920612243

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project: Paint River Fish Ladder Salmon Stocking Program

Justification: (Link to Injured Resource or Service)

Salmon resource damaged

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

adequately fund salmon program at Paint River.

Estimated Duration of Project: 4 years

Estimated Cost per Year: Consecutive years – $50,000
324,000
119,000
122,000

Other Comments:

Name, Address, Telephone:

Brad Chisholm
Box 1585
Homer, AK 99603

235-4189

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

_____ fold here _____

PLACE
STAMP
HERE

Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:
Paint River Fish Ladder Salmon Stocking Program

Justification: (Link to Injured Resource or Service)
The Salmon Resource was Damaged by the Oil

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)
A Fish ladder in Kamishak Bay at
Paint River was constructed during 1991 and
[illegible]em needs funding for stocks of Pink
[illegible] Salmon to be introduced into
[illegible]king would benifit Salmon
who were directly impacted
Oil Spill.
[illegible]ing would also benifit the
[illegible]urce, that was impacted by
[illegible]ams, on the Beaches in
[illegible]rounds, and in the water

Document ID Number
9206122 43
☐ A-92 WPWG
☐ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

[illegible]ct: Four Years

50,000, 324,000, 119,000, and 122,000

Project deserves some
[illegible]n one considers some
[illegible]e been funded that are outside
[illegible]ll Affected area.

Author, Address, Telephone:
Brad Chisholm
Box 1585
Homer AK 99603

907-235-4189

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

fold here

Brad Chisholm
Box 1585
Homer AK 99603

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645 G St
Anchorage, Alaska 99501

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☐ C-RFWG
☐ D-PAG
☐ E-MISC.

9206/2243

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
✓			1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
✓			3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

ID # 92061243

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

C Checked for Completeness

- ID stamped/Input completed
- Name
- Affiliation
- Costs

✓ Category Pastoralism Manipulation + Enhancement

✓ Lead Agency AQF+G

✓ Cooperating Agency(ies)

(Y) N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR PUBLIC IDEAS FOR RESTORATION PROJECTS

Title of Project: Enhanced management for cutthroat trout and Dolly Varden in Prince William Sound.

Justification: Recreational fishing for Dolly Varden and cutthroat trout was curtailed by emergency closures and changes in sport regulations following the oil spill. These actions were based on higher mortality and slower growth for fish in oiled areas than in non-oiled areas, and also based on the small population sizes of cutthroat trout at two of the three oiled areas that were studied, as well as predicted faster recovery times for the stocks if they were closed to sport fishing. In other parts of Prince William Sound (PWS), however, there is insufficient information about stock sizes of these two species to know what management actions are appropriate. Without appropriate information on which to base management action, injury may occur to other stocks or overly conservative regulations may be made which would restrict recreational sport fishing opportunities.

Description of Project: The goal of this project is to continue to collect the information needed to develop a management plan which will provide for the responsible management of Dolly Varden and cutthroat trout fisheries in PWS. The management plan will allow for recovery of depressed stocks while assuring that anglers can fish for Dolly Varden and cutthroat trout where stocks are healthy enough to withstand fishing pressure. The major objectives of this project are; to identify sites that support major populations of Dolly Varden and cutthroat trout fisheries in PWS, to estimate abundance of major overwintering population of Dolly Varden and cutthroat trout in PWS, and to gain additional information about cutthroat trout and Dolly Varden movement in PWS.

This proposed project has the same objectives and goals as R106; the "Technical Support Study for the Restoration of Dolly Varden and cutthroat trout populations in Prince William Sound". R106 collected information in 1991 but was not funded for 1992. Therefore this proposed plan will pick up where R106 left off. The major objective that needs to be completed is the estimation of population abundance for major overwintering populations of Dolly Varden and cutthroat trout. Abundance will be estimated utilizing weirs and mark-recapture methods.

Estimated Duration of Project: 4 years

Estimated Cost per Year: $250,000

Other Comments: This project was started in 1991, therefore, some materials are already available.

Cordova Fly-Fishers
David A Arruda. President
P.O.Box 1768
Cordova, AK. 99574

(907) 424-5536

Because the Oil Spill Restoration is a public process, your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

ID # 9206 15249 -1

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- Costs

✓ Category
Restoration Management Actions

✓ Lead Agency
ADF&G

_____ Cooperating Agency(ies)

_____

(Y) N Passed initial screening criteria

_____

type FIS

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

920615-249-1

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
✓			1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
✓			3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

29728

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR PUBLIC IDEAS FOR RESTORATION PROJECTS

Title of Project: Enhanced management for cutthroat trout and Dolly Varden in Prince William Sound.

Justification: Recreational fishing for Dolly Varden and cutthroat trout was curtailed by emergency closures and changes in sport regulations following the oil spill. These actions were based on higher mortality and slower growth for fish in oiled areas than in non-oiled areas, and also based on the small population sizes of cutthroat trout at two of the three oiled areas that were studied, as well as predicted faster recovery times for the stocks if they were closed to sport fishing. In other parts of Prince William Sound (PWS), however, there is insufficient information about stock sizes of these two species to know what management actions are appropriate. Without appropriate information on which to base management action, injury may occur to other stocks or overly conservative regulations may be made which would restrict recreational sport fishing opportunities.

Description of Project: The goal of this project is to continue to collect the information needed to develop a management plan which will provide for the responsible management of Dolly Varden and cutthroat trout fisheries in PWS. The management plan will allow for recovery of depressed stocks while assuring that anglers can fish for Dolly Varden and cutthroat trout where stocks are healthy enough to withstand fishing pressure. The major objectives of this project are; to identify sites that support major populations of Dolly Varden and cutthroat trout fisheries in PWS, to estimate abundance of major overwintering population of Dolly Varden and cutthroat trout in PWS, and to gain additional information about cutthroat trout and Dolly Varden movement in PWS.

This proposed project has the same objectives and goals as R106; the "Technical Support Study for the Restoration of Dolly Varden and cutthroat trout populations in Prince William Sound". R106 collected information in 1991 but was not funded for 1992. Therefore this proposed plan will pick up where R106 left off. The major objective that needs to be completed is the estimation of population abundance for major overwintering populations of Dolly Varden and cutthroat trout. Abundance will be estimated utilizing weirs and mark-recapture methods.

Estimated Duration of Project: 4 years

Estimated Cost per Year: $275,000

Other Comments: This project was started in 1991, therefore, some materials are already available.

Name, Address, Telephone
Suzanne McCarron
333 Raspberry Rd.
Anchorage, AK 99518

(907) 267-2148

Because the Oil Spill Restoration is a public process, your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

ID # 920615297-28

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration - ~~Enhancement~~ Management

✓ Lead Agency

ADF&G

✓ Cooperating Agency(ies)

USFS

0 N Passed initial screening criteria

type FIS

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

920615297-28

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
✓			1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
✓			3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project: Village Mariculture Project

Justification: (Link to Injured Resource or Service) Lost economic opportunities and shellfish beds were destroyed by the spill.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)
Establish commercial shellfish and kelp businesses in villages effected by the spill (Tatitlek, Chenega Bay, Eyak, Port Graham and Nanwalek). The goal is to create self sustaining business enterprises and be able to support 4 - 10 individuals full time. A shellfish mariculture specialist will be hired to train villagers how to set up oyster farms utilizing hanging culture to create a high quality product. Economic and subsistnece opportunities will be enhanced.

Estimated Duration of Project: Four years to develop farms until operations are self-sustaining.

Estimated Cost per Year: Capitol Cost: $100,000 per village per million oysters*
Annual operating costs: $250;000

Other Comments: These projects are designed to be self sustaining after initial startup. * Figures are based upon oyster farms but potential in clams, scallops and kelp needs to be investigated.

Name, Address, Telephone:
Tasha Chmielewski
Chugach Regional Resources Commission
3300 C Street
Anchorage, Alaska 99503
(907) 562-4155

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

ID # 920615270-02

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration - manipulation

✓ Lead Agency

ADF&G

_____ Cooperating Agency(ies)

_____

(Y) N Passed initial screening criteria

_____

type = IS

_____

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

920615270-02

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
✓			1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
✓			3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

920615279 24

KITOI BAY HATCHERY ON AFOGNAK ISLAND
OIL SPILL SETTLEMENT FUND PROPOSAL

JUSTIFICATION

There appears to be a very strong correlation between salmon run size and early marine rearing conditions. Identifying early marine environmental parameters specific to the Kitoi Bay/Izhut Bay complex which would have been impacted by oil-contaminated waters is extremely important. Implementing restoration requirements for Kitoi Hatchery production requires these types of studies. KRAA's investment into this facility is long-term and requires the type of protection provided by projects such as C.F.O.S.

PROPOSED PROJECT

The Kodiak Regional Aquaculture Association (KRAA) recommends the initiation of a study in the Kitoi Bay/Izhut Bay complex which addresses juvenile salmon survival in the early marine environment. The Kitoi Bay Hatchery produces in excess of 180 million juvenile salmon annually which use this bay complex for early marine rearing. In 1989 this area yielded significant quantities of oil during spill clean-up operations. Since juvenile salmon are very vulnerable to toxic levels of oil-contaminated waters, this bay complex will represent an excellent opportunity for collecting information needed to verify restoration requirements for impacted hatchery production. Currently this type of study is being conducted in Prince William Sound under the category of Cooperative Fisheries and Oceanographic Studies (C.F.O.S.) through the University of Alaska. The Kitoi Bay Hatchery facility is well situated for implementing such a study.

ESTIMATED DURATION OF PROJECT: 1993 through 2001

ESTIMATED COST PER YEAR: $ 45,000 per year

COMMENTS: This proposal addresses Options 2, 3, 11, and 14 in the Exxon Valdez Oil Spill Restoration Framework, Volume I.

CONTACT:

Larry Malloy
Kodiak Regional Aquaculture Association
PO Box 3407
Kodiak, AK 99615
486-6555

ID # 9206 5279-24

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category
Restoration Manipulation or Enhancement

✓ Lead Agency
AO F&G

✓ Cooperating Agency(ies)

(Y) N Passed initial screening criteria

type FIS

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

9206 5279-24

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
✓			1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
✓			3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:
Silver Lake Fish Hatchery

Justification: (Link to Injured Resource or Service)
Rebuild the fish stock in the Lagoon below Silver Lake - East end of Galena Bay

Description of Project:
Construct a fish hatchery at the lagoon near the East end of Galena Bay and below Silver Lake.
OBJECTIVE: to recover the salmon species lost by the oil spill that occurred a few miles away on Bligh Reef. This will make it easier to construct a hydropower plant at Silver Lake. The hydropower plant will provide all of the water and electricity needed to run and operate the fish hatchery. The hydropower plant could either be constructed with private funding or with funding from this Exxon Restoration.
LOCATION: at the Lagoon at the east end of Galena Bay, below Silver Lake, on the east side of Valdez Arm.
RATIONALE: The oil spill destroyed much of the salmon habitat. This is an opportunity to restore the salmon habitat near the Valdez/Cordova area and build the fish hatchery near a proposed hydropower plant that could provide water and electricity for the hatchery.
TECHNICAL APPROACH: Prince William Sound Aquaculture Association would play a role along with Copper Valley Electric Association and Whitewater Engineering Corporation who has the preliminary FERC permit to construct the hydropower project.

Estimated Duration of the Project: 30 years

Estimated Cost per Year: $ 1,000,000

Thom A. Fischer, P.E.
Whitewater Engineering Corporation
1050 Larrabee Ave., Suite 104-707
Bellingham, WA 98225
(206) 733-3008

ID # 9206152 86-02

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration - Enhancement

✓ Lead Agency

ADF&G

_____ Cooperating Agency(ies)

_____

Y N Passed initial screening criteria

unknown

type FIS

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

420615286-02

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
__	__	✓	1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓	__	__	2. Technical feasibility.*
✓	__	__	3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL IDEAS FOR RESTORATION PROJECTS

Title of Project: Kenai River Sockeye Salmon Restoration (Restoration Project 53)

Justification: Sockeye salmon *Oncorhynchus nerka* which spawn in the Kenai River system were injured by the *Exxon Valdez* oil spill. Greatly reduced fishing time in the Upper Cook Inlet area due to the oil spill caused sockeye spawning escapement levels in the Kenai River system to exceed the desired amount by three times. The biological impact of the oil spill on Kenai River sockeye salmon stocks is expected to be serious. Data collected by NRDA Fish/Shellfish Study 27, *Sockeye Salmon Overescapement*, resulted in greatly reduced survival of juvenile sockeye salmon during the winter-spring rearing period. The extremely high escapement may have initially produced more rearing juvenile sockeye salmon than could be supported by nursery lake productivity. In general, when rearing salmon abundance greatly exceeds lake carrying capacity, the species and size composition of prey resources are altered which affects all trophic levels. Because of such changes, juvenile sockeye growth is reduced, freshwater mortality is increased, greater proportions of fry remain in the lake for another year of rearing, and smolt condition is reduced and marine mortality is increased. Limiting sockeye salmon fry production by closely regulating the number of spawning adults may be the only way to restore the productivity of these rearing areas. However, the number of adult sockeye salmon returning from the 1989 escapement may be so low that a severe reduction, or complete elimination, of human use of this species may be necessary starting in 1993 to ensure minimum escapements.

Description of Project: The goal of this project is to restore Kenai River sockeye salmon stocks injured by the oil spill. This will be accomplished through improved stock assessment capabilities, more accurate regulation of spawning levels, and modification of human use. Specific objectives of this proposal are to (1) improve stock identification capabilities by combining parasite and genetic stock identification information with available scale growth data in algorithms to provide estimates of Kenai River stocks in the mixed stock fishery of Upper Cook Inlet (UCI), (2) increase the accuracy and precision of escapement monitoring by replacing obsolete hydroacoustic equipment used in the Kenai River, and (3) provide more accurate estimates of abundance of Kenai River sockeye salmon within UCI by increasing the sampling power of an offshore test fishing program through increasing the number of boats or by incorporating hydroacoustic assessment techniques.

