biomass estimates with a precision of about $\pm 30\%$* This level of precision is insufficient for management purposes. There is concern that some concentrations of fish are not located and surveyed under current levels, in which case the estimate is biased, a factor not incorporated into variance calculations for precision."

What level of precision would be acceptable for ADF&G? If, as indicated in the report, that the biomass estimates (based on incomplete acoustic data) may be unduly conservative, then it follows there should be some estimate of the time required to attain a degree of completeness that would be acceptable. Such clarification would be useful

Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

We concur with the Science Panel

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

If acoustic information is to be used for annual herring assessments (by ADFG or anyone else) then it would seem reasonable that there were some meaningful communication between the people doing the survey and those doing the assessments (see specific comments on the previous proposal).

Is there a data source, or database on areas that were 'historically surveyed'? If so, what or where is it? Will it be made available to the data synthesis projects? Has there been any effort made to report on these data? Because of PI departures, a very junior, although promising scientist without any peer-reviewed publications, is left alone to execute this project. The Science Panel urges engagement of a more senior experienced partner to help guide and enhance this project.

It is gratifying to see that samples from Kayak Island were made available to geneticists. However, there does not appear to be any reference to this in the genetics proposal.

Science Coordinator, Executive Director Comments – FY14**Date: September and October 2013**

We concur with the Science Panel.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Trustee Council Comments – FY14**Date: October 2013**

There are no project specific comments.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13**Date: September 2012**

I concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

Executive Director Comments – FY13**Date: September 2012**

I concur with the Science Panel.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: April 2011**

There are no project specific comments.

Project Number: 15120111-F

Project Title: PWS Herring Program – Juvenile Abundance Index

Primary Investigator(s): Michele Buckhorn

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$236,312

FY12	FY13	FY14
\$90,143	\$80,115	\$66,054

Additional EVOSTC Funding Requested: \$167,860

FY15	FY16
\$84,911	\$82,949

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$404,172

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

Management of the Pacific herring stock in Prince William Sound (PWS), Alaska, is based primarily on an age-structured-assessment (ASA) model. The current model, developed in 2005, incorporates both hydroacoustic estimates of the adult herring biomass and an index of the male spawning, called the “mile-days of spawn”. Unfortunately, the forecast is based on measurements from the previous year and does not have a direct measure of future age 3 recruitment. Current knowledge suggests that most mortality occurs during the first winter of life, so the relative recruitment may be fixed by the end of the first year. Consequently, estimates of relative abundance of age 1 and age 2 fish should provide an index of future recruitment. An index of age 0 fish would also provide a forecast of recruitment if additional information were available on the magnitude of the first year mortality. We will conduct annual fall surveys (FY2013-2016) of 8 bays; four of which will be the Sound Ecosystem Assessment (SEA) bays (Cooney et al. 2001). This will maintain a continual database from these locations. The other 4 bays will be selected based upon the survey results of the current EVOSTC FY10 Herring Survey Project (# 10100132). Surveys will be conducted using 120 kHz split-beam hydroacoustic unit in a stratified systematic survey design (Adams et al. 2006). For this study, direct capture will be directed to size and species composition. A midwater trawl will be used to sample randomized transects within each strata.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

The two projects, Juvenile Herring Abundance & Juvenile Intensive Surveys, have been in place for several years but the 2015 proposals did not provide any information on past results Why is that?

Science Coordinator Comments – FY15**Date: September 2014**

This project has provided status updates in its 2012 and 2013 Annual Reports. The proposal requirements did not request a discussion of past results

PAC, Executive Director Comments – FY15**Date: October 2014**

No project specific comment. Science Coordinator's comments are noted

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown Abstracts were submitted to the PAC, no individual comments were received

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: April 2011**

There are no project specific comments

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Project Number: 15120111-G

Project Title: PWS Herring Program – Intensive surveys of juvenile herring

Primary Investigator(s): Michele Buckhorn

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$126,440

FY12	FY13	FY14
\$50,140	\$29,757	\$46,543

Additional EVOSTC Funding Requested: \$6,758

FY15	FY16
\$6,758	\$0

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$133,198

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

Hydroacoustic surveys of juvenile herring nursery areas in Prince William Sound have been conducted during fall and late-winter for the last several years. The number of locations surveyed have varied from 5-9, including the 4 Sound Ecosystem Assessment (SEA) bays. However, each seasonal effort has conducted only a single night survey in each of these locations. Thorne (2010) examined seasonal changes from fall 2006 to spring 2009. He showed that apparent overwinter mortality of age 0 herring appeared to be greatest in Simpson Bay and least in Whale Bay. However, the differences in seasonal abundance could be attributed to mortality, emigration, or changes in ambient light. We propose to address these uncertainties with an intensive fall and late winter/spring intensive survey. The fall series will start mid-October 2014 and extend to the first week of December. The late winter/spring series will begin the 3rd week of February 2015, and extend into the 2nd week of April. We propose to conduct the surveys in two bays sufficiently adjacent to cover each bay each night, such as Simpson Bay, Port Gravina, Windy Bay or St. Mathews Bay. In addition to the hydroacoustic surveys, we propose a single night of direct capture effort in each location for each of the survey weeks (See Bishop, this proposal). The survey design will follow the historic zig zag transects run by Thorne since 1993 in order to remain consistent with that sampling design and to put the long term fall and spring surveys into context.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

The two projects, Juvenile Herring Abundance & Juvenile Intensive Surveys, have been in place for several years but the 2015 proposals did not provide any information on past results. Why is that?

Science Coordinator Comments – FY15**Date: September 2014**

This project has provided status updates in its 2012 and 2013 Annual Reports. The proposal requirements did not request a discussion of past results.

PAC, Executive Director Comments – FY15**Date: October 2014**

No project specific comment Science Coordinator's comments are noted

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

There is reference made to the assessment model but there is nothing in the new population dynamics proposal to indicate any meaningful communication between the acoustics work and the developing assessment models. Specifically, is it anticipated that data derived from acoustic surveys will be used as input to the assessment model? If so, it is important that there is an active dialogue among people working on inter-related projects.

This juvenile herring project is predicated on the assumption that it will provide a useful prediction of age-3 recruitment. If there were a commercial fishery this prediction could be especially useful but its value as a predictor would diminish if commercial fisheries for herring were not re-established. In any event such a juvenile index could provide a measure of first year survival, or 'over-wintering' survival, and then this could be useful, especially to the projects concerned with disease and 'condition'

Please clarify will the survey design in 2014 match that in 2013? Again, Dr. Buckhorn and the project could benefit greatly by engaging a senior collaborator for this project

Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

We concur with the Science Panel

Public Advisory Committee Comments – FY14**Date:**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed

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work.

Science Coordinator, Executive Director Comments – FY13

Date: September 2012

We concur with the Science Panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12

Date: April 2011

There are no project specific comments

Project Number: 15120111-H

Project Title: PWS Herring Program – Outreach & Education

Primary Investigator(s): Haley Hoover

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$79,679

FY12	FY13	FY14
\$16,459	\$30,520	\$32,700

Additional EVOSTC Funding Requested: \$74,229

FY15	FY16
\$35,970	\$38,259

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$153,908

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$50,000	\$50,000	\$65,000	\$65,000	\$0	\$230,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

The Outreach & Education project is designed to enhance the PWS Herring Program research activities by showcasing their relevancy, broadening their applicability and extending their impact to people in the community. PWSSC educators will work with PWS Herring Research and Monitoring principal investigators (PI) and project collaborators to prepare public education materials that communicate the purpose, goals and results of the research program to “non-scientist” audiences and stakeholders in communities in and beyond the spill affected area. Outreach and education products will extend and transfer Pacific herring and marine ecosystem information to inform the public of local research activities and improve their ecological and ocean science literacy.

The specific objectives of this proposal, which includes the outreach and education components of the PWS Herring Research and Monitoring Program, are to:

- 1) Disseminate PWS herring research information and lessons learned in this program to individuals, groups, policy makers, resource managers and institutions in PWS, including the effected fishing community.
- 2) Extend and transfer PWS herring research-based outreach and education products to general audiences in and beyond the spill affected areas of PWS.
- 3) Integrate community involvement into the planning and sampling programs through citizen science opportunities and public workshops

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Draft 10-20-14

Science Panel Comments – FY15**Date: September 2014**

The Science Panel appreciates the progress made on local outreach. One of the simplest ways to do this is to keep the website updated, because it is the portal to the outside world. However, we also recommend that investigators work with the outreach program to craft presentations that could be delivered at various venues (e.g., schools, Science Pubs). There was a comment in the proposal that there has been some difficulty getting PI's to commit to outreach efforts due to logistics. The location of the PI's should have little impact on their ability to participate in outreach efforts. Involvement of PIs in outreach activities can extend the reach of the program and improve the public's appreciation of what is being accomplished. We also encourage the outreach team to call and interview PI's to get information that would be beneficial to the outreach efforts.