Estimated Duration of Project: Four additional years will be required to meet project objectives. Adult returns from the injured 1989 brood year will occur during 1993-1995, but information on the 1990, 1991, and 1992 brood years will also be needed to monitor recovery of the system. Adult returns from the 1992 brood year will not be observed until 1996.

Estimated Cost (per year): $580,000

Comments: Currently funded as Restoration Study 53

Name, Address, Telephone:
Kenneth E. Tarbox (907) 262-9369
Alaska Department of Fish and Game
34828 Kalifornsky Beach Road, Suite B
Soldotna, AK 99669-3150

JUN 08 REC'D

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

WALTER J. HICKEL, GOVERNOR

333 RASPBERRY ROAD
ANCHORAGE, ALASKA 99518-1599
FAX (907) 344-9238

RAPIFAX TRANSMITTAL SHEET

To: Dave Gibbons
EVOS Rest. Team

Date: 6-8-92

No. Pages 2
(include this page)

From: L. Brannian
CF 267-2118

Message:

ID # 920608185

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

ID stamped/Input completed
Name
Affiliation
Costs

✓ Category Management Actions ~~Monitoring – Salmon~~

✓ Lead Agency ADFG

_____ Cooperating Agency(ies)

(Y) N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
✓			1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
✓			3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

29743

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
IDEAS FOR RESTORATION PROJECTS

Title of Project: Kenai River Sockeye Salmon Restoration (Restoration Project 53)

Justification: Sockeye salmon *Oncorhynchus nerka* which spawn in the Kenai River system were injured by the *Exxon Valdez* oil spill. Greatly reduced fishing time in the Upper Cook Inlet area due to the oil spill caused sockeye spawning escapement levels in the Kenai River system to exceed the desired amount by three times. The biological impact of the oil spill on Kenai River sockeye salmon stocks is expected to be serious. Data collected by NRDA Fish/Shellfish Study 27, *Sockeye Salmon Overescapement*, resulted in greatly reduced survival of juvenile sockeye salmon during the winter-spring rearing period. The extremely high escapement may have initially produced more rearing juvenile sockeye salmon than could be supported by nursery lake productivity. In general, when rearing salmon abundance greatly exceeds lake carrying capacity, the species and size composition of prey resources are altered which affects all trophic levels. Because of such changes, juvenile sockeye growth is reduced, freshwater mortality is increased, greater proportions of fry remain in the lake for another year of rearing, and smolt condition is reduced and marine mortality is increased. Limiting sockeye salmon fry production by closely regulating the number of spawning adults may be the only way to restore the productivity of these rearing areas. However, the number of adult sockeye salmon returning from the 1989 escapement may be so low that a severe reduction, or complete elimination, of human use of this species may be necessary starting in 1993 to ensure minimum escapements.

Description of Project: The goal of this project is to restore Kenai River sockeye salmon stocks injured by the oil spill. This will be accomplished through improved stock assessment capabilities, more accurate regulation of spawning levels, and modification of human use. Specific objectives of this proposal are to (1) improve stock identification capabilities by combining parasite and genetic stock identification information with available scale growth data in algorithms to provide estimates of Kenai River stocks in the mixed stock fishery of Upper Cook Inlet (UCI), (2) increase the accuracy and precision of escapement monitoring by replacing obsolete hydroacoustic equipment used in the Kenai River, and (3) provide more accurate estimates of abundance of Kenai River sockeye salmon within UCI by increasing the sampling power of an offshore test fishing program through increasing the number of boats or by incorporating hydroacoustic assessment techniques.

Estimated Duration of Project: Four additional years will be required to meet project objectives. Adult returns from the injured 1989 brood year will occur during 1993-1995, but information on the 1990, 1991, and 1992 brood years will also be needed to monitor recovery of the system. Adult returns from the 1992 brood year will not be observed until 1996.

Estimated Cost (per year): $640,000

Comments: Currently funded as Restoration Study 53

Name, Address, Telephone:
Kenneth E. Tarbox (907) 262-9369
Alaska Department of Fish and Game
34828 Kalifornsky Beach Road, Suite B
Soldotna, AK 99669-3150

ID # 920615297-43

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration - ~~Enhancement~~ management

✓ Lead Agency

ADF&G

_____ Cooperating Agency(ies)

Ø N Passed initial screening criteria

RS 53

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

920527041

Title of Project:
Bivalve Shellfish rehabilitation project

Justification: (Link to Injured Resource or Service)
Vast Areas of clam Beds were destroyed by spill

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)
TO Reestablish populations of native Little Neck (Protothaca staminea) Butter (Saxidomus giganteus) and Heart Cockle (Clinocardium nuttalli) clams in those areas of Herring Bay (Knight Island) and other beaches selected as required or most needed.

Bivalve clams are a main source of Subsistance life style as well as a potential commercial resource and popular sport fish food. By providing a means of rehabilitation for affected populations earlier than would be naturally occuring, shellfish populations would rebound sooner and become available for common harvest.

Two methods of rehabilitation would be utilized. ① An unaffected beach area would be selected along with nearby parcel for a service building. At this site the beach area would be cultivated to produce maximum number of native clams for transplant to affected beaches.

② several unaffected beaches would also be selected for

Estimated Duration of Project: 10 to 15 years

Estimated Cost per Year: $860,000/yr 1st ⅔ yr., $180,000/yr final 14 yrs.

Other Comments: Numerous float plane trips would be required annually to and from broodstock sites, in addition a 22' Aluminum skiff would be needed to move broodstock to relocation sites. this vessel would require a small cabin and twin 150hp outboards

Name, Address, Telephone:
MIKE MOYER
5178 SHORELINE DRIVE
KETCHIKAN, AK 99901
(907) 225-1955

(2) cont.

use as broodstock sites. Broodstock sites would be selected on the basis of their ability to produce the required native clams. From these sites clams would be collected annually and transplanted to those beaches selected as having the most need and ability to accept the re-establishment of clams most effectively.

Building requirements:

A.) 40' x 40' single story structure
B.) minimum 250 gal./min seawater pump to structure.
C.) 8 2'x3'x20' holding troughs w/assoc. PVC plumbing for each tank.
D.) Aux. diesel generator w/sled. ; 2000 gallon fuel storage.

Location: Cordova or Valdez area

Staff requirements:

A.) Project Leader: Biologist w/min B.S. in marine biology, several years aquaculture exp. + familiar w/sound area.
Salary: $68,000/yr

B.) Three technicians: Education: High school w/local familiarity of Sound area + good physical health.
Salary: $1800/mo. seas. / 4 to 5 mo./year May thru Sept.

P.W.S. Shellfish Rehabilitation Project

Operation Costs: year 1		Annual Costs est. year 2 - 15	
Building	$ 650,000.00	$ 2,000.00	maint.
Salaries	73,400,00	73,400.00	
Boat/motors	65,000.00	500.00	maint.
Permitting	50,000.00	350.00	
Fuel	8,000.00	6,500.00	
Air travel	8,000.00	8,000.00	
Food	8,000.00	8,000.00	
	$ 862,400.00	$ 98,750.00	

M. Moyer
5178 Shoreline Dr.
Ketchikan, Ak
99901

Document ID Number
9205270411

- [ ] A-92 WPWG
- [x] B-93 WPWG
- [ ] C-RPWG
- [ ] D-PAG
- [ ] E-MISC.

Exxon Valdez Trustee Council
645 G St.
Anchorage, Ak
99501

MAY 27 REC'D

Attn: 1993 Work Plan

ID # 920527041

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration - Enhancement

✓ Lead Agency

ADF&G

_____ Cooperating Agency(ies)

_____

(Y) N Passed initial screening criteria

_____

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

Document ID Number
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☐ C-RPWG
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☐ E-MISC.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Clam Enhancement

Justification: (Link to Injured Resource or Service)

Local subsistance, development of mariculture technology

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

Goals: Enhance native littleneck and butter clam populations.

Objectives: Develop enhancement techniques for native clam populations including juveille production and grow out techniques.

Location: Institute of Marine science, Seward Alaska
Fairmont Island, Naked Island, Tatitlek, Cheaga Bay, Ls Touche

Rationale: Clam populations used for subsistance in Prince William Sound have been on the decline for many years. The Exxon Valdez spill decimated the remaining populations and local use is down dramatically. Enhancement techniques such as the seeding of beaches and predator control have proven successful in other regions. Techniques developed in this project could be applied to developing shellfish industy in Alaska.

Technical Approach: Native shellfish populations will be spawned and raised in a nursery prior to seeding beaches. Predator control will be exercised on enhanced populations and on beaches where natural production is significant. Local population will be surveyed as a baseline to evaluate enhancement success.

Estimated Duration of Project: 5 years

Estimated Cost per Year: $120,000

Other Comments:

Name, Address, Telephone:

Jeff Hetrick
Alaska Aquafarms
P.O. Box 7
Moose Pass, Ak 99631

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

Box 7.
Moose Pass, Ak
99631

MAY 11 REC'D

Exxon Valdez Trustee Council
645 G street
Anchorage, Ak
99501

Attn: 1993 Work Plan

Document ID Numbe
92051400(

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ID # 9205140006

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

ID stamped/Input completed
Name
Affiliation
Costs

✓ Category

Manipulation + Enhancement

✓ Lead Agency

ADF+G

_____ Cooperating Agency(ies)

_____

(Y) N Passed initial screening criteria

_____

Type FIS

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Ayakulik River Sockeye Salmon Escapement Evaluation

Justification: (Link to Injured Resource or Service)

Over escapement due to the oil spill resulted in reduced productivity. Escapement may be reduced to assist the recovery of the system.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

The goal of this project will be to evaluate the effects of various in-season levels of salmon abundance on brown bear and bald eagle use of key tributaries. The project will determine the escapement level necessary to maintain brown bear and bald eagle use within + 20 percent of the current level.

This information is needed to determine the minimum number of salmon needed to maintain brown bear and bald eagle feeding habitat. This data will ensure that proposed changes in escapement do not adversely impact refuge purposes, i.e. maintenance of populations and habitat.

Aerial surveys will be used to index in-season salmon escapement and wildlife abundance on several tributaries on a weekly basis from mid-June through August 30.

Estimated Duration of Project: Three years

Estimated Cost per Year: $6,000/year

Other Comments: All cost will be salaries and flight charges for refuge aircraft.

This proposal addresses Options 2, 3, 7, and 11 in the Exxon Valdez Oil Spill Restoration Framework, Volume I.

Name, Address, Telephone:

Kodiak National Wildlife Refuge
1390 Buskin River Road
Kodiak, Alaska 99615
(907) 487-2600

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ID # 920615-279-10

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

ID stamped/Input completed
Name
Affiliation
Costs

✓ Category Management actions

~~Research & Assessment~~

✓ Lead Agency
AOF+G

✓ Cooperating Agency(ies)
DOI CLS FWS

(Y) N Passed initial screening criteria

Type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

SOCKEYE SALMON ESCAPEMENT EVALUATION
AYAKULIK RIVER
OIL SPILL SETTLEMENT FUNDS

Proposed Development:

The Kodiak National Wildlife Refuge proposes to develop a method to identify the minimum number of sockeye salmon needed to maintain brown bear feeding habitat on specific tributaries of the Ayakulik River drainage. The Connecticut and Southeast Creeks which drain into the Red Lake sub-drainage of the Ayakulik have been indexed during the months of July and August for brown bear abundance and composition since 1960 (Barnes, 1990). This information is used by management to monitor bear population trends and use of critical habitats on the southern portion of the refuge. The relationship of sockeye escapement into these key tributaries to brown bear abundance is unknown.

This study would evaluate the effects of various in-season levels of salmon abundance on brown bear use of these key tributaries and determine sockeye escapement necessary to maintain brown bear use within ±20 percent of the current use level. To accomplish this aerial surveys will be used to index in season salmon escapement and brown bear abundance on these tributaries on a weekly basis from mid-June through August 30. Salmon escapement and bear use through the season will be determined using the area under the curve method (Johnson and Barrett, 1988). The study is proposed for a period of 3 years (1992-1994) to obtain replicate data sets.

Facilities Required:

No facilities are required for this project. All field work to be conducted will be accomplished through aerial surveys on the key tributaries of the Ayakulik drainage.

Estimated Facilities Cost:

Salaries GS/5 (3pp @ $915/pp)	$ 2,750
Aerial Surveys US Government Aircraft (44 hrs @ $59/hr)	2,600
Sub total	$ 5,350
Total (1992-1994)	$16,050

Justification:

From the early 1970's, with the exception of 1975, sockeye salmon escapement into the Ayakulik drainage has generally exceeded 150 thousand fish annually. This escapement level has been sufficient to maintain high brown bear use of the Red Lake tributaries during summer. The current maximum desired early and late run sockeye escapement for the system is 300 thousand fish. In 1989 an overescapement of approximately 780 thousand sockeye was recorded as a result of the Exxon oil spill. In addition, escapement into the system during 1990 and 1991 exceeded the desired maximum of 300 thousand by approximately 25 percent. As a result, the sockeye juvenile rearing capacity of the system may have been overstressed which may result in substantially decreased returns in future years. A reduction in escapement may effect brown bear use on the key index streams. Information is needed to identify the minimum number of sockeye necessary to maintain the seasonal brown bear feeding habitat in these tributaries and to effectively utilize bear survey data so that population or use trends are accurately and quickly detected.

Literature Cited:

Barnes Jr, Victor G. 1990 The influence of salmon availability on movements and range of brown bears on southwest Kodiak Island. Int. Conf. Bear Res. and Manage. 8:305-313.

Johnson, B.A. and B.M. Barrett. 1988. Estimation of salmon escapement based on stream survey data: a geometric approach. Alaska Dep. Fish and Game. Regional Inf. Rpt. 4K88. Kodiak.

Submitted By:

U. S. Fish and Wildlife Service - Kodiak National Wildlife Refuge.

ID # 92060105B-05

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

~~Other – Science~~ Management Action

Lead Agency

ADFG

Cooperating Agency(ies)

DOI USFWS

(Y) N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

9206102 30-01

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project: Experimental Evaluation of Oiled/Control Paired Design used in Assessing Damages and Recovery of Intertidal, Subtidal Communities

Justification: (Link to Injured Resource or Service)

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

Estimated Duration of Project: 1 - 3 years

Estimated Cost per Year: $150,000

Other Comments:

Name, Address, Telephone:

Dr. Thomas Dear
Coastal Resources Associates
2270 - I Camino Vida Roble
Carlsbad, CA 92009

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Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

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Coastal Resources Associates

2270 Camino Vida Roble, Suite L
Carlsbad, CA 92008
(619) 438-0588

FAX TRANSMITTAL COVER

Deliver To:	TO: Dave Gibbons
Contact Name:	
Fax Number:	901-376-0178
Sender:	Tom Doon
Description:	Coordination Letter

Number of pages (not including cover):	3
Date Sent: 6/10/92	Time Sent: 3:00 pm

If there are any problems with this transmission, please call (619)438-0588 immediately

Coastal Resources Associates
2270 Camino Vida Roble, Suite L
Carlsbad, CA 92009
(619) 438-0588

9 June 1992

Dr. Dave Gibbons
Exxon Valdez Oil Spill Restoration Team
645 "G" Street
Anchorage, AK 99501

Dear Dr. Gibbons:

Enclosed are several ideas for restoration projects to be conducted in 1993. Thank you for the opportunity to present these.

Sincerely,

Thomas A. Dean, Ph.D.

cc: Mr. Mark Fraker
Dr. Art Weiner

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

IDEAS FOR RESTORATION PROJECTS

Title of Project: Experimental Evaluation of the Oiled/Control Paired Design Used in Assessing Damages and Recovery of Intertidal and Subtidal Communities.

Justification: (Link to Injured Resource or Service)
Damages to a variety of plants and animals in the intertidal and subtidal communities of Prince William Sound have been observed as the result of the EXXON VALDEZ oil spill. Some of the damaged populations are apparently recovering, while others are not.

Description of Project: (e.g. goal(s), objectives, location, rationale technical approach)
Goals: Evaluate the paired oil/control sampling design used to assess damages and recovery from the EXXON VALDEZ oil spill. Also refine the criteria used for selection of an experimental design and sampling sites to be used in future spill monitoring.
Objective: Test the assumption that oiled and control sites selected for study in coastal habitat damage assessment and resource recovery studies were similar except with respect to oiling. Define criteria that may lead to selection of oiled and control sites in future monitoring.
Location: Studies will be conducted in areas of Prince William Sound not impacted by the EXXON VALDEZ oil spill.
Rationale: The quantitative assessment of impacts of damages to biological resources in coastal habitats, as well as recovery from these damages, relies on comparisons between selected oiled and control sites that were sampled after the EXXON VALDEZ oil spill. The assessment of impacts based on this design rests on the assumption that pairs of oiled and control sites were similar except for the presence of oil. Without independent evidence in support of this assumption, there will always be the suspicion that differences among oiled and control sites may have resulted from some inherent differences among sites rather than from oiling. A "slow recovery" could also be interpreted as a result of inherent differences unrelated to oiling.
Technical Approach: An oil spill simulation model will be used to identify set of hypothetically "oiled" sites within Prince William Sound. A subset of the "oiled" sites will be selected at random, and these sites will be visited. Paired "control" sites will be selected that match the "oiled" sites as closely as possible . The selection of the "control" sites will be based on criteria similar to those used in the selection of control sites in the Coastal Habitat Damage Assessment Studies. We will then sample and determine the population density of a variety of key indicator species at both "oiled" and "control" sites. These will include both intertidal and subtidal species that were assessed as being severely damaged by the EXXON VALDEZ oil spill. In addition, a number of other selected physical variables (eg temperature, salinity, depth, slope, aspect) will be measured at each site. Possible differences between "oiled" and "control" sites will be determined using statistical methods comparable to those used by the Coastal Habitat damage assessment program. We will attempt to explain possible differences among sites based on physical differences among sites.

Estimated Duration of Project: One to three years

Estimated Cost per Year: $150,000

Other Comments: Logistical costs for this project could be reduced by combining efforts with other Coastal Habitat sampling programs.

Name, Address, Telephone:

Dr. Thomas A. Dean
Coastal Resources Associates
2270-L Camino Vida Roble
Carlsbad, CA 92009
619/438-0588

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ID # 92061023O-01

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Monitoring

✓ Lead Agency

ADFG

✓ Cooperating Agency(ies)

USFS

(Y) N Passed initial screening criteria

type ST

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR PUBLIC IDEAS FOR RESTORATION PROJECTS

Title of Project: Determine the Extent of Oil Spill Injuries to Harlequin Duck Populations in Oiled National Parks.

Justification: Exxon Valdez oil spill injury to harlequin ducks is just beginning to be understood. Apparent failure of harlequin nesting was observed in western Prince William Sound (oiled) in 1990 and 1991 while the eastern Sound (unoiled) enjoyed apparently "normal" harlequin nesting. This fact alone resulted in closure of the harlequin hunting season in the Sound in 1991 by the State of Alaska. The magnitude and extent of this observed effect is just beginning to be studied. Damage assessment studies of harlequin duck injury have been, to date, limited to Prince William Sound.

The extensive oiling of Kenai Fjords National Park and Katmai National Park is well documented. If harlequin ducks in western Prince William Sound were injured by Exxon Valdez oil it is reasonable to project some degree of injury to harlequins occupying suitable habitats in these park units. Harlequins are a high value species to park visitors and a resource important to both parks.

Although hunted elsewhere within the area affected by the spill, harlequins are not hunted in these park units. Thus the parks, to a certain degree serve as refugia for sizeable populations of these and other injured species. It is proposed that this proposal be conducted in cooperation with ongoing harlequin duck efforts by the trustees. Within the spill area, the unhunted (non-harvested) nature of populations of harlequins is unique to these parks and affords the opportunity of comparing rates of recovery of protected and harvested populations.

An expansion of harlequin study of this type also affords the opportunity to extend this important injury investigation to other major spill-affected areas: the Kenai and Alaska Peninsulas.

Description of Project: Determine the habitat use, population status and reproductive activity of harlequin ducks in Kenai Fjords and (coastal) Katmai National Parks. Cooperate or combine with ongoing harlequin efforts to assure compatible census and habitat evaluation techniques and maximum efficiency.

It would be a purpose of this expanded study to provide information necessary to the trustees in order to justify further limiting harlequin hunting seasons or controlling human activities disturbing to harlequins during critical life cycle stages.

Estimated Duration of Project: Three years.

Estimated Cost per Year: $200,000 year one; $100,000 per year thereafter.

Other Comments: None.

For Further Information Contact: Dan Hamson, Chief, Coastal Programs Division, National Park Service, 2525 Gambell Street, Anchorage, Alaska 99503, (907) 257-2526.

ID # 9206/5273-02

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

Category: Damage Assessment

Lead Agency: ADF+G

Cooperating Agency(ies): DOI (NPS)

(Y) N Passed initial screening criteria

type Birds

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

Title of Project: DISTRIBUTION, ABUNDANCE AND AVAILABILITY OF PREY SPECIES FOR APEX PREDATOR SPECIES (COMMON MURRE, PIGEON GUILLEMOT, MARBLED MURRELET, HARBOR SEAL, PINK SALMON, SEA OTTER) INJURED BY THE EXXON VALDEZ OIL SPILL

Justification: There is increasing concern that without better understanding of how prey availability affects growth and reproductive success of apex predators, efforts to restore predator species injured by the oil spill, particularly harbor seal, pigeon guillemot, marbled murrelet, common murre and pink salmon, could be delayed or completely unsuccessful.

Description of Project:

1) Evaluate existing field methods used in determining distribution, abundance and availability of important prey species, both invertebrates and vertebrate forms. Develop or refine new methodologies (e.g., high-frequency quantitative acoustic sampling) as necessary for prey species not generally exploited in the spill area.

2) Evaluate, refine, select or develop numerical models to estimate productivity of important prey species (both invertebrate and vertebrate forms). Include provision to model affects of changing oceanographic regime on prey species productivity.

3) Design sampling program to fulfill requirements of numerical model(s). At minimum, provide for determining densities and species composition of important invertebrate species. For fish species, provide for determining sex, age, growth, recruitment, mortality, etc. Characterize oceanographic regime by measuring currents, salinity, temperature, dissolved gases, dissolved and suspended solids, nutrients, chlorophyll, etc.

4) Determine locations where apex predators forage and conduct field surveys to validate productivity model(s).

Estimated Duration of the Project: 5 years

Estimated Cost Per Year: $500K

Other Comments: This pre-proposal is similar to that drafted by the Restoration Planning Work Group

Name, Address, Telephone:

National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Oil Spill Damage Assessment and Restoration Office
P.O. Box 210029
Auke Bay, AK 99821
(907) 789-6600

Title of Project: Comprehensive Monitoring Program

Justification: There is a need for a comprehensive and integrated monitoring strategy to assess recovery of injured natural resources and services in the oil spill area. Monitoring is required to determine if and when injured resources and services return to their baseline conditions, to evaluate the effectiveness of restoration activities, to detect latent injuries and to reveal long-term trends in the health of ecosystems affected by the spill.

Description of Project: It is the objective of this option to develop and implement a comprehensive and integrated restoration monitoring program that will follow the progress of natural recovery, evaluate the effectiveness of restoration activities, and to establish a ecological baseline from which future disturbances can be evaluated.

Estimated Duration of the Project: 5-10 years (1st year is for planning and following years are for implementation)

Estimated Cost Per Year: $500K

Other Comments: This pre-proposal is similar to that drafted by the Restoration Planning Work Group

Name, Address, Telephone:

National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Oil Spill Damage Assessment and Restoration Office
P.O. Box 210029
Auke Bay, AK 99821
(907) 789-6600

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project: Determine Abundance and Distribution of Forage Fish and Evaluate Influence on Recovery of Seabirds Impacted by the Spill

Justification: (Link to Injured Resource or Service) A number of bird and mammal species rely on forage fish like capelin and sand lance. An understanding of their basic distribution and abundance and the variation these aspects undergo is essential for understanding natural variation in the marine ecosystems. Consequently it is also essential when we are trying to restore some species impacted by oil spills like murres and need to select appropriate restoration options. This project addresses one of the general needs for an improvement of understanding of the long-range underlying mechanisms that limit populations.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach) One of the difficulties of this project is the lack of good methods to determine this type of data. Hence some of this project's effort must go to developing these methods.

Objectives: 1) Determine the abundance and distribution of age class 0 and 1 forage fish for the continental shelf of northwest Gulf of Alaska and along the Alaska Peninsula on a yearly basis;

2) Refine the ability and the methods to get this data;

3) Expand on our understanding of why these variations of distribution and abundance occur;

4) Determine how this abundance of forage fish relates to what murres or selected seabirds consume.

Project Methods and Feasibility:

It is difficult to design a net that is small enough to catch these small fish, but still fast enough to catch them. This is also an expensive project because it requires the use of large fishing or research vessels over a large period of time. However, if they ever decide to have a commercial fisheries for these forage fish in Alaska like they do elsewhere in the world, then it will become even more important to learn this information and the methods will be invented. The use of hydroacoustic equipment such as found on the M/V Tiglax in combination with sampling and ground-truthing by fishing vessels might be such a method.

Estimated Duration of Project: This type of baseline study should proceed over a 3-5 year period at the least so as to begin to understand some of the normal variation that occurs.

Estimated Cost per Year: Only the roughest estimate is offered here and it is based on the fact that large vessels like the M/V Tiglax or larger would be used. Therefore, we would estimate that at least $250,000 or more might be required each year.

Other Comments: None

27332

Name, Address, Telephone: U.S. Fish and Wildlife Service
1011 East Tudor Road
Anchorage, Alaska 99503

(907) 786-3494

ID # 9206/5-273-32

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

ID stamped/Input completed
Name
Affiliation
Costs

✓ Category Restoration Management Actions

✓ Lead Agency ~~Restoration Mgmt~~ ADF+G

✓ Cooperating Agency(ies) NOAA, DOI - FWS

(Y) N Passed initial screening criteria

Type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

ASSESSMENT AND QUALITY ASSURANCE OF SHELLFISH RESOURCES

JUSTIFICATION:

During the Exxon Valdez oil spill, Razor Clams, Siliqua patula habitat on the Alaskan Peninsula (Swikshak, Big River and Village beaches; Hallo, Kashvik, and Puale Bays) and on Kodiak Island were impacted by oil. This work is necessary to better assess this damage to the commercially valuable resource and restore market confidence in the quality of clam resources.

DESCRIPTION OF PROJECT:

1. Implementation of assessment of the contamination and health of Razor Clam stocks based on a comparison of existing baseline data with surveys and local testing leading to FDA certification by the National Shellfish Sanitation Program.

2. Institute a program of market quality assurance to include the site selection, purchase and construction of relay and shorebased facilities to hold and test shellfish.

ESTIMATED DURATION OF PROJECT:

The site selection and development of shorebased facilities and laboratory capabilities begins in March (Year 1). The assessment of Razor Clam populations begins in May (Year 1) until October (Year 1), and from May (Year 2) until October (Year 2).

ESTIMATED COST PER YEAR: FY 93 $300,000; FY 94 $200,000.