Investigators responses to previous comments made by the science Panel suggested that funding is insufficient to expand outreach. The Panel feels that two people are being supported to complete this work, which is ample provided that the program prioritizes updating the website and working with PIs on presentations over local outreach.

Science Coordinator Comments – FY15**Date: September 2014**

I concur with the Science Panel. The website is listed as an outreach tool yet there is very little information about this Program. I struggled to find the Program specific webpage on the PWSSC site and there was almost no information for researchers or the public.

PAC, Executive Director Comments – FY15**Date: October 2014**

No project specific comment. Science Coordinator's comments are noted.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

Was there any attempt to coordinate output with Gulf monitoring group? As noted above, the Science Panel notes that there may be opportunities and requirements for increased communication among PI's within the herring project. A key point is how the different projects relate to each other, especially their connections or inter-dependences. This aspect was not well developed in this (2013) set of proposals. Perhaps this outreach project can assist in this regard?

Science Coordinator, Executive Director Comments – FY14**Date: September and October 2013**

We concur with the Science Panel.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Trustee Council Comments – FY14**Date: October 2013**

There are no project specific comments.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

I concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: April 2011**

There are no project specific comments

Project Number: 15120111-K

Project Title: PWS Herring Program – Herring Disease Program (HDP)

Primary Investigator(s): Paul Hershberger

PI Affiliation: USGS

Project Manager: USGS

EVOSTC Funding Authorized To Date: \$281,874

FY12	FY13	FY14
\$0	\$0	\$281,874

Additional EVOSTC Funding Requested: \$589,908

FY15	FY16
\$291,902	\$298,006

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$871,782

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$42,100	\$0	\$42,100

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

The Herring Disease Program (HDP) is part of a larger integrated effort, Prince William Sound Research and Monitoring (outlined in a separated proposal by Dr. Scott Pegau). Within this integrated effort, the HDP is intended to evaluate the impact of infectious and parasitic diseases on the failed recovery of the PWS herring population. The framework for the 2012 – 2016 HDP involves a combination of field surveillance efforts, field-based disease process studies, and laboratory-based controlled studies. Field surveillance efforts will provide continued and expanded infection and disease prevalence data for herring populations in Prince William Sound (PWS), Sitka Sound, and Puget Sound. During FY 2015 we will continue the health assessments of adult herring from Prince William Sound and Sitka Sound, we will continue to rear colonies of specific-pathogen-free Pacific herring for controlled studies in the laboratory, we will compare the relative sensitivities of four newly-developed diagnostic assays that are capable of identifying prior exposure to VHS virus in Pacific herring. Additionally, by employing the qPCR and chromogenic in situ hybridization tools that were developed as products of the HDP, we will begin searching for intermediate invertebrate hosts for *Ichthyophonus*.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

The Panel commends this project team for their outstanding record of scientific publication

Science Coordinator Comments – FY15**Date: September 2014**

I also commend the team for their efforts to publish their work in peer-reviewed literature.

PAC, Executive Director Comments – FY15**Date: October 2014**

We concur with the Science Panel and Science Coordinator.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

The Science Panel feels that this is probably one of the most important high-payoff programs within EVOSTC. Funding needs to continue and the incorporation of disease ecology needs to be somehow incorporated into models.

Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

We concur with the Science Panel.

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

Project Number: 15120111-L

Project Title: PWS Herring Program – Herring Condition Monitoring

Primary Investigator(s): Kristen Gorman

PI Affiliation: PWSCC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$469,221

FY12	FY13	FY14
\$0	\$230,620	\$238,601

Additional EVOSTC Funding Requested: \$505,433

FY15	FY16
\$251,572	\$253,861

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$974,654

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$42,431	\$0	\$42,431

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

Outlined here is a single herring monitoring project that is a part of an integrative program that will enhance the current herring monitoring efforts and examine aspects of particular life stages to allow better modeling of Prince William Sound herring populations. The long-term goal of the program is to improve predictive models of herring stocks through observations and research.

This project will be furthering the development of a herring overwintering mortality model that began with an ongoing monitoring project that began in 2007 and incorporates results from Prince William Sound herring research dating as far back as the 1990's. The model runs by applying herring condition observations made before and after winter. Accordingly, herring are sampled in November and the following March. Present sampling will end in March 2012. Proposed sampling will commence in November 2012 and end in March 2016. A future project is expected to continue the time series beginning in November 2016. The purpose of the time series is to relate overwinter mortality to herring recruitment.

This project will be furthering the development of a herring overwintering mortality model with additional data types as well energy levels per se. The goal is use physiological indicators to realistically modify the daily energy loss rate in the overwintering model. The results of model improvement will be tested using the March data model validation approach begun during the project that began in 2007.

Additionally, we will be assessing effects of competition of other juvenile fishes on condition of age-0 herring using stable isotope analysis on an opportunistic basis.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15

Draft 10-20-14

Date: September 2014

Parts of this expensive proposal/project are vague. In particular the 'new' work looking at juvenile scales is not clear (1) Is the plan to take scales from juvenile fish? If so, this could be difficult because, depending on the time of year and fish size, scales may be incompletely developed and very fragile. (2) Have the investigators done any 'preliminary work' to examine the feasibility of their approach? (3) The project refers to 'predictive models' but is there a hypothesis? (4) Will this project build on previous 2012 EVOSTC-supported projects on scales by Moffitt?

Science Coordinator, PAC, Executive Director Comments – FY15

Date: September and October 2014

We concur with the Science Panel

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14

Date: September 2013

Considerable concern was expressed about the departure of Dr. Kline and the panel endorses Pegau's expressed urgency in finding a suitable replacement. These proposals tackle important issues and they both do a very good job of relating what they do to other projects, especially to the ASA model. These proposals also present well and respond to much of what the panel recommended in 2011.

Over-wintering mortality among herring juveniles has been invoked as an explanation for many things: recruitment variation, spatial variation in herring survival and susceptibility to disease within Prince William Sound, and perhaps more. It is an important topic and there is a rich legacy of work on this by productive researchers in Prince William Sound. It is important that this work receive the continued attention it deserves, including as much synthesis of past work as possible.

With respect to the 2013 proposals, no plan is evident to examine the relationship of the change in energy content to climate and oceanographic conditions during the pre-sampling and overwintering periods. If PIs are truly interested in determining whether the "constraints" are relaxed, then all constraints, including climate/ocean factors must be considered. As much as possible these projects must be integrated with oceanographic and biological data from LTM, especially because the causes for condition changes are crucial. The project must also be integrated with the herring disease program. The panel suggests that condition be used in experiments with disease challenges including transmission mechanisms.

Science Coordinator, Executive Director Comments – FY14

Date: September and October 2013

We concur with the Science Panel.

Public Advisory Committee Comments – FY14

Date: October 2013

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

Trustee Council Comments – FY14

Date: October 2013

There are no project specific comments.

FY13 FUNDING RECOMMENDATIONS

Draft 10-20-14

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13

Date: September 2012

We concur with the Science Panel

Public Advisory Committee Comments – FY13

Date: September 2012

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

Project Number: 15120111-O

Project Title: PWS Herring Program – Coordination and Logistics

Primary Investigator(s): Scott Pegau

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$1,262,523

FY12	FY13	FY14
\$364,126	\$510,261	\$388,136

Additional EVOSTC Funding Requested: \$677,590

FY15	FY16
\$339,007	\$338,583

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$1,940,113

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$20,000	\$21,000	\$22,000	\$24,000	\$0	\$87,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

This project is for the coordination and logistics aspects of the proposed program titled, "PWS Herring Research and Monitoring". The objectives of the program are 1) Provide information to improve input to the age-structure-analysis (ASA) model, or test assumptions within the ASA model, 2) Inform the required synthesis effort, 3) Address assumptions in the current measurements, and 4) Develop new approaches to monitoring. The Coordination and Logistics program objectives are to 1) ensure coordination between projects to achieve the program objectives, 2) Provide a synthesis from existing results, and 3) provide logistical support to the various projects.

Coordination includes scheduling of projects to ensure the maximum sharing of vessel time and so that projects dependent on results or samples from another project are in the correct order. Coordination will be primarily through email and teleconference, but each year all the investigators are required to meet in person. Coordination is also taking place with the existing Herring Survey program, the Long-Term monitoring program, and ADF&G herring sampling.

Logistics is primarily in providing vessel time although a remotely operated vehicle is requested in this budget to support non-lethal fish identification and being able to search under the ice. The synthesis to be provided by this project is leveraging the required synthesis of the existing Herring Survey program. We intend to update that effort with new results and add a section on how environmental conditions affect herring growth.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13**Date: September 2012**

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13**Date: September 2012**

We concur with the Science Panel.