OTHER COMMENTS:

This proposal addresses Options 2, 3, and 13 in the Exxon Valdez Restoration Framework, Volume I.

NAME, ADDRESS, TELEPHONE:

Mark Donohue
Kodiak Area Native Association
402 Center Ave.
Kodiak, AK 99615

907-486-5725

ID # 9206 15 379-30

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

ID stamped/Input completed
Name
Affiliation
Costs

Monitoring ~~Habitat Enhancement~~ Education

✓ Category Restoration

✓ Lead Agency ADF&G

✓ Cooperating Agency(ies) NOAA

✓ Y N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

920610230-0

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project: Experimental Studies of Interactions Between Subtidal Epifaunal Invertebrates

Justification: (Link to Injured Resource or Service)

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

Estimated Duration of Project: 1 year

Estimated Cost per Year: $90,000

Other Comments:

Name, Address, Telephone:

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Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

IDEAS FOR RESTORATION PROJECTS

Title of Project: Experimental Studies of Interactions Between Subtidal Epifaunal Invertebrates.

Justification: (Link to Injured Resource or Service)
Changes in the population structure of subtidal epibenthic invertebrates occurred as a result of the EXXON VALDEZ oil spill. Many of these changes persist, and their impact on other trophic levels and potential for recovery are difficult to predict.

Description of Project: (e.g. goal(s), objectives, location, rationale technical approach)
Goals: Determine ecological interactions among key species in the shallow subtidal community in order to assess direct and indirect impacts of the oil on these and associated species, and to predict the rate and course of recovery.
Objective: Conduct experiments to examine interactions among eelgrass, mussels (*Musculus*), helmet crabs, and starfish in the shallow subtidal community. Determine feeding relationships among species, determine the impact of decreased crab and leather star abundance on the population density of other species, and determine the importance of increased *Musculus* abundance on other species.
Location: Experiments will be carried out at one site (either Herring Bay or Sleepy Bay) within the eelgrass habitat in Prince William Sound.
Rationale: Population densities of several species (eg. eelgrass, helmet crabs, and leather stars) declined as the result of oiling, while others (juvenile Pacific cod, juvenile sunflower sea stars, and mussels (*Musculus*) increased. Many of these changes persist. We suspect that the changes observed are a result of direct effects of oil as well as indirect effects such as predator-prey interactions. However, the interactions among species and the effects of changes on higher trophic levels are poorly understood. As a result, interpretation of the overall ecological effect of the changes to subtidal populations, and assessment of recovery, are limited.
Technical Approach: Three or more experiments will be conducted to examine the interactions among epibenthic species in the shallow subtidal eelgrass community. These experiments will entail the removal of crabs, the removal of *Musculus*, and the removal of starfish from within experimental plots in the shallow subtidal, and the subsequent monitoring of the effects of removal on other species. In addition, we will make quantitative observations of feeding by fish and birds; larvae settlement by *Musculus*, juvenile cod, and juvenile starfish; and gut contents of fish, starfish, and crabs within the experimental plots and at the site in general.

Estimated Duration of Project: One year

Estimated Cost per Year: $90,000

Other Comments: This project will benefit from possible shared logistical costs with other restoration projects being carried out in Prince William Sound. This will be a cooperative effort with Mr. Stephen Jewett of the University of Alaska.

Name, Address, Telephone:

Dr. Thomas A. Dean
Coastal Resources Associates
2270-L Camino Vida Roble
Carlsbad, CA 92009
619/438-0588

ID # 92061023O-02

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ID stamped/Input completed
- Name
- Affiliation
- Costs

✓ Category

~~A~~ Damage Assessment

✓ Lead Agency

~~ADF+G~~

_____ Cooperating Agency(ies)

_____

(Y) N Passed initial screening criteria

_____

type ST

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

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Document ID Number
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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

IDEAS FOR RESTORATION PROJECTS

Title of Project: Experimental Studies of Interactions Between Subtidal Epifaunal Invertebrates.

Justification: (Link to Injured Resource or Service)
Changes in the population structure of subtidal epibenthic invertebrates occurred as a result of the EXXON VALDEZ oil spill. Many of these changes persist, and their impact on other trophic levels and potential for recovery are difficult to predict.

Description of Project: (e.g. goal(s), objectives, location, rationale technical approach)
Goals: Determine ecological interactions among key species in the shallow subtidal community in order to assess direct and indirect impacts of the oil on these and associated species, and to predict the rate and course of recovery.
Objective: Conduct experiments to examine interactions among eelgrass, mussels (*Musculus*), helmet crabs, and starfish in the shallow subtidal community. Determine feeding relationships among species, determine the impact of decreased crab and leather star abundance on the population density of other species, and determine the importance of increased *Musculus* abundance on other species.
Location: Experiments will be carried out at one site (either Herring Bay or Sleepy Bay) within the eelgrass habitat in Prince William Sound.
Rationale: Population densities of several species (eg. eelgrass, helmet crabs, and leather stars) declined as the result of oiling, while others (juvenile Pacific cod, juvenile sunflower sea stars, and mussels (*Musculus*) increased. Many of these changes persist. We suspect that the changes observed are a result of direct effects of oil as well as indirect effects such as predator-prey interactions. However, the interactions among species and the effects of changes on higher trophic levels are poorly understood. As a result, interpretation of the overall ecological effect of the changes to subtidal populations, and assessment of recovery, are limited.
Technical Approach: Three or more experiments will be conducted to examine the interactions among epibenthic species in the shallow subtidal eelgrass community. These experiments will entail the removal of crabs, the removal of *Musculus*, and the removal of starfish from within experimental plots in the shallow subtidal, and the subsequent monitoring of the effects of removal on other species. In addition, we will make quantitative observations of feeding by fish and birds; larvae settlement by *Musculus*, juvenile cod, and juvenile starfish; and gut contents of fish, starfish, and crabs within the experimental plots and at the site in general.

Estimated Duration of Project: One year

Estimated Cost per Year: $90,000

Other Comments: This project will benefit from possible shared logistical costs with other restoration projects being carried out in Prince William Sound. This will be a cooperative effort with Mr. Stephen Jewett of the University of Alaska.

Name, Address, Telephone:

Dr. Thomas A. Dean
Coastal Resources Associates
2270-L Camino Vida Roble
Carlsbad, CA 92009
619/438-0588

ID # 920615297-77

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

/ Checked for Completeness

- / ID stamped/Input completed
- / Name
- / Affiliation
- / Costs

/ Category

Restoration - monitoring

/ Lead Agency

ADF&G

_____ Cooperating Agency(ies)

_____

Ø N Passed initial screening criteria

_____

type ST

_____

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

IDEAS FOR RESTORATION PROJECTS - 1993

92061525B-03

Title of Project:
Injury to salmon eggs and pre-emergent fry in Prince William Sound laboratory verification.

Justification:
Field evidence collected under NRDA project FS2 indicates possible genetic damage resulting from exposure to oil during early developmental life-stages. The observed consequence of this putative genetic damage is increased sterility. This hypothesis is consistent with previous laboratory experiments and observations on herring chromosomes made by NRDA project FS11.

Description of Project:
The proposed project involves 3 separate experiments that will assess the amount of genetic damage in pink salmon caused by exposure to crude oil. The first experiment examines the effects of six levels of intertidal gravel contamination and two durations of exposure on responses to various life history stages, including fertility. Salmon will be exposed while incubating in contaminated gravel, and reared to maturity. The second experiment will determine if fish fed oiled food for 6 weeks experience similar biological responses to those in experiment one. The third experiment determines if there is evidence of differential gamete survival to emergence between ten randomly paired families for five different treatment regimes.

Results from the first study relates the amount of genetic damage and subsequent loss of vigor to the experience of the 1989 brood year in Prince William Sound. The second study develops similar relationships for the fish that emerged, in April 1989, immediately after the oilspill (1988 brood year). The final experiment detects differences between families and assesses the potential for genetic damage among pink salmon on the population level in Prince William Sound.

Estimated Duration of Project:
The total time required for this study is 3.5 years. Experiments 1 and 2 require that fish be raised to maturity, and the progeny be incubated to emergence. Experiment 3 will be completed when the F1 emerge in the early winter of 1992-1993.

Estimated Cost per Year:

	NMFS	ADFG
Year 1:	54.2	86.6
Year 2:	322.1	135.4
Year 3:	200.4	79.4
Year 4:	107.4	57.6

Duplicate with ADF&G project

Name Address and Telephone:
Dr. Stanley Rice 907-789-6020
National Marine Fisheries Service, Alaska Fisheries Center
11305 Glacier Hwy, Juneau, Ak. 99821

ID # 92061525 8-03

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

DAMAGE ASSESSMENT

✓ Lead Agency

ADF&G

✓ Cooperating Agency(ies)

NOAA - NMFS

(Y) N Passed initial screening criteria

type 8 F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

920615258-05

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
✓			1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
✓			3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Document ID Number
92061836

- ☐ A-92 WPWG
- ☑ B-93 WPWG
- ☐ C-RPWG
- ☐ D-PAG
- ☐ E-MISC.

Title of Project:
Kelp regeneration in the upper intertidal

Justification: (Link to Injured Resource or Service)
Lack of kelp regrowth in upper intertidal zone.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

There are two ways to prevent the upper intertidal area from drying out during low tides and assist in the regrowth of the kelp beds and its associated community. One is artificial kelp, i.e., burlap or Engineers Cloth could be anchored at one end and flotation attached to the other. During low tides the artificial kelp should then cover a large area rather than crumble in a small pile. The strips would have to be narrow to keep storm surges from washing the anchors out.

The other technique would be to use divers off a barge to select, move and re-locate rocks of a suitable size which contain living Macrocystis from the lower intertidal zone to the upper intertidal zone. These rocks would have to be large enough to stay in place, yet small enough to be moved, at least by a winch on a small barge. The kelp would also have to be large enough to provide some shade, yet small enough to not break off in the shallower water, higher energy zone.

Estimated Duration of Project: One summer - 1993

Estimated Cost per Year: $300,000.00

Other Comments: Both ideas would have a high risk factor. We would probably want to establish a rope grid on the beach to hold the burlap in place.

Name, Address, Telephone:
Martech USA, Inc.
300 E. 54th Av.
Anchorage, AK 99518
Attn: Gary Lawley

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

JUN 18 REC'D

ANCHORAGE
JUN 16 '92
ALASKA

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Document ID Number
9206183116

- [ ] A-92 WPWG
- [x] B-93 WPWG
- [ ] C-RFWG
- [ ] D-PAG
- [ ] E-MISC.

MARTECH

300 East 54th Avenue
Anchorage, AK 99518
(907) 561-1970

Exxon Valdez Trustee Council
645 G Street
Anchorage, AK 99501

Attn: 1993 Work Plan

ID # 92061836

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

ID stamped/Input completed
Name
Affiliation
Costs

✓ Category Rest. Manip. or Enhancement

✓ Lead Agency ~~DNR~~ ADF&G

✓ Cooperating Agency(ies) USFS.

(Y) N Passed initial screening criteria

type ST

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF FISHERIES REHABILITATION, ENHANCEMENT & DEVELOPMENT (F.R.E.D.)

Limnology Section
34828 Kalifornsky Beach Road, Suite B
Soldotna, AK 99669-3150
Phone (907) 262-9368
Fax (907) 262-4709

To: Joe Sullivan

From: Dana Schmidt
Principal Limnologist
FRED Division, ADF&G
Soldotna, AK

Date: June 2, 1992

Subject: Continuation F/S 27 sockeye overescapement studies

Enclosed is the completed form which I understand must be completed for continuation of damage assessment, despite the fact that this is not a restoration study. I was requested by Dean Hughes to submit a comment through you to provide for a potential augmentation to FS 27 because of findings this spring.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:
F/S 27 (THIS IS NOT A RESTORATION PROJECT; THIS IS A CONTINUATION OF DAMAGE ASSESSMENT)

Sockeye Salmon Overescapement

Justification: Following the closure of commercial fisheries after the EXXON Valdez oil spill, excessive escapement of sockeye salmon into the Kenai and Kodiak systems may have overtaxed the lake rearing or spawning areas creating poor survival and possibly major declines in future sport, subsistence and commercial fisheries. Detailed justification is outlined on page 75 of the April 1992 Draft Work Plan. This is a continuation of existing projects.

Description of Project: Smolt enumeration and fry abundance on important sockeye salmon lakes on Kodiak Island and the Kenai Peninsula are continuing. These include systems that have had overescapement as well as those that have not. In addition, the limnology of the lakes is being studied to determine the relationship of food resources, nutrient status, and physical parameters to failing sockeye salmon production. Detailed methods and project description are contained in page 75 through 82 of the April 1992 Draft Work Plan.

Estimated Duration of Project: Through 1996, started in 1990

Estimated Cost per Year: Current costs are approximately $583K including administration. Future costs depend upon this years findings. No major increases are anticipated. Significant decreases are possible. See comment below.

Other Comments: A proposed expansion to further investigate cause of the Kenai sockeye salmon decline is proposed (47 K). This is primarily for obtaining sophisticated plankton counting equipment for determining vertical distribution of zooplankton throughout the season in selected major Kenai Peninsula glacial lakes that received excessive numbers of spawners or are acting as controls. An attached description of the problem is included.

Name, Address, Telephone:
Dr. Dana Schmidt
Mr. Ken Tarbox
Alaska Department of Fish and Game, Soldotna AK
(907) 262-9368

FS 27 supplemental funding request.