Public Advisory Committee Comments – FY13**Date: September 2012**

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Fund	Fund	Fund	Fund

Science Panel, Science Coordinator, PAC, Executive Director, Trustee Council Comments – FY12**Date: April 2011**

There are no project specific comments

Project Number: 15120111-P

Project Title: PWS Herring Program – Genetic Stock Structure

Primary Investigator(s): Jeffrey Guyon

PI Affiliation: NOAA

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$50,467

FY12	FY13	FY14
\$0	\$0	\$50,467

Additional EVOSTC Funding Requested: \$53,083

FY15	FY16
\$53,083	\$0

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$103,550

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

Understanding if there is one PWS herring stock or multiple stocks is important for proper management of fisheries. We propose to study the genetic uniqueness of herring from PWS to determine if it may be a complicating factor in the recovery process. A previous genetic study of herring in the region indicated that the PWS herring population was genetically distinct from other stocks spawning outside the Sound (O'Connell et al. 1998), providing an impetus for additional work. Several recent studies have made advancements in herring research using microsatellite loci, and have detected fine-scale genetic differentiation among local regions of herring (Beacham et al. 2008; Andre et al. 2011; Wildes et al. 2011). Each microsatellite locus contains multiple alleles making microsatellites ideal genetic markers for analyzing migratory fish with limited stock structure like herring. Based on our experience studying Pacific herring in Southeast Alaska using microsatellite markers (Wildes et al. in 2011), successful completion of this proposal will require (1) increasing the number of genetic samples per collection from the 50 used in the previous analysis (O'Connell et al. 1998) to 150 fish, (2) using an increased number of informative markers (from 5 to 15), (3) analyzing at least two years of collections to examine temporal stability, and if sampling allows (4) spatial stability from collections from two different historical locations (east, west). Evaluation of temporal and spatial variation of herring population(s) in and around PWS using updated genetic protocols will provide important information about herring life history that will contribute to improving the application of the ASA model.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

This is a good project and will be especially useful if the work can finally resolve the uncertainty of PWS herring stock structure based on an earlier paper. The PI's show that they have familiarity with recent literature and stock-structure concepts. The use of the 'term' fine scale' genetic structure could be misleading because the geographic scale of variation within PWS is probably smaller than that examined in the cited references, especially for the Baltic. It would be especially useful if the authors could examine samples from Kayak Island.

Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

We concur with the Science Panel

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

The investigators should re-examine their plans to ensure that the sites of proposed sampling match the broad objectives of the coordinated proposals. We suggest that the greatest value from this work would be a definitive evaluation of the genetic differentiation, or lack of it, within PWS and areas immediately adjacent, such as Kayak Island. It is not clear that one location east and one location west would satisfy questions about stock structure within PWS. If sample size is an issue, perhaps analyzing the samples from Yakutat has lower priority. The Science Panel also wonders why there was no reference made to the samples collected from Kayak Island (were these samples of eggs or fish?) Inclusion of these samples would seem to be high priority.

Further, we advise that the investigators take adequate measures to ensure that they are examining fish in spawning condition. Alternately, if it were possible to conduct genetic analyses on late embryos (from spawn samples) as this might be a useful approach.

Science Coordinator, Executive Director Comments – FY14**Date: September and October 2013**

We concur with the Science Panel

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received.

Project Number: 15120111-Q

Project Title: PWS Herring Program – Modeling the population dynamics of PWS herring

Primary Investigator(s): Trevor Branch

PI Affiliation: University of WA

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$221,756

FY12	FY13	FY14
\$36,907	\$87,013	\$97,836

Additional EVOSTC Funding Requested: \$205,327

FY15	FY16
\$100,407	\$104,920

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$427,083

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/25/14.*

Shortly after the Exxon Valdez oil spill, the Prince William Sound herring populations collapsed and have not yet recovered. We propose a modeling project to (1) revise and update the ASA model used to manage this population, (2) conduct simulations to test which data sources are most important in assessing the current status of this population, and (3) collect data on herring populations worldwide to find out how often these populations collapse under ordinary conditions.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

The Panel acknowledges the detailed and well-rounded proposal for this project. The Panel also strongly supports the recognition in the proposal that the ASA model will have a key role in synthesis. For this reason, it is essential that all participants in the upcoming synthesis meeting have a clear description of the model as currently coded. Such a description does not exist in the published literature or previous reports to EVOSTC. The description should include (i) equations, (ii) a list of parameters assigned values before model runs; and (iii) a list of parameters estimated from data and objective functions used. It does not need to include much supporting text. We suggest a target date of December 1, 2014 for this description so that attendees have ample time to take account of the model details in preparation for the synthesis meeting. A further, more technical, comment is that there was no reason given for moving to a Bayesian framework. There are many potentially excellent reasons for this decision, but they were not presented.

Is the present ASA model used for PWS identical to the model described by Hulson et al. 2008? (See Hulson, P-J F, Miller, S E, Quinn, T. J. II, Marty, G. D., Moffitt, S D, and Funk, F. 2008. Data conflicts in fishery models: incorporating hydroacoustic data into the Prince William Sound Pacific herring assessment model. – ICES Journal of Marine Science, 65: 25–43)

Objective 3 (Gathering data on clupeids of the world) is a formidable task, especially for a graduate student. More regional comparisons however may be useful if the analyses were confined to a smaller number, especially those in the eastern pacific.

Science Coordinator, PAC, Executive Director Comments – FY15**Date: September 2014**

We concur with the Science Panel

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel Comments – FY14**Date: September 2013**

While this effort may be in the correct direction, the estimation of herring biomass is an integral and very important part of the herring program. Candidly, the Science Panel had expected more progress and more effort than the efforts of a graduate student to be directed at this issue. This comment should not be seen as a criticism of the student, but instead as a deficiency in the effort directed at this important issue. There is no indication from the proposal that there is any dialogue between the PI and the other herring program PI's and if so, that is a problem that should be addressed. A specific concern is the extent to which acoustic data, or acoustic indices, can be used, as a component of the annual assessments. Similar questions exist about the spawn data. It seems probable that some form of fisheries-independent index would be required to tune the age-structure (ASA) model. If not, then something else might be used, such as a spawn index and if so, that might require a reallocation of resources. Therefore a better understanding of the data requirements for practical development of the ASA model is required. To this end the modelers need to examine and evaluate the strengths and weaknesses of the available data, preferably in collaboration with other PI's in the herring program.

Science Coordinator, Executive Director Comments – FY14**Date: September and October 2013**

We concur with the Science Panel.

Public Advisory Committee Comments – FY14**Date: October 2013**

Draft 10-20-14

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received

Trustee Council Comments – FY14

Date: October 2013

There are no project specific comments.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator, Executive Director Comments – FY13

Date: September 2012

We concur with the Science Panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Not reviewed due to the lack of a quorum at their meeting. No individual comments were received.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
April – Aug 2011	Fund	Fund	Fund	Fund

Science Panel Comments – FY12

Date: April 2011

The Herring Program team clearly gave careful thought to how modeling should be done and who should do it. Their choice and recruitment of Trevor Branch at UW is superb. This is a young rising star in fisheries dynamics modeling, who has many experienced colleagues with whom to interact. His proposal represents a good guideline for the modeling work he will begin, identifying some key processes of high value to the herring program. We expect to see evolution of the modeling as the project develops and see Branch as a leader who will make adaptive additions and modifications as new issues arise. We would like to have seen a more overt mention of how competing drivers of herring mortality will be tested against one another – physiological stress, starvation, top-down predation, and disease. These are clearly embedded in the life history modeling, but model fits to choose the factor or combinations of factors that best fit observed abundance changes would be welcome.

Agency Staff Comments – FY12

Date: August 2011

The proponent is a great choice for this work, and having this as a doctoral project is a cost-effective way to get some very good work done. The project description is light on details, and that is acceptable to a limited extent, given that the work includes an investigation of what has been done and the available data (via the management strategy evaluation), and that it is important to be flexible in model development. It would be helpful to have more details on the “holistic” model. For example, the Hulson et al. age structured analysis is referenced in relation to the management strategy evaluation, but there is no clear description of how the proposed holistic life-stage model relates to or builds off of the ASA, i.e., what the structure of the “holistic” model will be. Another concern is that it is not clear if or how the “holistic” model will be used to aid in identifying the limiting factors in herring recruitment and recovery. That could be an important aspect of the overall herring program.

Draft 10-20-14

The disclaimer in the second paragraph of the "Statement of the Problem" is disconcerting given the intellectual effort that the proposal aims to expend on model development "While we do not anticipate that there will be a major change in our modeling ability in the next five years, we expect that the combination of monitoring and focused process studies will provide incremental changes over the next twenty years and result in a much better understanding of herring populations by the end of the program." Perhaps the proponent could offer a more detailed, though conditional description of what the expected benefits might be

The order of the three tasks is a bit confusing The tasks given in Methods (p 3-4) are: 1 Management strategy evaluation to identify most informative datasets – 2 Predict future levels of recruitment – a meta-analysis of time series for other herring and clupeid stocks 3 Holistic model of herring dynamics – life stage model (age based), tasks conducted by UW students and faculty with access to Hilborn, Punt, and Essington.

The expected order of completion of these tasks as given under Milestones (p 7) is 1 model (by 9/14), 2 MSE (by 9/15), and 3. predict recruitment (by 9/16)

It is not clear why a model will be developed first, and then a different model (ASA) used in the management strategy evaluation Also, the work to predict future recruitment, as described, appears correlational and doesn't appear to involve the "holistic" model or a mechanistic understanding of herring dynamics, yet the timeline has this work occurring after initial model development. How would this work be related to the "holistic" model? The budget includes research assistant-ship and tuition for a Ph D student – essentially a half time position dedicated to this research This is a cost efficient use of funds

Science Coordinator Comments – FY12

Date: April 2011

I concur with the Science Panel's comments The PI's identified are skilled and well-respected in their field and will bring valuable experience to this complex project.

Public Advisory Committee – FY12

Date: April 2011

The PAC concurs with the Science Panel recommendation to fund the Branch modeling project. There were no objections.

Executive Director Comments – FY12

Date: April 2011

There are no project specific comments.

Project Number: 15120111-R

Project Title: PWS Herring Program – Aerial Survey Support

Primary Investigator(s): Scott Pegau

PI Affiliation: PWSSC

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$70,850

FY12	FY13	FY14
\$0	\$0	\$ 70,850

Additional EVOSTC Funding Requested: \$70,850

FY15	FY16
\$70,850	\$0

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$141,700

Funding From Non-EVOSTC Sources:

FY12	FY13	FY14	FY15	FY16	Total Non-EVOSTC Funding
\$0	\$0	\$4,000	\$0	\$0	\$4,000

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/24/14.*

This project is for providing aerial survey support to the EVOSTC sponsored Herring Research and Monitoring (HRM) and Gulf Watch Alaska (GWA) programs. For the HRM program the aerial support will be used to help collect herring samples for the genetics project and to provide an aerial index of age-1 herring abundance. For the GWA program the aerial support will be used by the forage fish project. The desire is to provide an aerial index of forage fish abundance and guide the capture efforts of the vessel. In turn the vessel will be providing ground truth of fish types and size of schools for better interpretation of the aerial based forage fish information. This proposal request is strictly for aerial support, all analysis and vessel funding will come from the existing projects. Funding for this project will be managed as a supplement to the HRM Coordination and Logistics project led by Dr. Pegau.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

There are no project specific comments

Science Coordinator Comments – FY15**Date: September 2014**

I commend Dr. Pegau on the excellent coordination and collaboration of this project within both Programs. It is gratifying to see evidence that the survey design has been updated based on the collaboration with the Piatt project

PAC, Executive Director Comments – FY15**Date: October 2014**

We concur with the Science Coordinator's comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Not Reviewed	Fund	Fund

Science Panel, Science Coordinator, Executive Director, Trustee Council Comments – FY14**Date: September and October 2013**

There are no project specific comments

Public Advisory Committee Comments – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

NOAA Harbor Protection Program Projects

Project Number: 15120112

Project Title: NOAA Harbor Protection Projects – Project Management

Primary Investigator(s): Laurel Jennings

PI Affiliation: NOAA

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$26,423

FY12	FY13	FY14
\$19,883	\$0	\$6,540

EVOSTC Funding Requested: \$25,833

FY15	FY16	FY17	FY18
\$10,519	\$15,315	\$0	\$0

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$52,256

Funding From Non-EVOSTC Sources:

FY14	FY15	FY16	FY17	FY18	Total Non-EVOSTC Funding
\$0	\$38,304	\$0	\$0	\$0	\$38,304

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/27/14.*

In this project, NOAA Restoration Center is providing oversight, management and technical assistance for a harbor protection and harbor clean-up project as well as a snow management/water quality improvement project; both efforts take place in Cordova, AK. The goal of these projects is to improve habitat for the benefit of species impacted by the Exxon Valdez oil spill. Although the 2010 Update to the Injured Resources and Services report did not list Pacific Herring as being habitat limited, we know that restoring intertidal and subtidal habitat will allow this species to better combat the stressors of disease, predation and low recruitment. Habitat that is negatively impacted by harbor activities and contaminated snowmelt will be improved. These restoration projects will benefit herring, which have the status of 'non recovering' according to the report, by aiding their recovery.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund Reduced	Fund Reduced	Fund Reduced	Fund Reduced	

Science Panel Comments – FY15**Date: September 2014**

We recommend funding for this effort with the removal of the travel expenses for the staff member located in Washington, DC

Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

We concur with the Science Panel

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund Conditional	Fund Conditional	Not Reviewed	Fund Conditional	Fund

Science Panel Comments – FY14**Date: September 2013**

Not reviewed.

Science Coordinator Comments – FY14**Date: September 2013**

This proposal's funding is dependent on the Council's decision on proposals from the Copper River Watershed and the Native Village of Eyak.

Public Advisory Committee – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received

Executive Director Comments – FY14**Date: September 2013**

This proposal's funding is dependent on the Council's decision on proposals from the Copper River Watershed and the Native Village of Eyak

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June/July 2011	Not reviewed	Do not fund	Do not fund	Fund
April 2011	Do not fund	Do not fund	Do not fund	Do not fund

Science Panel Comments – FY12**Date: June 2011**

Not reviewed.

Science Panel Comments – FY12**Date: April 2011**

In response, the Proposer has reduced their budget to \$1 million and has indicated funding from NOAA in the final proposal. The panel has several key concerns regarding the proposed program. First, a significant portion of the funding requested will be spent in administrative and travel costs for the Seattle, WA and Anchorage, AK based team. Second, the narrative does not provide enough information to determine the potential effectiveness of the program. Finally, there is no established plan for outreach and education that would be critical for this type of effort. There are only general descriptions of types of activities that might be included in community-specific plans. There are references to other Best Management Practices (BMP) but the proposal does not commit to following any particular BMP. There seems to be overlap in scoping and assessment phases with an

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already existing Alaska Clean Harbor project funded for \$282,615 by CIAP grant (see CIAP approved state plan, http://dnr.alaska.gov/coastal/CIAP/ciap_Fall.htm). Unless coordination is required, there may be duplication of effort with the Clean Harbor program at significantly higher expense in this project. Travel costs seem high, especially in the implementation phases that do not involve public outreach. Most of the staff is coming from Seattle which increases the cost, but there is not much justification in the proposal other than relationship building with communities. The listed project managers do not seem to have much experience with harbor operations, so technical assistance may be limited.

Science Coordinator Comments – FY12

Date: June 2011

The team has reduced their budget as requested by the Council. I continue to be concerned that the first projects will not even be selected until June 2013 leaving only three field seasons available for the actual work. Also, the current timeline would not allow the Council (who will only be meeting annually in Aug/Sep) the opportunity to review the projects prior to their selection and implementation.

Public Advisory Committee Comments – FY12

Date: July 2011

A revised proposal with funds leveraged has reduced the cost of this effort, which will be managed by NOAA staff. Studebaker raised a concern about the details of the effort, it is not clear what will be done and where. John French mentioned the need to coordinate this with the U.S. Coast Guard clean harbors program. Eilo stated that he supported the cleanup of harbors. The only changes to the project are a reduced budget. While there are merits to the cleanup of harbors, the Trustee Council should proceed with caution, as there are few details at this time explaining what this project will accomplish.

Executive Director Comments – FY12

Date: July 2011

The proposer has responded to SP and TC concerns and submitted a reduced-budget proposal that mitigates issues identified prior. However, the PAC has identified concerns with funding an largely administrative process and I agree with the Science Coordinator's concerns. This is an important focus area, as also discussed by the PAC, but due to those issues, my "fund" recommendation is fairly soft.

Trustee Council Comments – FY12

Date: October 2011

A revised proposal has been submitted by the team. At this time, funding has only been approved to complete the scoping and RFP development phase of this project. The Council will review the completed RFP at a later date and will determine at that time if future funding is warranted.

Trustee Council Comments – FY12

Date: September 2011

The Council did not vote to fund this entire request. However, it did request a revised proposal and budget that would be limited to the scoping and RFP phase, concluding with presentation to the Council of the proposals received in response to the RFP and with a budget not-to-exceed \$125,000 (plus 9% GA). The following items were also specifically noted as being of interest:

1. Greater staffing efficiency for travel in the spill-area communities: limit travel time and number of travelers to only those necessary.
2. Consult EVOSTC office staff members, such as Cherri Womac, who have experience locating free or low-cost meeting rooms in these communities.
3. Work with DEC staff to ensure that the scoping/RFP phase seeks proposals for work which is not already legally required by state or federal law.
4. The currently-proposed timeframe for scheduling meetings in the communities is an extremely busy time for harbor personnel. It is recommended that you determine when other meetings with harbor personnel are occurring and/or adjust your schedule to dates that are outside of the commercial fishing season.