The well publicized decline of the Kenai River sockeye salmon population as indicated by low smolt counts and decreased fall fry abundances in Skilak and Kenai Lakes has prompted more intensive investigation into the causal mechanism. Zooplankton counts in Skilak and Kenai Lakes have not demonstrated major declines unlike other sockeye salmon systems which have received large escapements. This may have occurred because of the glacial nature of these lakes and a copepod population that has only minor components available for predation by sockeye fry in Skilak and Kenai lakes. In the spring 1992 examination of juvenile sockeye by sonar in Skilak Lake, daytime juvenile fish distribution occurred near 40 meters despite light extinction at 15 meters and isothermal conditions in the lake. Depth distribution of zooplankton indicated similar daylight patterns of the zooplankton community with a minor layer near 15 meters. Night measurements indicated the 40 meter layer of zooplankton disappeared but was not measurable in increases at the surface, suggesting sampling problems with surface attenuation, or the zooplankton went below our sampling depth. This depth distribution may provide major clues as to the mechanism of density dependent mortality if food availability is the primary cause. If the zooplankton biomass remains in water temperatures below 4 C and below the visual feeding depth of sockeye, the smaller surface component may be the primary food source and be quite limiting to sockeye fry growth. In order to test this hypothesis, much more extensive vertical distribution data of the zooplankton community would be required. Because of the extensive laboratory analysis required, these data would not be cost effectively attainable by use of traditional sampling methods. Therefore we request a limited project budget expansion to cover purchase of an in situ optical plankton counter. This equipment provides counts and length frequency distribution by accumulating data from an optical cell while the device is towed or hauled vertically through the water column. Additional manpower support to conduct the data collection and data analysis is also requested. The simple form of the glacial lake zooplankton community would probably provide for easy mode analysis of the zooplankton community composition to provide seasonal 3 dimensional distribution of the plankton biomass. Based on these data, we may be able to assemble a realistic model of energy availability for the zooplankton community in Skilak Lake and the control, Tustumena. This may also be applied to other systems if found to be useful. Without such data, the relationship of spawner density to ultimately poor juvenile sockeye salmon production may remain speculative.

Costs Increments

Line 100	2 mm Fishery Biologist I	$10K
Line 400	Supplies, towing hardware, shipping	$2 K
Line 500	Focal Tech. Inc. towable optical plankton counter with depth gage.	$35 K
Total		$47 K

Desired time frame for implementation, September, 1992.

Because the data were not available until the past month, this additional cost could not be anticipated in initial proposals.

State of Alaska
Department of Fish and Game
34828 Kalifonsky Beach Rd.
Suite B
Soldotna, Alaska 99669

SOLDOTNA
JUN 4 '92
ALASKA

Exxon Valdez Oil Spill Restoration Team
645 G Street
Anchorage, AK 99501

JUN 05 REC'D

Document ID Number 92060128
☐ A-92 WPWG
☒ B-93 WPWG
☐ C-RPWG
☐ D-PAG
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COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

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✓ Name
Affiliation
Costs

✓ Category

DAMAGE ASSESMENT F/S 27

✓ Lead Agency

ADF&G

_____ Cooperating Agency(ies)

_____

(Y) N Passed initial screening criteria

_____

type F/S

_____

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
FORMAT FOR IDEAS FOR RESTORATION PROJECTS

TITLE OF PROJECT: Follow-Up Survey of EVOS Impacted Native Communities - Subsistence

JUSTIFICATION: It appears that (1) widespread concerns for safety, relating to the consumption of customary subsistence foods, persist; and (2) certain customary subsistence harvest areas are viewed as requiring further clean-up mitigations.

The need to conduct the follow-up survey is essential in that it will document the magnitude of (1) and (2) above, and therefore provide a relative measure of significance establishing "consequential injury," i.e. loss of human and resource uses.

DESCRIPTION OF PROJECT: The project is viewed as requiring three (3) distinct phases as outlined:

Phase I: Survey of each target community to identify:

a. Discrete customary subsistence harvest locations requiring further clean-up, etc.
b. Listing of subsistence species by harvest location for which safety concerns remain.

Estimated Time Line: 4-6 months.
Estimated Cost: 25-60K

Phase II: Planning/logistics and conducting on-site visits to:

a. *Corroborate oiling
*Estimate degree of impact remaining
*Develop recommendations to mitigate
b. *Initiate and conduct a sampling program to collect target species for analysis
*Send (NOAA?) for analysis

Estimated Time Line: One (1) year
Estimated Cost: 200-500K

Phase III:

a. Initiate and conduct recommended site mitigations, etc.
b. *Review results of analysis regarding toxicity (safe-unsafe) determinations
*For each species/discrete location, identified as unsafe, quantify annual loss (estimated annual harvest) by weight/volume/other, i.e. best estimate acceptable
*Develop "Replacement" schedule showing suggested comparable replacement food(s)/(other) for each customary subsistence harvest location species verified unsafe.
*Planning/execution of distributions.

Estimated Time Line[1]: One (1) year
Estimated Cost: 300-700K

TARGET COMMUNITIES: (Subject to additions/deletions following further review).

Tatitlik	Soldotna	Port Lions
Cordova	Larsen Bay	Ouzinkie
Chenega Bay	Karluk	Kodiak
Tyonek	Seldovia	Valdez
Kenai	Homer	Chignik Lake
English Bay	Old Harbor	Chignik
Port Graham	Akhiok	Chignik Lagoon

[1]The estimated time lines and costs may be subject to considerable adjustment as they are directly related to the completion of Phase I goals/objectives.

Other Comments: We argue, the best way to establish a high confidence level for the safety of subsistence foods in Native communities, is to test the species routinely harvested from customary subsistence harvest locations. The weakness of extrapolating safety conclusions from the testing of a limited number of target species collected from widely dispersed sampling stations, while useful information, is that it has done little to dispel doubts.

Name, Address, Telephone:

Serg Astra
Fishery & Wildlife Biologist
Bureau of Indian Affairs
P.O. Box 25520
Juneau, Alaska 99802-5520
(907) 586-7618

Document ID Number
92061527B 37

- ☐ A-92 WPWG
- ☑ B-93 WPWG
- ☐ C-RPWG
- ☐ D-PAG
- ☐ E-MISC.

ID # 920615273-37

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

ID stamped/Input completed
Name
Affiliation
Costs

✓ Category Post. Management Actions

Lead Agency ADF+G

Cooperating Agency(ies) DOI-FWS

(Y) N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

92061729-11

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Uganik River Fish Weir

Justification: (Link to Injured Resource or Service)

Over escapement during the oil spill resulted in a weir being placed in this system in 1990.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

The goal of this project would be to maintain this weir for at least three additional years (at present the U.S. Fish and Wildlife Service and Alaska Department of Fish and Game are not funded past 1992 for the project).

Continuing this project through the next three years will allow analysis of sockeye and coho returning adults resulting from the 1989 over escapement year.

Estimated Duration of Project: Three years

Estimated Cost per Year: $28,000/year

Other Comments: This proposal addresses Options 2, 3, and 7 in the Exxon Valdez Oil Spill Restoration Framework, Volume I.

Name, Address, Telephone:

Kodiak National Wildlife Refuge
1390 Buskin River Road
Kodiak, Alaska 99615
(907) 487-2600

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

ID # 274

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- Name
- ✓ Affiliation
- ✓ Costs

✓ Category Management Issue

✓ Lead Agency ADF&G

_____ Cooperating Agency(ies)

_____

Y N Passed initial screening criteria

_____

Type F/S

_____

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
		✓	1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
✓			3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

Title of Project: Near Island Fisheries Research Center

Justification:

During the *Exxon Valdez* oil spill many fisheries were closed due to the presence of oil in the water and on the beaches. Although major lethal effects on fish were not documented, chronic and sub-lethal effects are difficult to measure. Development of the next phase of the multi-agency fishery technology and research center on Near Island in Kodiak would enable the user agencies to (1) initiate research projects on the efficacy of restoration practices, (2) the enhancement of fishery resources in the effected areas, such as king crab, sea urchins, and molluscan shellfish, (3) the enhanced utilization of equivalent fishery resources to those in spill area, such as arrowtooth flounder, and (4) to initiate long term research programs to better understand and ameliorate the effects of oil spills on the fisheries of the western Gulf of Alaska. Seven federal and two State agencies, the University of Alaska, School of Fisheries and Ocean Sciences, Kodiak Island Borough, and the City of Kodiak have all participated in the planning for the multi-agency facility.

The seawater system and associated facilities will be designed to enhance research on fish behavior, physiology and perception, marine biology, and aquatic toxicology of normal and stressed fisheries. Stressed conditions could include other human activities, including fish harvesting, in addition to spilled crude oil. In addition the completed multi-agency fishery technology and research facility will provide a variety of analytical testing and monitoring capabilities within Kodiak Island Borough. These capabilities were severely lacking during the oil spill when all samples had to be sent off-island for analysis.

The first phase of the University of Alaska, School of Fisheries and Ocean Sciences, Fishery Industrial Technology Center (FITC) has been completed. It is the first building of the proposed multi-agency fishery technology and research facilities. The FITC Owen Building is being used by the University of Alaska and National Marine Fisheries Service (NMFS) Utilization Research Division personnel. Co-location of these two groups has resulted in efficient use of facilities and encouraged pooling of expertise to pursue efficient use fishery resources to produce diverse, high quality products, and eliminate waste.

Currently the other agencies interested in co-locating are isolated from each other, the public and the fishing community, and occupy out dated and inadequate facilities. The importance of the fisheries in the western Gulf of Alaska to the State and nation are expanding, and the oil spill emphasized the need for more specific information on these fisheries. Many of the fisheries activities in Kodiak are expanding to meet these needs. The multi-agency fishery technology and research facilities will be necessary to meet the agencies needs and the public's need for better access to information and training in a timely manner.

The City of Kodiak has donated the land for fisheries research facilities on Near Island. The City of Kodiak is committed to using its revenue bonding power to fund construction of portions of these facilities to the extent that lease monies are committed by user groups and agencies, if other funding sources are not available. As one of the users of the expanded facilities the National Marine Fisheries Service has been authorized by congress to lease space on Near Island at an annual lease not to exceed $1,000,000 per year.

In order to achieve the purposes of the remedial and compensatory payments, the University of Alaska, in conjunction with NOAA and ADFG, recommends development of expanded multi-agency fishery technology and research facilities on Near Island, Kodiak, Alaska. The phase of this facility which is most critical for restoration, enhancement, enhanced utilization of fishery resources, and better understanding and ameliorating the effects of oil spills in the western Gulf of Alaska will include a gravity fed seawater system, wet and dry marine laboratories and associated systems.

Description of Project:

The combined use of state and federal lease monies with remedial and compensatory payment from the civil settlement to finish construction of a multi-agency fisheries research center on Near Island in Kodiak will help provide the State of Alaska with state-of-the-art capabilities to undertake critical studies on the restoration, enhancement, and enhanced utilization of fishery resources in the western Gulf of Alaska. These facilities will also provide Alaska's fishing industry with research and technical assistance during the rehabilitation of Alaska's vertebrate and invertebrate fisheries resources. The new facilities will be located in conjunction with existing FITC facilities. These facilities will accommodate NOAA/NMFS and other fisheries research and management groups in addition to the FITC. Land for development of these facilities is being held in trust by the City of Kodiak.

Development of these facilities would provide the University of Alaska, State, and Federal agencies resources for evaluating toxicological, physiological, and behavioral effects related to the presence of hydrocarbons.

A principal component of the oil spill related portion of these facilities will be a controlled environment behavior and sensory physiology wet laboratory. This will be the core unit which will be used to investigate physiological and behavioral effects of long term low level exposure to hydrocarbons. Central to this laboratory is a large swimming pool tank which will provide capabilities to assess how organisms perceive and react to stimuli produced by their environment in conjunction with the presence of hydrocarbons. The main support facility for this system is a running seawater system with associated mechanical support and filter beds. Additional support facilities include physiology and toxicology laboratories.

These enhancements to the state/university/federal fisheries research complex on Near Island would enhance research and development activities related to the restoration, enhancement, and economic value of fisheries resources of the oil spill effected areas, especially through better understanding of the behavioral, physiological, and toxicological responses of targeted species. Research in this facility would also lead to the development of better tools to monitor aquatic toxic responses and other physiological changes resulting from oil spills and other anthropogenic activity.

Subject to approval by the Governor, the Alaska Legislature has appropriated $100,000 from the remedial and compensatory payments for the criminal settlement to the University of Alaska for "design and planning of a fishery technology and research facility". The availability of these planning funds will facilitate development of more specific design criteria and cost estimated by the University of Alaska, Office for Facilities Planning and Construction. The following costs are based on general construction parameters from the Owen Building and the proposed sea water system. They assume that major site specific constraints will be addressed as part of a larger phased project.

Estimated Duration of Project: **On-going long term benefits beyond settlement**
Three years in construction phase

Estimated Facilities Cost: **7.5 million total**
3.5 million per year for two years
0.5 million for the third year

Seawater System		$2.0
60 x 80 ft. behavioral and physiology wet laboratory facilities	$1.5	
30 x 50 ft. physiology laboratory	$0.5	
30 x 50 ft. toxicology laboratory	$0.5	
Architecture, engineering and design	$1.0	
Equipment		$1.0
Tanks and associated accessories		$1.0
TOTAL	$7.5	

Document ID Number
9206163 10
☐ A-92 WPWG
☑ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

Name, Address, Telephone:

John S. French, Interim Director
Fishery Industrial Technology Center
University of Alaska Fairbanks
900 Trident Way
Kodiak, AK 99615

Voice: (907) 486-1505
FAX: (907) 486-1540

In addition to the University of Alaska Fairbanks, School of Fisheries and Ocean Sciences, this proposal has been discussed with Dr. W. Aaron, NMFS; Mr. T. Kron, ADFG-FRED; Mr. J. Selby, Mayor KIB; and Mr. G. Bloomquist, City Manager, Kodiak.