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- 5 The scoping/RFP phase should emphasize to proposers and interested parties that the Council's current intent is to consider funding proposals with a total not to exceed the remaining amount of the original NOAA Clean Harbor proposal. For example, if the entire \$125,000 is used during the scoping/RFP phase, fund proposals up to a total of approximately \$953,750.

Trustee Council Comments – FY12

Date: June 2011

The Council requests the proposer review the Science Panel comments and strengthen its proposal and adjust the budget to \$1 million dollars.

Project Number: 15120112 - A

Project Title: NOAA Harbor Protection Program – Cordova Clean Harbor

Primary Investigator(s): Ivy Patton

PI Affiliation: Native Village Eyak

Project Manager: NOAA

EVOSTC Funding Authorized To Date: \$193,722

FY12	FY13	FY14
\$0	\$0	\$193,722

Additional EVOSTC Funding Requested: \$150,352

FY15	FY16
\$72,996	\$77,356

Requests include 9% GA.

Total EVOSTC Funding (Authorized and Requested): \$344,074

Funding From Non-EVOSTC Sources:

FY14	FY15	FY16	FY17	FY18	Total Non-EVOSTC Funding
\$0	\$0	\$0	\$0	\$0	\$0

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/3/13.*

In this project, the Native Village of Eyak, along with their partners, will bring a local, physical presence to the Cordova Harbor to promote clean boating practices through education and information dissemination. In addition, the work will engage the local harbor staff, marine businesses, Coast Guard, and non-profit organizations by supporting increased use of available services. Finally, this important work will evaluate existing harbor user practices, give recommendations for improvements to decision makers, and assist with improving and augmenting critical harbor services.

Specifically the tasks for this project include:

- Addressing waste and antifreeze disposal limitations - achieved by providing new waste receptacles at convenient locations. These new receptacles will reduce the chance of materials being lost back to the environment while making it easier to properly dispose of waste.
- Improved outreach activities - educating harbor users to the best practices, which will reduce waste reaching the harbor. This will be done using signage and the development of new, effective outreach materials.
- Evaluation – monitor the effectiveness of the harbor clean up effort by tracking changes in use patterns and PAH levels in mussels.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel, Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

There are no project specific comments.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund Conditional	Fund Conditional	Not Reviewed	Fund Conditional	Fund

Science Panel Comments – FY14**Date: September 2013**

The science panel appreciates the interest of the local community in cleaning up Cordova Harbor. We also appreciate the improvements to the proposal in response to our comments on the previous version, but we do recommend further changes to the work plan should the proposal be funded.

It should be straightforward to estimate the costs of the three antifreeze waste disposal options without actually implementing each of them. If the real objective of this part of the proposal is to implement the three approaches on a trial basis to determine which of them is likely to be most effective, then this should have been stated together with a detailed rationale of the pros and cons of each approach. It also isn't clear to the panel why additional surveys are needed, although we do recommend that a follow-up survey be conducted to evaluate compliance with the initiatives and reasons for the success or failures of each initiative. We also recommend that knowledge gained from the project be communicated to other communities and a plan for doing so should be developed.

Science Coordinator, Executive Director Comments – FY14**Date: September and October 2013**

We concur with the Science Panel.

Public Advisory Committee – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC; no individual comments were received.

Trustee Council Comments – FY14**Date: October 2013**

The Council requests the PIs work with EVOSTC staff to refine their budget in response to Science Panel and EVOSTC staff comments

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
January 2013	No consensus	Modify	Not reviewed	Modify

Individual Science Panel Comments – FY13**Date: December 2012/January 2013****Reviewer 1:**

This proposal describes several projects, each of which could make important contributions to preventing water pollution in the Cordova harbor and Orca Inlet and one of which can provide proof of concept for responding to small oil spills. The proposal reflects past work in various groups in Cordova-Eyak coming together under the banner of Clean Harbors to support this project on behalf of the environment and natural resources of the area. Several components make up this proposed project. It will address antifreeze pollution by pursuing recycling possibilities. It will address the lead pollution of improper disposal of batteries with a battery storage shed. It will

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hold a conference and then conduct pilot studies of containment and removal of small oil spills, including purchase of boom. It will conduct a variety of outreach efforts including educational possibilities through the high school ocean science bowls. All of this seems well conceived. The question is whether this fits the profile of EVOS Trustee funding policies. First, the EVOS Trustee Council has not previously invested in pollution prevention or in research or implementation of response actions. That is clearly what this proposal is all about. Second, the cost of this project is very high – 417 K in EVOS Trustee Council funds. Third, I cannot find evidence that the responsible PIs have a track record of demonstrating experience and success in handling this level of funding in a previous similar project. Fourth, I question the value of the PAH sampling in mussels, given that the response activities for small oil spills represent merely a pilot project not a sustained set of responses that could be sufficient to allow detection of reduced pollution in the mussels. Fifth, the sampling design for collecting mussels (From where? How many? Why the proposed frequency?) is not adequately justified. Sixth, this proposal needs to do a better job of relating pollution reduction to enhancing recovery of injured species, to show the connection typically required for EVOS Trustee Council funding.

Reviewer 2:

I appreciate that groups are coalescing on behalf of the community to improve water quality of the Cordova Harbor. Several projects have been proposed, including 1) proper disposal of antifreeze, batteries and trash, 2) small oil spill response, 3) workshops, public education and outreach, and 4) monitoring of water quality. A substantial component of this proposal is exploratory (e.g., workshops, contest), but I favor a more cost-effective approach of implementing best available practices. There are a great many harbors that are addressing these same issues, and it should be straight forward to adopt existing practices. I am also not convinced that the monitoring PAHs in mussels is the best use of funds for tracking success of this multi-pronged approach to cleaning up the harbor. Furthermore, mussels will be collected from only one location in the harbor. How will this provide meaningful data on small spills that are patchy in space and time? This is the most expensive of the proposals, and the budget could be trimmed to focus on components that would have a direct, immediate impact on improving water quality while concomitantly reducing associated administrative costs.

Reviewer 3:

This proposal is presented by a group of concerned citizens including the NVE and others such as PWS keeper, Cordova fishermen, etc. Their goals are to bring a presence to Cordova Harbor to promote clean boating practices, engage local harbor staff, businesses, etc. in supporting services and to assist with improving user clean practices. Previously NVE and CCH has addressed antifreeze disposal, dealing with small spills in the harbor and developing cleanup approaches, extending outreach activity for education of harbor users, and evaluation of changes through PAH monitoring of mussel tissues. While the other tasks are worthy, the last item on PAH levels in mussels is too ambitious and the design is probably not such that useful data can be obtained. It is suggested this last task be eliminated. This is an expensive proposal and cost savings could be realized in a number of areas, particularly in administration.

Science Coordinator Comments – FY13

Date: January 2013

Overall, the proposal is clear and maximizes the local, state, and federal resources available. The costs are clearly detailed and the objectives are reasonable in both time frame and cost. The amount of cooperation and coordination that has already been achieved is remarkable and I appreciate that much of the planning and design has already occurred prior to this funding request.

My primary concern is with the projects that address small-spill response through workshops and a demonstration project. While these projects would certainly be useful for OSRI or the oil and gas industry, they may not be able to receive funding through the EVOS Trustee Council who is usually not able to fund any activities in oil spill prevention and response. I would recommend that these projects be removed from the proposal and the budget be reduced accordingly. I also suggest that some clarification is needed about the antifreeze demonstration project to ensure that this project would result in a long term solution to the harbor's need for dealing with antifreeze. In response to several of the science panel members concern regarding the PAH monitoring in

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mussels, the sampling and monitoring proposed is part of the existing NOAA Mussel Watch Program. This information would add to the long-term data set that already exists through this program.

Public Advisory Committee Comments – FY13

Date: January 2013

Abstracts were submitted to individual members of the PAC for comment. No comments were received.

Executive Director Comments – FY13

Date: February 2013

I support the recommendations and observations of the Science Coordinator, though I also note the remaining concerns of the Council's legal advisers.

Executive Director Comments – FY13

Date: January 2013

This project was solicited by NOAA under EVOSTC project 12120112, Phase I of which was funded in the FY'12 Work Plan. Phase I was funded by the Council at a reduced sum of \$20,000 for an invitational process and work with spill area communities to encourage submission of proposals reducing contamination originating from harbors and marinas. It should be noted that there are concerns regarding the proposals that were submitted under this program. This has long been a tenuous funding area for the Council. In the past, the Council funded acquisition of waste management facilities and activities and aided their implementation, but there was concern about the very indirect links between such projects and restoration. The projects submitted under NOAA's invitation have simply renewed these concerns. Moreover, some of the proposals are for projects that are very similar to those that have been funded by the Council in the past and have, apparently, not been successful or not maintained, both of which are inimical to Council policies. Lastly, some of the proposals seek funding that is aimed at correcting illegal behaviors on the part of members of the public or of governmental entities and seek monies that would augment, probably unlawfully, the appropriations of local governments and one or more State agencies.

Project Number: 15120112 - B

Project Title: NOAA Harbor Protection Program – Snow Management Analysis

Primary Investigator(s): Kristin Carpenter

PI Affiliation: Copper River Watershed **Project Manager:** NOAA

EVOSTC Funding Authorized To Date: \$103,818

FY12	FY13	FY14
\$0	\$0	\$103,818

Additional EVOSTC Funding Requested: \$141,315

FY15	FY16
\$141,315	\$0

Request includes 9% GA

Total EVOSTC Funding (Authorized and Requested): \$245,133

Funding From Non-EVOSTC Sources:

FY14	FY15	FY16	FY17	FY18	Total Non-EVOSTC Funding
\$6,920	\$6,920	\$0	\$0	\$0	\$13,840

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/3/13.*

The Copper River Watershed Project (CRWP) proposes to demonstrate that application of best management practices to managing snow in a developed community will improve the water quality of snowmelt discharges that flow directly into the Cordova harbor and Orca Inlet, the habitat range of the majority of PWS juvenile herring. Synthesized research on the long-term effects of the *Exxon Valdez* oil spill found that chronic persistence of oil has sub-lethal impacts on marine populations. Over the course of a winter, contaminants that commonly accumulate in snow include oil, grease, sediment, nitrogen, phosphorous, and metals. The CRWP will work with the City of Cordova and the Alaska Department of Transportation & Public Facilities to examine current snow handling practices in Cordova, identify Best Management Practice procedures and structures that could help reduce the concentration of contaminants in snow melt run-off, implement BMP structures at three snow storage sites, conduct water quality testing to assess the effectiveness of the BMP structures, and produce a guidance report for distribution to other municipalities.

FY15 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund	Fund	Fund	Fund	

Science Panel Comments – FY15**Date: September 2014**

The Panel is gratified to see that the snow area locations were reconsidered based on information gathered during the last year's snowfall

Science Coordinator, PAC, Executive Director Comments – FY15**Date: September and October 2014**

We concur with the Science Panel.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director	Trustee Council
Fund Conditional	Fund Conditional	Not Reviewed	Fund Conditional	Fund

Science Panel Comments – FY14**Date: September 2013**

The science panel appreciates the interest of the local community to improve water quality of the Copper River Watershed by improving snow management practices in Cordova. We also appreciate the improvements to the proposal in response to our comments on the previous version, and the outreach plan communicating findings and recommendations to other communities. However, we do recommend further changes should the proposal be funded, beginning with developing a detailed work plan

The water-quality monitoring plan could not be evaluated, because fundamental information was missing, such as the number of water samples to be taken at each location. The panel also questions the decision to take water samples rather than deploying passive samplers. Water samples provide instantaneous snapshots, whereas passive samplers gather data over the entire time period that they are deployed (weeks), providing a more time-integrated and reliable assessment of water quality. The plan should explain how data will be analyzed (including who at PWSSC or NOAA Auke Bay Lab would provide the scientific interpretations) and how the differences in snowfall in the two years will be taken into account to determine the effect of snow management on water quality before and after modified snow removal practices are in place. Indeed, it is unclear whether this assessment can be made in just two years given that snowfall may differ considerably between years confounding interpretation of results

Science Coordinator Comments – FY14**Date: September 2013**

I also appreciate the interest and dedication of the local community in Cordova in improving their water quality. However, the link to Injured Resources and Services is tenuous and without a guarantee of implementation from the City of Cordova the study would not provide any benefit

Public Advisory Committee – FY14**Date: October 2013**

The October 2013 PAC meeting was cancelled due to the federal government shutdown. Abstracts were submitted to the PAC, no individual comments were received

Executive Director Comments – FY14**Date: September 2013**

I concur with the Science Panel.

Trustee Council Comments – FY14**Date: October 2013**

The Council requests the PIs identify in their Fiscal Year 2015 proposal the three Best Management Practice snow melt filtration structure sites that impact habitat of EVOS-injured species

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FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
January 2013	No consensus	Do not fund	Not reviewed	Do not fund

Individual Science Panel Comments – FY13**Date: December 2012/January 2013****Reviewer 1:**

This proposal describes an engineering analysis of options for conducting snow removal and storage in Cordova in ways that are intended to minimize negative impacts on water quality and habitat during its melting phase (and create cost economies to the Town) Funding does not cover implementation of the recommendations Previous engineering reviews imply that beneficial changes are likely to emerge, although no smoking gun of water quality violations has been identified One year of minimal water quality sampling is proposed but sampling design is only generally presented The NGO (PIs) responsible for this proposal and project if funded has previous experience with project management and apparently successful implementation Costs are modest (\$68 K) to EVOS. Community outreach and education components seem reasonable and appropriate. What exactly the contracted engineering consultants will do and what ranges of options exist is rather vague, so more history of the similar analyses done by the engineers would have been a useful guide as to the breadth of their analyses likely to be done for Cordova The tie-in to injured species is minimal – herring were once abundant in Orca Inlet and fresh-water salmon rearing habitats are potentially polluted by contaminants in the melting snow. I am not convinced enough of the relevance to restoration and recovery of EVOS-listed species, but the project has merit

Reviewer 2:

An analysis of snow management in Cordova has been proposed to reduce likely contamination of the watershed, which might affect salmon, herring and shorebirds A surprising shortcoming of the proposal is that a specific set of likely alternatives to current management practices was not presented, providing little basis for assessing the potential outcomes of this proposal Water quality will be assessed during wet and dry periods, but here too, details are lacking making it difficult to evaluate the success of the study Recommended changes to the management plan that are easily incorporated will be tried in the second year of the project. Outreach and education components are appropriate, and the cost of the proposal is reasonable (\$68K)

Reviewer 3:

This proposal conducts an evaluation of the snow removal and sanding options for Cordova. It does not include any implementation costs The connection to injured resources in the spill area is somewhat tenuous

Reviewer 4:

This is a “scoping” proposal for dealing with management of snow from the Cordova area where melt results in contaminant loading into salmon habitat. A BMP for snow removal will be developed and in 2014-2015, a demonstration implementation of snow management will occur. There will be public outreach and education with K-12 student involvement This seems like an appropriate use of funds and is a reasonable cost The specific details of the plan are lacking but could be provided. Also, this is a clear way to improve harbor health, but not clear if specific enhancement of damaged species will occur.

Science Coordinator Comments – FY13**Date: January 2013**

A snow management plan for Cordova would likely be highly beneficial to the marine habitat. With the recent record snowfall years it becomes even more important that the pollutants contained in the snow are not contributing to a decline in water quality or detrimental to critical marine habitat

However I have concerns regarding the actual implementation of the analysis This project will only produce a report that would need the financial support of the City to be implemented.

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Public Advisory Committee Comments – FY13

Date: January 2013

Abstracts were submitted to individual members of the PAC for comment. No comments were received

Executive Director Comments – FY13

Date: February 2013

I support the recommendations and observations of the Science Coordinator. While appreciative of the efforts made by the proposers and the project support by NOAA, legal and practical concerns remain.

Executive Director Comments – FY13

Date: January 2013

This project was solicited by NOAA under EVOSTC project 12120112, Phase I of which was funded in the FY'12 Work Plan. Phase I was funded by the Council at a reduced sum of \$20,000 for an invitational process and work with spill area communities to encourage submission of proposals reducing contamination originating from harbors and marinas. It should be noted that there are concerns regarding the proposals that were submitted under this program. This has long been a tenuous funding area for the Council. In the past, the Council funded acquisition of waste management facilities and activities and aided their implementation, but there was concern about the very indirect links between such projects and restoration. The projects submitted under NOAA's invitation have simply renewed these concerns. Moreover, some of the proposals are for projects that are very similar to those that have been funded by the Council in the past and have, apparently, not been successful or not maintained, both of which are inimical to Council policies. Lastly, some of the proposals seek funding that is aimed at correcting illegal behaviors on the part of members of the public or of governmental entities and seek monies that would augment, probably unlawfully, the appropriations of local governments and one or more State agencies.