Title of Project: Near Island Fisheries Research Center

Justification:

During the *Exxon Valdez* oil spill many fisheries were closed due to the presence of oil in the water and on the beaches. Although major lethal effects on fish were not documented, chronic and sub-lethal effects are difficult to measure. The planning and design funds for the next phase of the multi-agency fishery technology and research would enable the user agencies to (1) initiate research projects on the efficacy of restoration practices, (2) the enhancement of fishery resources in the effected areas, such as king crab, sea urchins, and molluscan shellfish, (3) the enhanced utilization of equivalent fishery resources to those in spill area, such as arrowtooth flounder, and (4) to initiate long term research programs to better understand and ameliorate the effects of oil spills on the fisheries of the western Gulf of Alaska. Seven federal and two State agencies, the University of Alaska, School of Fisheries and Ocean Sciences, Kodiak Island Borough, and the City of Kodiak have all participated in the planning for the multi-agency facility.

The seawater system and associated facilities will be designed to enhance research on fish behavior, physiology and perception, marine biology, and aquatic toxicology of normal and stressed fisheries. Stressed conditions could include other human activities, including fish harvesting, in addition to spilled crude oil. In addition the completed multi-agency fishery technology and research facility will provide a variety of analytical testing and monitoring capabilities within Kodiak Island Borough. These capabilities were severely lacking during the oil spill when all samples had to be sent off-island for analysis.

The first Phase of the University of Alaska, School of Fisheries and Ocean Sciences, Fishery Industrial Technology Center (FITC) has been completed. It is the first building of the proposed multi-agency fishery technology and research facilities. The FITC Owen Building is being used by the University of Alaska and National Marine Fisheries Service Utilization Research Division personnel. Co-location of these two groups has resulted in efficient use of facilities and encouraged pooling of expertise to pursue efficient use fishery resources to produce diverse, high quality products, and eliminate waste.

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of the expanded facilities the National Marine Fisheries Service has been authorized by congress to lease space on Near Island at an annual lease not to exceed $1,000,000 per year.

In order to achieve the purposes of the remedial and compensatory payments, the University of Alaska, in conjunction with NOAA and ADFG, recommends development of expanded multi-agency fishery technology and research facilities on Near Island, Kodiak, Alaska. The next phase of this facility which is most critical for restoration, enhancement, enhanced utilization of fishery resources, and better understanding and ameliorating the effects of oil spills in the western Gulf of Alaska will include a gravity fed seawater system, wet and dry marine laboratories and associated systems.

Description of Project:

The combined use of state and federal lease monies with remedial and compensatory payment from the civil settlement to finish construction of a multi-agency fisheries research center on Near Island in Kodiak will help provide the State of Alaska with state-of-the-art capabilities to undertake critical studies on the restoration, enhancement, and enhanced utilization of fishery resources in the western Gulf of Alaska. These facilities will also provide Alaska's fishing industry with research and technical assistance during the rehabilitation of Alaska's vertebrate and invertebrate fisheries resources. The new facilities will be located in conjunction with existing FITC facilities. These facilities will accommodate NOAA/NMFS and other fisheries research and management groups in addition to the University of Alaska Fairbanks, Fishery Industrial Technology Center. Land for development of these facilities is being held in trust by the City of Kodiak. Development of these facilities would provide the University of Alaska, State, and Federal agencies resources for evaluating toxicological, physiological, and behavioral effects related to the presence of hydrocarbons.

A principal component of the oil spill related portion of these facilities will be a controlled environment behavior and sensory physiology wet laboratory. This will be the core unit which will be used to investigate physiological and behavioral effects of long term low level exposure to hydrocarbons. Central to this laboratory is a large swimming pool tank which will provide capabilities to assess how organisms perceive and react to stimuli produced by their environment in conjunction with the presence of hydrocarbons. The main support facility for this system is a running seawater system with associated mechanical support and filter beds. Additional support facilities include physiology and toxicology laboratories.

These enhancements to the state/university/federal fisheries research complex on Near Island would enhance research and development activities related to the restoration, enhancement, and economic value of fisheries resources of the oil spill effected areas, especially through better understanding of the behavioral, physiological, and toxicological responses of targeted species. Research in this facility would also lead to the development of better tools to monitor aquatic toxic responses and other physiological changes resulting from oil spills and other anthropogenic activity.

Estimated Duration of Project: **On-going long term benefits beyond settlement**
Three years in construction phase

Estimated Facilities Cost: **7.5 million total**
3.5 million per year for two years
0.5 million for the third year

Seawater System	$2.0
60 x 80 ft. behavioral and physiology wet laboratory facilities	$1.5
30 x 50 ft. physiology laboratory	$0.5
30 x 50 ft. toxicology laboratory	$0.5
Architecture, engineering and design	$1.0
Equipment	$1.0
Tanks and associated accessories	$1.0
TOTAL	$7.5

Comments:

This proposal addresses Options 2, 14, 27, 30, 31, and 34 in the Exxon Valdez Oil Spill Restoration Framework, Volume I.

Name, Address, Telephone:

John S. French, Interim Director
Fishery Industrial Technology Center
University of Alaska Fairbanks
900 Trident Way
Kodiak, AK 99615

Voice: (907) 486-1505
FAX: (907) 486-1540

ID # 9206152 79-28

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

ID stamped/Input completed
Name
Affiliation
Costs

✓ Category Tech. Support
Restoration Monitoring

Lead Agency
AOF&G

Cooperating Agency(ies)
NOAA

(Y) N Passed initial screening criteria

Type: Services

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEA FOR RESTORATION PROJECTS

Title of Project: Coastal Habitat Comprehensive Intertidal Monitoring Program

Justification:
The Coastal Habitat study showed damage to the intertidal community in all three oil-spill regions: Prince William Sound, Kenai Peninsula, Kodiak/Alaska Peninsula. The impacts by tidal height and by species were different in the three regions. In 1991, some species showed signs of the recovery process while others continued to decline or showed no sign of recovery.

Description of Project:
Goals and Objectives: The goal of the study is to conduct a comprehensive monitoring program of intertidal communities in the area impacted by the EVOS. To be comprehensive, the study will include oiled and matched control sites (already established), from which we have a valuable historical record of post-spill data, in all three regions impacted by the oil spill, and a variety of habitats (e.g. sheltered rocky, coarse textured). Within these sites, we will focus on the recruitment and population dynamics of key species as determined by their role in the community (indicator species, spatial dominants, annual vs perennial algae, grazers, predators).

Location:
The study would be conducted in all three oil spill regions or could be conducted in one or two regions per year.

Rationale: See Justification and Goals. The Coastal Habitat sites were not visited in 1992. A selected subset of matched oiled and control sites should be monitored to determine the extent to which recovery is occurring, or not occurring, among major intertidal species. The greater the period between visits to quantify recovery or continued impacts, the more difficult it will be to relate the findings to the oil spill and to distinguish between oil spill impacts and natural events.

Approach: A subset of matched sites in sheltered rocky and coarse textured habitats will be studied. We will utilize a repeated measures design for floral and faunal censuses in existing permanent quadrats to track recovery. Key organisms will be identified and counted in the field and the data recorded on-site. To analyze interannual recruitment variability, supplemental quadrats will be cleared each year (sheltered rocky only).

Estimated Duration of Project: 3 years

Estimated Cost per Year: $500,000 per region

Other Comments: Dr. Mike Stekoll will participate in this project.

Name, Address, Telephone:

Dr. Ray Highsmith
Institute of Marine Science
University of Alaska Fairbanks
Fairbanks, AK 99775-1080

ID # 920610228-02

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

DAMAGE ASSESSMENT

✓ Lead Agency

ADF&G

✓ Cooperating Agency(ies)

USFS

(Y) N Passed initial screening criteria

Type: Coastal Hab.

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

Coastal Resources Associates
2270 Camino Vida Roble, Suite L
Carlsbad, CA 92009
(619) 438-0588

9 June 1992

Dr. Dave Gibbons
Exxon Valdez Oil Spill Restoration Team
645 "G" Street
Anchorage, AK 99501

Dear Dr. Gibbons:

Enclosed are several ideas for restoration projects to be conducted in 1993. Thank you for the opportunity to present these.

Sincerely,

Thomas A. Dean, Ph.D.

cc: Mr. Mark Fraker
Dr. Art Weiner

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project: Quantification of Intertidal Algal Recovery Using Multispectral Digital Remote Sensing

Justification: (Link to Injured Resource or Service)
Intertidal algal populations were severely damaged by the oil spill and clean-up activities. *Fucus* populations in high intertidal habitats have still not recovered in many regions and are showing slow recruitment rates in these areas.

Description of Project: (e.g. goal(s), objectives, location, rationale technical approach)
Goals: Identify intertidal areas where algal populations have not recovered and the substrate remains as bare rock.
Objective: Utilize low cost airborne multispectral digital instrumentation to quantify the extent and location of intertidal habitat where algal populations have not repopulated following the damage caused by the oil spill and subsequent cleanup activity.
Location: Remote sensing will be carried out at protected rocky habitats throughout Prince William Sound. Experimental sites used for restoration studies in Herring Bay will be used for ground truthing these multispectral video images.
Rationale: Damage assessment and restoration studies in Herring Bay have shown that *Fucus* populations have suffered substantial loses from oiling and cleaning that produced large areas of barren substrate. *Fucus* populations are recovering in low and mid-intertidal regions, but recovery has been slow in the upper intertidal. Recovery has been especially slow in south-facing protected rocky habitats. During the summer months these habitats are constantly exposed during daylight hours and suffer heating and desiccation effects on warm, sunny days. During winter the upper intertidal is exposed to freezing and icing conditions. One site we have been studying in Herring Bay has no *Fucus* plants in the upper 1 meter of the intertidal zone. We propose to investigate the extent of this type of damage at oiled sites throughout Prince William Sound. Studies with a CASI (Compact Airborne Spectrographic Imager) scanner conducted in Herring Bay in 1990 showed that the percentage of intertidal substrate covered with algae could be readily quantified using multispectral remote sensing techniques. New types of multispectral video imaging systems such as the ADAR System 5000 from Positive Systems offer a lower cost method for collecting these data.
Technical Approach: Multispectral video images will be collected from protected rocky habitats throughout Prince William Sound. The video instrument will have four spectral bands; near-infrared, red, green, and blue spectral bands; which have been shown to provide the best detection of *Fucus*. We will use the Alaska Department of Natural Resources (ADNR) ARC/INFO GIS database to identify oiled habitats and suitable control shorelines. Video imagery will be obtained from both oiled and unoiled shoreline types to assess relative cover of algal populations. We will also stratify these shorelines into aspect classes to see if south-facing beaches throughout the Sound are experiencing the slow repopulation we have observed in Herring Bay. The experimental plots we have been following in Herring Bay for three years will be use as ground truth sites to verify the multispectral video data. The airborne video sensor will be linked with GPS navigation to identify the location of each image. During image acquisition, the GPS coordinates for each image will be recorded in a image header file. Data from this study will be available to integrate into the ARC/INFO database for use in monitoring restoration of injured resources.

Estimated Duration of Project: One year

Estimated Cost per Year: $195,000

Other Comments: This project will benefit from shared logistical costs with the Coastal Habitat restoration experiments being carried out in Herring Bay. This will be a cooperative effort with Michael Stekoll of the University of Alaska and Kimbal Sundberg of the Alaska Department of Fish and Game.

Name, Address, Telephone:

Dr. Larry Deysher
Coastal Resources Associates
2270-L Camino Vida Roble
Carlsbad, CA 92009
619/438-0588

236-03

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

IDEAS FOR RESTORATION PROJECTS

Title of Project: Experimental Evaluation of the Oiled/Control Paired Design Used in Assessing Damages and Recovery of Intertidal and Subtidal Communities.

Justification: (Link to Injured Resource or Service)
Damages to a variety of plants and animals in the intertidal and subtidal communities of Prince William Sound have been observed as the result of the EXXON VALDEZ oil spill. Some of the damaged populations are apparently recovering, while others are not.

Description of Project: (e.g. goal(s), objectives, location, rationale technical approach)
Goals: Evaluate the paired oil/control sampling design used to assess damages and recovery from the EXXON VALDEZ oil spill. Also refine the criteria used for selection of an experimental design and sampling sites to be used in future spill monitoring.
Objective: Test the assumption that oiled and control sites selected for study in coastal habitat damage assessment and resource recovery studies were similar except with respect to oiling. Define criteria that may lead to selection of oiled and control sites in future monitoring.
Location: Studies will be conducted in areas of Prince William Sound not impacted by the EXXON VALDEZ oil spill.
Rationale: The quantitative assessment of impacts of damages to biological resources in coastal habitats, as well as recovery from these damages, relies on comparisons between selected oiled and control sites that were sampled after the EXXON VALDEZ oil spill. The assessment of impacts based on this design rests on the assumption that pairs of oiled and control sites were similar except for the presence of oil. Without independent evidence in support of this assumption, there will always be the suspicion that differences among oiled and control sites may have resulted from some inherent differences among sites rather than from oiling. A "slow recovery" could also be interpreted as a result of inherent differences unrelated to oiling.
Technical Approach: An oil spill simulation model will be used to identify set of hypothetically "oiled" sites within Prince William Sound. A subset of the "oiled" sites will be selected at random, and these sites will be visited. Paired "control" sites will be selected that match the "oiled" sites as closely as possible . The selection of the "control" sites will be based on criteria similar to those used in the selection of control sites in the Coastal Habitat Damage Assessment Studies. We will then sample and determine the population density of a variety of key indicator species at both "oiled" and "control" sites. These will include both intertidal and subtidal species that were assessed as being severely damaged by the EXXON VALDEZ oil spill. In addition, a number of other selected physical variables (eg. temperature, salinity, depth, slope, aspect) will be measured at each site. Possible differences between "oiled" and "control" sites will be determined using statistical methods comparable to those used by the Coastal Habitat damage assessment program. We will attempt to explain possible differences among sites based on physical differences among sites.