Long-Term Program's Proposals

In separate Science 2015 Proposals notebook

Non-Programs

Non-Program Proposals

In separate Science 2015 Proposals notebook

PUBLIC HANDOUTS

Retriever Environmental

Ocean Spill and Contaminated Sea Ice Containment, Separation and Removal System

Patent #· US 8025460B2

Owner/Inventor. Jim Cobb

Email: retriever.environmental@gmail.com

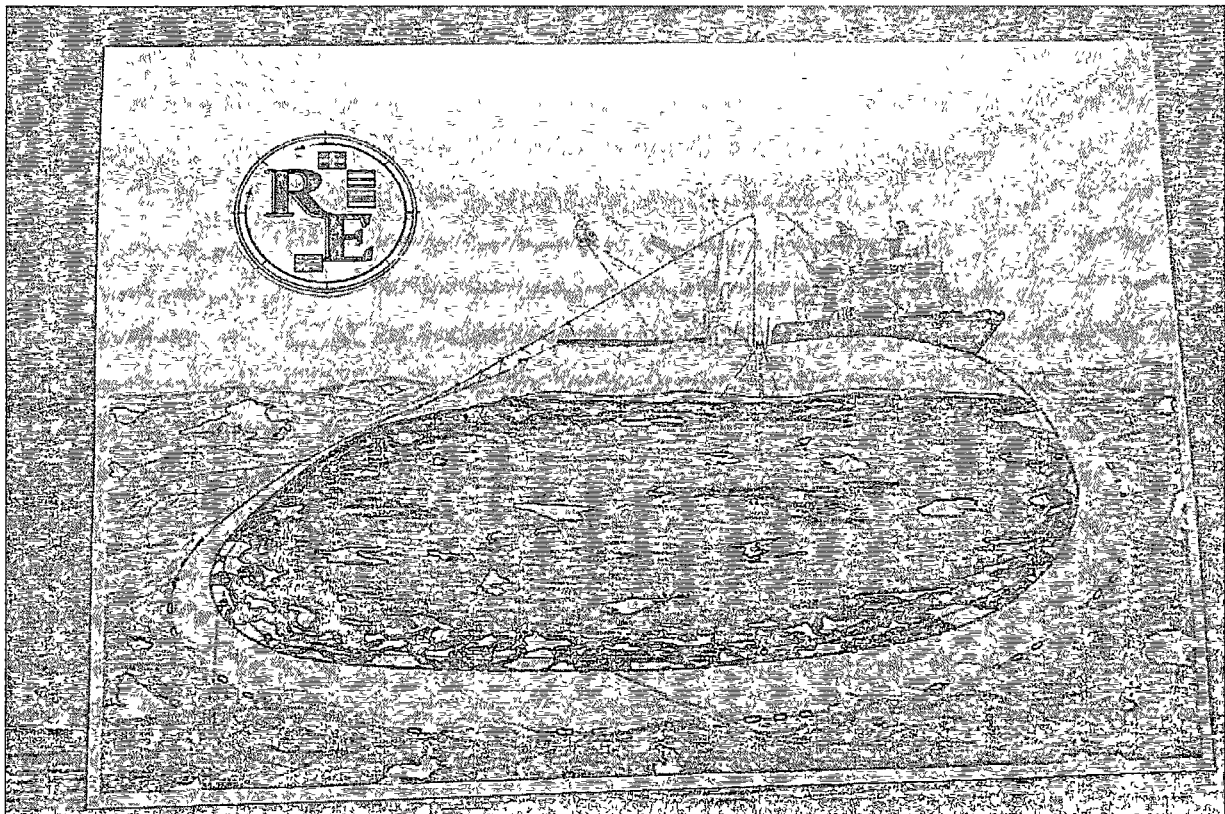
Presenter. Nick Balducci

Email: nrb4417@rit.edu

Jim Cobb is more than an inventor, he's an environmentalist driven by his personal cause. His Native Alaskan heritage and lifelong profession as a commercial fisherman have forged his dedication to save our seas and wildlife from their most ruinous threat: oil spills. His first hand exposure to humanity, creatures, economies, and livelihoods decimated by them, has created his relentless quest, played out over a twenty year period. Beginning with his enlisting in the then existing training for oil spill cleanup (in the days of the Exxon Valdez crisis) . participating in it, and being exposed to its many shortcomings... working for years creating a process that to this day eclipses all existing methods, that he would eventually patent. Only to discover, through a decade of persistent outreach to oil giants and government, that our system is wired to support the ineptitude inspiring his crusade.

The story of Jim's quest is written in installments by The Alaska Native News. It details only a small portion of his efforts to put his invention in the appropriate hands Though abbreviated by comparison to the campaign itself, it is an exhausting tale, even in just the reading. Surviving the setbacks, discouragement, and issues of his own mortality is his daily work.

<http://alaska-native-news.com/> Search: Jim Cobb for articles



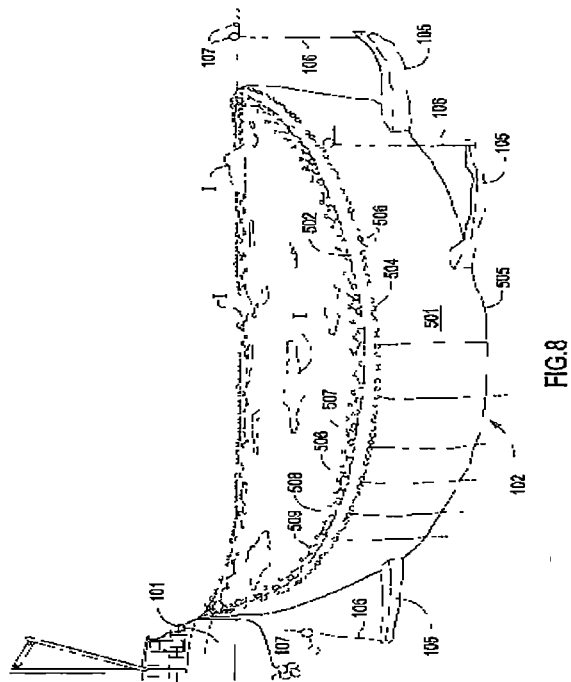


FIG. 8

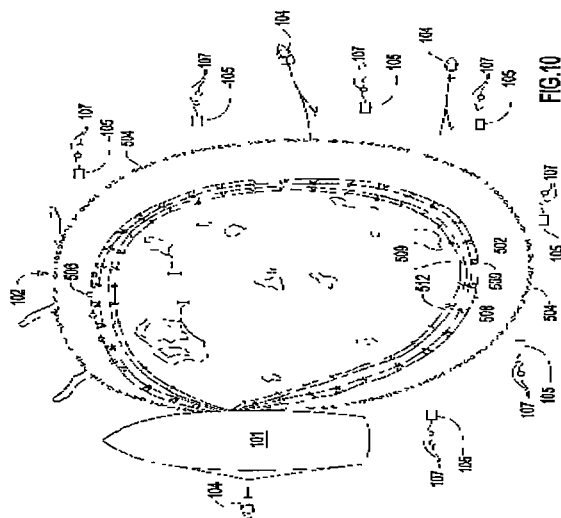


FIG. 10

Comments to Exxon Valdez Oil Spill Trustee Council

November 19, 2014

Rick Steiner, Anchorage

(richard.g.steiner@gmail.com) www.oasis-earth.com

1. Reopener for Unknown Injury Restoration Plan

As you are aware, pursuant to the *Reopener for Unknown Injury* provision of the 1991 consent decree, the governments in June 2006 presented Exxon with a Reopener Restoration Plan, and in August 2006 with a "Demand for Payment" of over \$92 million. However, Exxon still hasn't paid the claim, and the governments haven't taken Exxon to court to collect, making the Exxon Valdez case now the longest-lasting environmental litigation in history. It is important to note that this predictable impasse could easily have been avoided had the 1991 provision simply required that any reopener claim made by the governments that was not paid in full by Exxon within one year would be brought before the court for immediate adjudication.

As disappointing as it is that Exxon hasn't paid the 2006 government demand, it is even more disappointing that the State of Alaska and the U.S. have not taken Exxon to court to collect. Eight years later, the governments continue to simply "study" the issue, the court and public continue to express frustration, and the environmental injuries continue.

As some of you may recall, I filed several motions with the U.S. District Court seeking to compel this payment, yet the governments opposed each motion. Oddly, the governments now seem to be asserting that they have yet to identify unanticipated injuries, a restoration plan to address such injuries, or to make a claim to Exxon under the Reopener provision. In reality, the governments did all of this eight years ago, in 2006.

And while DOJ and the Alaska AG are responsible for *collecting* this long overdue claim from Exxon, it is the Trustee Council that is responsible for *implementing the 2006 Restoration Plan*. Today, the governments still have over \$200 million in available funds with which they can begin the shoreline bioremediation work, yet are still *more than 6-years behind the schedule they committed to in the 2006 plan* (attached). This is a shameful betrayal of the public trust. In fact, the EVOS Reopener has now become a textbook example on how *not* to structure such reopener provisions, including one now in discussion for the BP Gulf of Mexico disaster.

The EVOS Reopener debacle has eroded public confidence in government and industry assurances that Alaska oil can be developed “responsibly,” which I think is actually a good thing. For if there is one thing we learned from Exxon Valdez, it is that the public has every reason to doubt the commitments of industry and government regarding “safe and responsible” oil development.

Clearly, the Council needs to expedite its planned shoreline bioremediation program, and to demand that DOJ and the Alaska AG immediately take Exxon to court to collect this long-overdue demand for payment, plus interest.