Estimated Duration of Project: One to three years

Estimated Cost per Year: $150,000

Other Comments: Logistical costs for this project could be reduced by combining efforts with other Coastal Habitat sampling programs.

Name, Address, Telephone:

Dr. Thomas A. Dean
Coastal Resources Associates
2270-L Camino Vida Roble
Carlsbad, CA 92009
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Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

236-04

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

IDEAS FOR RESTORATION PROJECTS

Title of Project: Experimental Studies of Interactions Between Subtidal Epifaunal Invertebrates.

Justification: (Link to Injured Resource or Service)
Changes in the population structure of subtidal epibenthic invertebrates occurred as a result of the EXXON VALDEZ oil spill. Many of these changes persist, and their impact on other trophic levels and potential for recovery are difficult to predict.

Description of Project: (e.g. goal(s), objectives, location, rationale technical approach)
Goals: Determine ecological interactions among key species in the shallow subtidal community in order to assess direct and indirect impacts of the oil on these and associated species, and to predict the rate and course of recovery.
Objective: Conduct experiments to examine interactions among eelgrass, mussels (*Musculus*), helmet crabs, and starfish in the shallow subtidal community. Determine feeding relationships among species, determine the impact of decreased crab and leather star abundance on the population density of other species, and determine the importance of increased *Musculus* abundance on other species.
Location: Experiments will be carried out at one site (either Herring Bay or Sleepy Bay) within the eelgrass habitat in Prince William Sound.
Rationale: Population densities of several species (eg. eelgrass, helmet crabs, and leather stars) declined as the result of oiling, while others (juvenile Pacific cod, juvenile sunflower sea stars, and mussels (*Musculus*) increased. Many of these changes persist. We suspect that the changes observed are a result of direct effects of oil as well as indirect effects such as predator-prey interactions. However, the interactions among species and the effects of changes on higher trophic levels are poorly understood. As a result, interpretation of the overall ecological effect of the changes to subtidal populations, and assessment of recovery, are limited.
Technical Approach: Three or more experiments will be conducted to examine the interactions among epibenthic species in the shallow subtidal eelgrass community. These experiments will entail the removal of crabs, the removal of *Musculus*, and the removal of starfish from within experimental plots in the shallow subtidal, and the subsequent monitoring of the effects of removal on other species. In addition, we will make quantitative observations of feeding by fish and birds; larvae settlement by *Musculus*, juvenile cod, and juvenile starfish; and gut contents of fish, starfish, and crabs within the experimental plots and at the site in general.

Estimated Duration of Project: One year

Estimated Cost per Year: $90,000

Other Comments: This project will benefit from possible shared logistical costs with other restoration projects being carried out in Prince William Sound. This will be a cooperative effort with Mr. Stephen Jewett of the University of Alaska.

Name, Address, Telephone:

Dr. Thomas A. Dean
Coastal Resources Associates
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Carlsbad, CA 92009
619/438-0588

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JUN 12 REC'D

Coastal Resources Associates
2270 Camino Vida Roble, Suite L
Carlsbad, CA 92009
(619) 438-0588

Document ID Number
920612236
- [ ] A-92 WPWG
- [x] B-93 WPWG
- [ ] C-RPWG
- [ ] D-PAG
- [ ] E-MISC.

FAX TRANSMITTAL COVER

Deliver To:	Dr. Dave Gibbons
Contact Name:	
Fax Number:	907/276-7178
Sender:	Larry Deysher
Description/Note:	Dave, Here are two proposals I feel are important for the restoration process. Larry

Number of Pages (not including cover):	2
Date Sent:	12 June 92
Time Sent:	1330

ID # 92061236-1,3,4

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration ~~Recovery~~ Monitoring

✓ Lead Agency

~~ADF&G~~ USDA

_____ Cooperating Agency(ies)

N/A

(Y) N Passed initial screening criteria

type ST

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

297
76

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project: Quantification of Intertidal Algal Recovery Using Multispectral Digital Remote Sensing.

Justification: (Link to Injured Resource or Service)
Intertidal algal populations were severely damaged by the oil spill and clean-up activities. *Fucus* populations in high intertidal habitats have still not recovered in many regions and are showing slow recruitment rates in these areas.

Description of Project: (e.g. goal(s), objectives, location, rationale technical approach)
Goals: Identify intertidal areas where algal populations have not recovered and the substrate remains as bare rock.
Objective: Utilize low cost airborne multispectral digital instrumentation to quantify the extent and location of intertidal habitat where algal populations have not repopulated following the damage caused by the oil spill and subsequent cleanup activity.
Location: Remote sensing will be carried out at protected rocky habitats throughout Prince William Sound. Experimental sites used for restoration studies in Herring Bay will be used for ground truthing these multispectral video images.
Rationale: Damage assessment and restoration studies in Herring Bay have shown that *Fucus* populations have suffered substantial loses from oiling and cleaning that produced large areas of barren substrate. *Fucus* populations are recovering in low and mid-intertidal regions, but recovery has been slow in the upper intertidal. Recovery has been especially slow in south-facing protected rocky habitats. During the summer months these habitats are constantly exposed during daylight hours and suffer heating and desiccation effects on warm, sunny days. During winter the upper intertidal is exposed to freezing and icing conditions. One site we have been studying in Herring Bay has no *Fucus* plants in the upper 1 meter of the intertidal zone. We propose to investigate the extent of this type of damage at oiled sites throughout Prince William Sound. Studies with a CASI (Compact Airborne Spectrographic Imager) scanner conducted in Herring Bay in 1990 showed that the percentage of intertidal substrate covered with algae could be readily quantified using multispectral remote sensing techniques. New types of multispectral video imaging systems such as the ADAR System 5000 from Positive Systems offer a lower cost method for collecting these data.
Technical Approach: Multispectral video images will be collected from protected rocky habitats throughout Prince William Sound. The video instrument will have four spectral bands; near-infrared, red, green, and blue spectral bands; which have been shown to provide the best detection of *Fucus*. We will use the Alaska Department of Natural Resources (ADNR) ARC/INFO GIS database to identify oiled habitats and suitable control shorelines. Video imagery will be obtained from both oiled and unoiled shoreline types to assess relative cover of algal populations. We will also stratify these shorelines into aspect classes to see if south-facing beaches throughout the Sound are experiencing the slow repopulation we have observed in Herring Bay. The experimental plots we have been following in Herring Bay for three years will be use as ground truth sites to verify the multispectral video data. The airborne video sensor will be linked with GPS navigation to identify the location of each image. During image acquisition, the GPS coordinates for each image will be recorded in a image header file. Data from this study will be available to integrate into the ARC/INFO database for use in monitoring restoration of injured resources.

Estimated Duration of Project: One year

Estimated Cost per Year: $195,000

Other Comments: This project will benefit from shared logistical costs with the Coastal Habitat restoration experiments being carried out in Herring Bay. This will be a cooperative effort with Michael Stekoll of the University of Alaska and Kimbal Sundberg of the Alaska Department of Fish and Game.

Name, Address, Telephone:

Dr. Larry Deysher
Coastal Resources Associates
2270-L Camino Vida Roble
Carlsbad, CA 92009
619/438-0588

ID #920615297

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration monitoring

✓ Lead Agency

ADF&G

✓ Cooperating Agency(ies)

USFS

(Y) N Passed initial screening criteria

type ST

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

920615249
- 01
- 02
- 03
- 04

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project: ~~Enhanced~~ four Sport fishing Projects

Justification: (Link to Injured Resource or Service)

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

01) Enhanced management for Cutthroat Trout and Dolly Varden in PWS

2) Cutthroat and Dolly Varden Hatchery

3) Enhance and restore sport fishing in PWS to offset economic effects of spill on community, recreation, tourism.

4) Add a position for sport fish biologist in Cordova to handle anticipated problems with sport fish affected by spill.

Estimated Duration of Project: _____

Estimated Cost per Year: _____

Other Comments:

Name, Address, Telephone:

David A. Arruda
PO Box 1768
Cordova Fly Fishers
Cordova, AK 99574

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

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PLACE
STAMP
HERE

Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

ID # 92060105

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Land Acquisition

Justification: (Link to Injured Resource or Service)

Obtain equivalent resources to replace damage resources

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

① Land exchange (state with Kodiak Borough)

② Acquisition at recreational sites

③ Public Education and training for Park Rangers

Estimated Duration of Project: in excess of one year

Estimated Cost per Year: only partial estimate provided

Other Comments:

Name, Address, Telephone:

Roger Blackett, Chairman
Kodiak State Parks Citizens Advisory Board
S.R. 3800
Kodiak, AK 99615
907 486 6339

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

_____ fold here _____

PLACE
STAMP
HERE

Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR PUBLIC IDEAS FOR RESTORATION PROJECTS

Title of Project: Cutthroat Trout & Dolly Varden Hatchery

Justification: Restoration of stream stocks to levels prior to the oil spill. Information has shown a high mortality rate and slower growth for Cutthroat trout & Dolly Varden in oiled areas. Recreational fishing has been curtailed by emergency closures. If this management practice do not work we must have in place a source to replenish the lost stocks.

Description of Project: Construction of a hatchery building 50' X 40'and outside raceways, to house a maximum of 1 million trout smolt. This facility well be constructed in the Cordova area.

Estimated Duration of Project: Construction 2 Years
Project Duration 20 Years

Estimated Cost per Year: Construction Cost $800,000. per year
Annul cost $150,000. per year.

Cordova Fly-Fishers
David A Arruda. President
P.O.Box 1768
Cordova, AK. 99574

(907) 424-5536

Because the Oil Spill Restoration is a public process, your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

ID # 920615249-02

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration - Enhancement

✓ Lead Agency

ADF&G

_____ Cooperating Agency(ies)

_____

(Y) N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR PUBLIC IDEAS FOR RESTORATION PROJECTS

Title of Project: Shelter Cove, Cordova. Restoration Project.

Justification: Enhance and restoration of sport fishing in Prince William Sound (PWS) and to offset the economic effects of the spill on the community by enhancing the tourist & recreational fishing industry

Description of Project: Construct fishing piers, campground, rest rooms, fish cleaning stations, and handicap access. Funding to continue the releasing of Chinook and Coho Salmon.

Estimated Duration of Project: 2 Years for construction
5 Years of funding fish release

Estimated Cost per Year: Construction cost $750,000. per year
Fish release cost $50,000. per year

Cordova Fly-Fishers
David A Arruda. President
P.O.Box 1768
Cordova, AK. 99574

(907) 424-5536

Because the Oil Spill Restoration is a public process, your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

ID # 9206152 49-03

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- ✓ Name
- ✓ Affiliation
- ✓ Costs

✓ Category

Restoration - enhancement

✓ Lead Agency

ADF&G

Cooperating Agency(ies)

(Y) N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

29748

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR PUBLIC IDEAS FOR RESTORATION PROJECTS

duplicates

Title of Project: Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service) Significant over-escapement of sockeye salmon in the Kenai River, a direct result of the Exxon Valdez oil spill, has led to substantially reduced smolt out-migration. Based on this information, the Department of Fish and Game expects fishing opportunities for sockeye salmon in the Kenai River system to be severely curtailed, or closed altogether during 1993-1995 and possibly well beyond.

Average sockeye salmon sport harvest from the Kenai River during the past five years (1987-1991) has been approximately 175,000 fish. The loss of a major portion of this harvest will displace a significant number of sport fishermen and have substantial negative economic impact. Funding of a water pipeline for the Fort Richardson Hatchery will provide alternative sport fishing opportunities during the years the Kenai fishery is most severely impacted and help offset this loss.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach) A water delivery system would be constructed to connect the Municipal Water and Power Plant complex to the hatchery. This system would consist of two pipelines; one connected directly from the Municipal Water Plant to the hatchery providing unheated water while the second would be routed through the Sullivan Power Plant to provide heated water necessary to accelerate fish growth. Dechlorination would be provided and modifications necessary to distribute this new source of water in the hatchery would be made.

Estimated Duration of Project: Construction would require one (1) year

Estimated Cost per Year: Construction cost is estimated at $3,500,000

Other Comments: F. Robert Bell and Associates, and Anchorage engineering firm, performed an engineering analysis in 1991 and found this project to be technically feasible. The Anchorage Economic Development Corporation (AEDC) evaluated the economic impact of this proposal and determined these improvements would have a benefit to cost ratio of 2.8 to 1 and would contribute an estimated $1.56 million annually in personal income. This equates to 54 full-time jobs.

Name, Address, Telephone

Gary Wall
Fort Richardson Hatchery
Fort Richardson AK 99505-0337
(907) 428-1348

Because the Oil Spill Restoration is a public process, your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29749

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Document ID Number
920615297
- ☐ A-92 WPWG
- ☑ B-93 WPWG
- ☐ C-RPWG
- ☐ D-PAG
- ☐ E-MISC.

Title of Project:
Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)
Provide alternative sport fishing opportunities to offset losses on Kenai River.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)
Construct a pipeline to connect the Municipal water system to the hatchery. This will permit an immediate doubling of fish production. These additional fish would then be used to provide alternative sport fishing opportunities to replace the losses on the Kenai River.

Estimated Duration of Project: One year.

Estimated Cost per Year: $3.4 Million

Other Comments: An engineering and economic analysis of this project has been completed. It is both technically feasible and economically sound. This project will improve the efficiency of the hatchery, reduce cost per fish, and the increased production will contribute over $1.5 million annually to the local economy. This is the equivalent of 54 new full time jobs.

Name, Address, Telephone:
Michael J. Fallon
9820 SAAYA CIRCLE
EAGLE RIVER, AK. 99577

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29750

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

Construct a pipeline to connect the Municipal water system to the hatchery. This will permit an immediate doubling of fish production. These additional fish would then be used to provide alternative sport fishing opportunities to replace the losses on the Kenai River.