2. Herring status and restoration

In your Draft 2014 Update on Injured Resources and Services, you propose to upgrade the status of herring from “Not Recovering” to “Recovering,” yet your discussion of the issue in this same draft shows this to be premature, at best. Calling the crash of the Sound’s herring “unprecedented,” you then state that today, “the herring population has never rebounded,” “no trend suggesting healthy recovery has occurred,” and “health indices indicate that herring in the Sound are not fit.” While there were hopeful signs from 2009-2011, the population since declined once again. You state that 2013 had “the lowest mile-days of spawn in PWS since 1973.” As such, herring should clearly remain in the “Not Recovering” category.

And, as I proposed in 2002 and again in 2014, the Council should work with PWS herring permit holders to implement a herring fishery permit buyback as an EVOS restoration measure, so that if and when herring do recover, the entire biomass can remain in the ecosystem to support the many injured species that rely on it as a critical prey resource. As the Council states, herring “are central to the marine food web; providing food to marine mammals, birds, invertebrates, and other fish.” I forwarded a proposal for such to the Council this past May, but have been informed, without explanation, that you will not consider it.

3. Applying research results

While the Council sponsored many useful studies, costing over \$400 million, your agencies have failed to *apply* many/most of the research results in a coherent way to better manage the injured ecosystem. This should be remedied. The Council should establish a working group between Council-funded scientists and natural resource managers to explore the practical management implications and applications of the results of Council-sponsored research, and to develop a detailed plan with which to apply such results as may be useful.

4. Retirement of subsurface estate

To many of us, the most significant achievement of the EVOS restoration process has been the protection of hundreds of thousands of acres of privately owned critical fish and wildlife habitat.

While this program was slow to start, and allowed too much critical habitat to be degraded, overall it has been a remarkable success that sets the standard for ecological restoration after major oil spills. However, in protecting the surface estate held by ANCSA village corporations, the Council has ignored the subsurface assets held by the regional corporations.

As this could jeopardize the integrity of the acquired surface protections, the Council should negotiate deals with the relevant regional corporations to retire the subsurface resources beneath the village corporation deals. Perhaps the regional corporations could be asked to donate the subsurface estate in the interest of restoration, in which case the appraised value should be tax-deductible to the corporations.

5. Bering River protections

The designated boundary of the oil spill region was drawn arbitrarily down the west bank of the Copper River, which makes no ecological sense. This boundary should be expanded east of the Copper River Delta to encompass the entire Copper River Delta, and the Bering River/Katalla/Controller Bay/Martin River area. We recommended this several times before. The Bering River complex is clearly an important part of the impacted ecosystem, as birds, fish, and marine mammals migrate between the areas. All of the injured species and resource services monitored by the Trustee Council also occur in the Bering River area. Thus, the Bering River area offers significant opportunities to offset fish, wildlife, subsistence, recreation, and passive use values lost in the spill. If timber and coal development were to proceed in this area, not only would these injured resources and services be further compromised, but also sediment/effluent streams would flow westward into PWS, further compromising the recovering ecosystem.

The Council should propose to the U.S. District Court that the existing boundary of the oil spill region be extended eastward as proposed here, or at a minimum, grant a one-time exemption to accommodate the Bering River conservation project. The Council should make it a priority to work with the Chugach Alaska Corporation (CAC) and the Korean coal owner (KADCO) to permanently retire the timber, coal, and other industrial development rights in this ecologically important region.

6. Public lands and waters protections

Finally, the Trustee Council should initiate a comprehensive process to identify protections needed on *public lands and waters* in the spill region. To date, the habitat protection program has focused solely on *private lands*, while ignoring comparable protection needs on state and federal lands and waters.

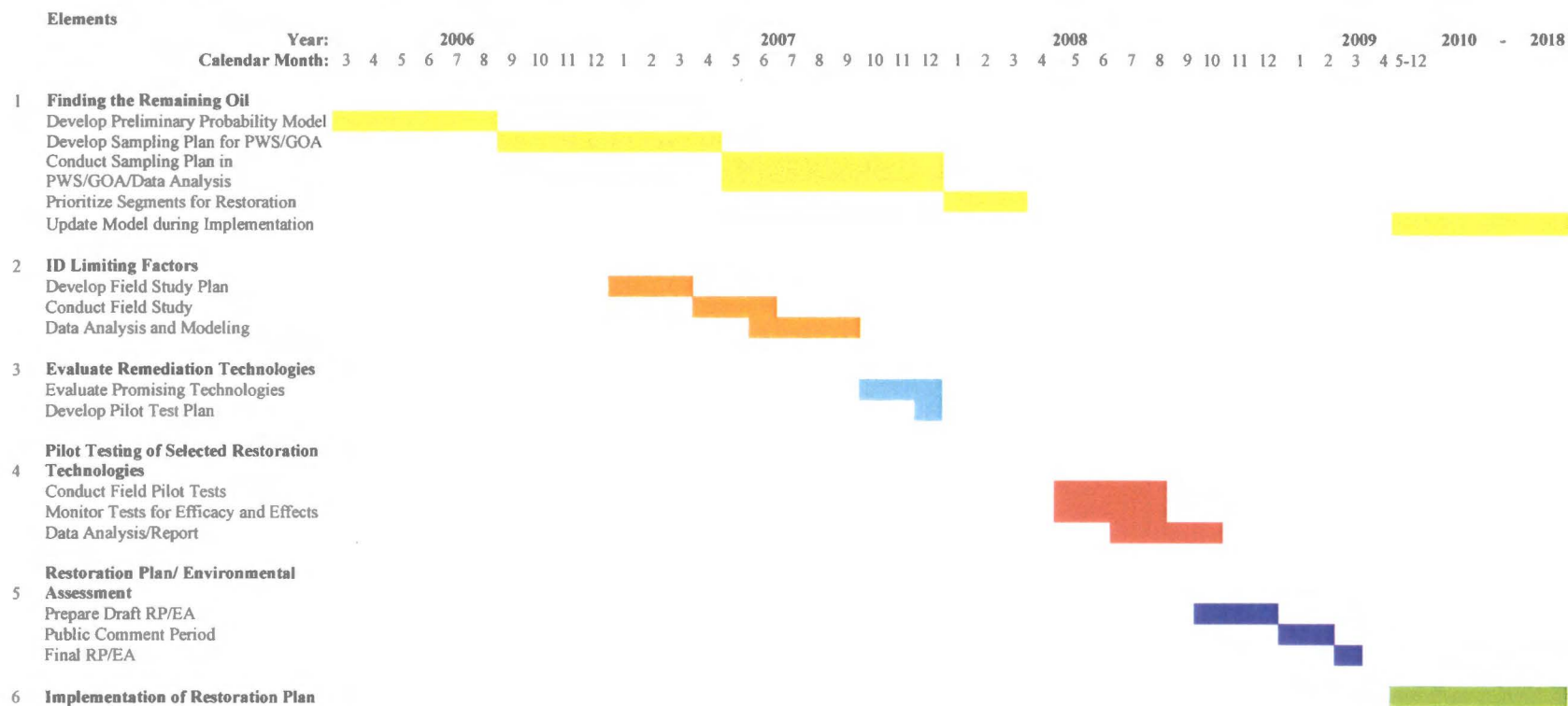
As Council policy is to focus the restoration program on an *ecosystem basis*, it is critically important to address protection needs on public lands and waters in addition to private lands in the region. *This is clearly the most significant failure to date in the 25-year EVOS restoration program.*

The Council should identify protections on public lands and waters that would contribute to the overall restoration and recovery of the injured ecosystem and resource services. As state and federal assets are already in public ownership, such protections should cost little or no money.

This should include recommending establishment of additional Marine Protected Areas (MPAs) in state and federal waters, including waters around the Barren Islands, and off Kenai Fjords and Katmai National Parks; and designating additional wilderness areas on federal lands, including the Nellie Juan-College Fjord Wilderness (Study) Area (WSA) in western Prince William Sound. This 2.1 million acre WSA was established in 1980 by ANILCA (34 years ago). And in 2002 (12 years ago), the Revised Chugach Forest Plan recommended 1.4 million acres of the WSA be designated as wilderness. It is time to designate this area, to offset injured resources and resource services, in the interest of EVOS restoration.

The federal administration should explore opportunities to use its executive authority under the Antiquities Act to designate critical restoration protections (e.g., national monuments) on federal lands and waters in the oil spill region that would contribute to the Trustee Council's overall restoration goals. At a minimum, the federal administration should designate the Nellie Juan-College Fjord National Monument (and wilderness area) using its Antiquities Act authority.

Public lands and waters protections constitute by far the most significant, high-value/low-cost EVOS restoration opportunity remaining to the governments.





AKEN: FEBRUARY 18, 2014

QUANTIFYING TEMPORAL AND SPATIAL VARIABILITY ACROSS THE NORTHERN GULF OF ALASKA TO UNDERSTAND MECHANISMS OF CHANGE

SCIENCE SYNTHESIS REPORT FOR THE GULF WATCH ALASKA PROGRAM

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

DECEMBER 1, 2014

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Questions? Email dugan@aoos.org