Estimated Duration of Project: One year.

Estimated Cost per Year: $3.4 Million

Other Comments: An engineering and economic analysis of this project has been completed. It is both technically feasible and economically sound. This project will improve the efficiency of the hatchery, reduce cost per fish, and the increased production will contribute over $1.5 million annually to the local economy. This is the equivalent of 54 new full time jobs.

Name, Address, Telephone:

Jim Bowron
P.O. Box 221954
Anchorage AK 99502
273-6600

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29751

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Document ID Number 920615297
- [ ] A-92 WPWG
- [x] B-93 WPWG
- [ ] C-RPWG
- [ ] D-PAG
- [ ] E-MISC.

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

Construct a pipeline to connect the Municipal water system to the hatchery. This will permit an immediate doubling of fish production. These additional fish would then be used to provide alternative sport fishing opportunities to replace the losses on the Kenai River.

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Name, Address, Telephone:

Ronald F. Kreps Jr.
17911 MEADOW CREEK
EAGLE RIVER, AK 99577
694-9544

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29752

Document ID Number
920615297
☐ A-92 WPWG
☑ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:
Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)
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Name, Address, Telephone:
Carol A. Kruspveld
17911 Meadow Crk
Eagle River, AK 99577
694-8514

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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29753

Document ID Number
920615297
☐ A-92 WPWG
☑ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River.

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Name, Address, Telephone:

George F. Gates
3637 W. 100
Anch AK 99515
561-1656

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29754

Document ID Number 920615297
- ☐ A-92 WPWG
- ☑ B-93 WPWG
- ☐ C-RPWG
- ☐ D-PAG
- ☐ E-MISC.

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

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Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

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Name, Address, Telephone:

D. Bailey-Davis
10024 Wren Lane
Eagle River, AK. 99577
907-563-4091

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

29755

Document ID Number
920615297
☐ A-92 WPWG
☑ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

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Name, Address, Telephone:

Bonnie Heffentrager
6224 Eastwood Ct.
Anchorage, AK 99504
(907) 337-5648

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

29756

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Document ID Number 92061597
- ☐ A-92 WPWG
- ☑ B-93 WPWG
- ☐ C-RPWG
- ☐ D-PAG
- ☐ E-MISC.

Title of Project:
Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)
Provide alternative sport fishing opportunities to offset losses on Kenai River.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)
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Name, Address, Telephone:
Madge Gorsuch
P.O. Box 873837
Wasilla, AK 99687
Lot 4 Blk 4 Rocky Big Lake Subd
373-6414

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29757

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Document ID Number
920615297
☐ A-92 WPWG
☑ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

Title of Project:
Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)
Provide alternative sport fishing opportunities to offset losses on Kenai River

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Name, Address, Telephone:
Fred Joseph Russo
1505 W. 35th Ave
Anchorage, Alaska
99503
274-4149 or 373-6414

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

29758

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

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Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

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Name, Address, Telephone:

Hope Mooney
7401 East 6th #7
(907) 333-5659

Hope Mooney

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

29759

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Document ID Number
92061529?

- ☐ A-92 WPWG
- ☑ B-93 WPWG
- ☐ C-RFWG
- ☐ D-PAG
- ☐ E-MISC.

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

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Name, Address, Telephone:

Doreen Donald
4010 Kingston Dr
Anchorage, Ak 99502
337-4655

Donald

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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

29760

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River

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Name, Address, Telephone:

Cheryl A. Gross
7505 Glen Hwy #116
Anchorage, AK 99504
338-2395

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29761

Document ID Number 92061S297
- [ ] A-92 WPWG
- [x] B-93 WPWG
- [ ] C-RPWG
- [ ] D-PAG
- [ ] E-MISC.

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River

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Name, Address, Telephone:

SANDRA NAULT
P.O. BOX 1603
PALMER, AK 99645
(907) 745-0629

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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

29762

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River.

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Name, Address, Telephone:

Turnagain Chiropractic Office
DR. EDWARD L. BARBER, D.C.
1317 W. Northern Lts. Blvd.
Anchorage, Alaska 99503
907-276-4402

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29763

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai Rive

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Name, Address, Telephone:

Susan Barber
1317 W. Northern Lights Blvd.
Anchorage, AK 99508
(907) 276-4402

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29764

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

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Name, Address, Telephone:

TERRON BLEVINS
1102 E 11th Apt 15
ANC AK 99501
274-4709

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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29765

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Document ID Number
920615297
☐ A-92 WPWG
☒ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

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Name, Address, Telephone:

Dale E McConnel
10421 Constitution
Anchorage AK 99515

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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29766

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

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Name, Address, Telephone:

Dorothy M. Hughes
3716 W 42nd Ave
Anchorage, Ak. 99517
248-5503

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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL 29767

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

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Name, Address, Telephone:

Katerina M. Ehret
POBox 5-378
Ft. Richardson, AK 99505
907-428-0722

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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

Construct a pipeline to connect the Municipal water system to the hatchery. This will permit an immediate doubling of fish production. These additional fish would then be used to provide alternative sport fishing opportunities to replace the losses on the Kenai River.

Document ID Number
920605131
☐ A-92 WPWG
☒ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

Estimated Duration of Project: One year.

Estimated Cost per Year: $3.4 Million

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Name, Address, Telephone:

Philip Ohlinger
17928 Meadow Creek Dr.
Eagle River, AK. 99577

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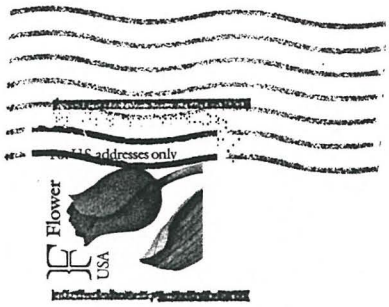
Oblinger
17928 meadow Creek Dr.
Eagle River, AK. 99577



Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

Document ID Number

- ☐ A-92 WPWG
- ☑ B-93 WPWG
- ☐ C-RPWG
- ☐ D-PAG
- ☐ E-MISC.

JUN 05 REC'D

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

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Document ID Number
920605132

- ☐ A-92 WPWG
- ☐ B-93 WPWG
- ☐ C-RPWG
- ☐ D-PAG
- ☐ E-MISC.

Estimated Duration of Project: One year.

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Name, Address, Telephone:

John Unterberg
HC04 Box 9026-C
Palmer, AK 99645

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J. Unterberg
HC04 Box 9086-C
Palmer, AK
99645

ANCHORAGE, AK 995
PM
4 JUN
1992

FOR THE RIDE OF A LIFETIME— COLLECT STAMPS

Flowers
USA

Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

Document ID Number
920605132
- [ ] A-92 WPWG
- [ ] B-93 WPWG
- [x] C-RPWG
- [ ] D-PAG
- [ ] E-MISC.

JUN 05 REC'D

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

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☐ A-92 WPWG
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Name, Address, Telephone:

Katy Whitmore
14932 E St Lake Ridge
Eagle River AK
99577
696-3645

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fold here

Katy Whitmore
14932 E St Lakeridge
Eagle River AK
99577

ANCHORAGE, AK
PM
4 JUN
1992
995

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USA

Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

Document ID Number
920605133
- [ ] A-92 WPWG
- [x] B-93 WPWG
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JUN 05 REC'D

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

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Justification: (Link to Injured Resource or Service)

Provide alternative sport fishing opportunities to offset losses on Kenai River.

Description of Project: (e.g. goal(s), objectives, location, rationale, and technical approach)

Construct a pipeline to connect the Municipal water system to the hatchery. This will permit an immediate doubling of fish production. These additional fish would then be used to provide alternative sport fishing opportunities to replace the losses on the Kenai River.

Document ID Number
920605134
☐ A-92 WPWG
☐ B-93 WPWG
☐ C-RFWG
☐ D-PAG
☐ E-MISC.

Estimated Duration of Project: One year.

Estimated Cost per Year: $3.4 Million

Other Comments: An engineering and economic analysis of this project has been completed. It is both technically feasible and economically sound. This project will improve the efficiency of the hatchery, reduce cost per fish, and the increased production will contribute over $1.5 million annually to the local economy. This is the equivalent of 54 new full time jobs.

Name, Address, Telephone:

Irvin Brock
PO Box 5267
Ft. Richardson Ak 99505
428-0282

Oil spill restoration is a public process. Your ideas and suggestions will not be proprietary, and you will not be given any exclusive right or privilege to them.

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Irvin Brock
PO Box 5267
Ft. Richardson Ak 99505

ANCHORAGE, AK 995
PM
4 JUN
1992

FOR THE RIDE OF A LIFETIME— COLLECT STAMPS
For U.S. addresses only
Flowers
USA

Exxon Valdez Trustee Council
645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

Document ID Number
920605134
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- [x] B-93 WPWG
- [ ] C-RPWG
- [ ] D-PAG
- [ ] E-MISC.

JUN 05 REC'D

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

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Name, Address, Telephone:

Loren M. Thomas
HC-03 Box 9364-Y
Palmer, AK 99645

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Loren M. Thomas
HC-03 Box 8364-Y
Palmer, AK 99645

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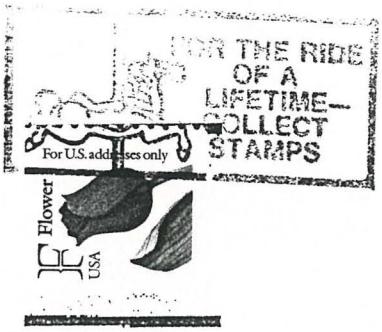
4 JUN
1992



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645 G St.
Anchorage, Alaska 99501

Attn: 1993 Work Plan

920608204

☐ A-92 WPWG
☑ B-93 WPWG
☐ C-RPWG
☐ D-PAG
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EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

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Name, Address, Telephone:

Robert Fuller
Ft. Rich. Hatchery
POB 5156
Ft. Rich. AK 99505

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Robert Lusk
Ft. Rich Hatchery
POB 5156
Ft. Rich. 99505

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Attn: 1993 Work Plan

Document ID Number
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- [ ] C-RPWG
- [ ] D-PAG
- [ ] E-MISC.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Document ID Number
920608202
☐ A-92 WPWG
☑ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

Title of Project:

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Justification: (Link to Injured Resource or Service)

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Name, Address, Telephone:

Carmen A Olito
P.O. Box 111486
Anchorage, AK 99511
349-7076 (wcs)
428-1347 (da)

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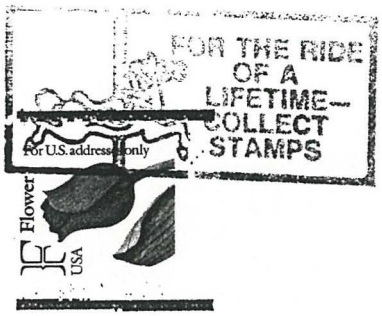
Carmen Olito
PO Box 111486
Anchorage, AK 99511

ANCHORAGE, AK 995
PM
4 JUN
1992



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Document ID Number
920608202
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- [x] B-93 WPWG
- [ ] C-RPWG
- [ ] D-PAG
- [ ] E-MISC.

ID # 92060513l

Group:
920605132
92060513[illegible]
92060513[illegible]
92060513[illegible]
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92060820

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

✓ ID stamped/Input completed
✓ Name
NO Affiliation
✓ Costs

✓ Category
Manipulation Enhancement – SALMON

✓ Lead Agency
ADF+G

Cooperating Agency(ies)

(Y) N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

1993 PROJECT SCORING SHEET

Critical Factors

Potential projects must meet all of the following to be considered further. Check the blank for "yes", "no", or "unknown".

YES	NO	UNKNOWN	
✓			1. Linkage to resources and/or services injured by the Exxon Valdez oil spill.
✓			2. Technical feasibility.*
		✓	3. Consistency with applicable Federal and State laws and policies.*

Comments:

* Restoration Framework, 1992, pp 43-44.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

Title of Project:

Fort Richardson Hatchery Water Pipeline

Justification: (Link to Injured Resource or Service)

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Name, Address, Telephone:

Jim Ehret
6311 DeBarr Rd #403
Anch. AK 99504
Jim Ehret

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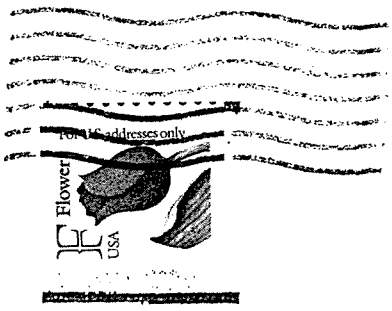
Jim Ehret
6311 DeBarr Rd #403
Anch AK 99504



Exxon Valdez Trustee Council
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Anchorage, Alaska 99501

Attn: 1993 Work Plan

Document ID Number
920605124

- ☐ A-92 WPWG
- ☐ B-93 WPWG
- ☐ C-RFWG
- ☐ D-PAG
- ☐ E-MISC.

JUN 05 REC'D

ID # 124

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

✓ Checked for Completeness

- ✓ ID stamped/Input completed
- Name
- ✓ Affiliation
- Costs

✓ Category

Restoration Manipulation & Enhancement

✓ Lead Agency

ADF&G

_____ Cooperating Agency(ies)

_____

(Y) N Passed initial screening criteria

_____

type F/S

_____

RANKING H M L Rank Within Categories

H M L Rank Overall

_____ Project Number - if assigned _____

1993 PROJECT SCORING SHEET

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Comments:

* Restoration Framework, 1992, pp 43-44.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

FORMAT FOR IDEAS FOR RESTORATION PROJECTS

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Document ID Number
92061305
☐ A-92 WPWG
☑ B-93 WPWG
☐ C-RPWG
☐ D-PAG
☐ E-MISC.

Estimated Duration of Project: One year.

Estimated Cost per Year: $3.4 Million

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Name, Address, Telephone:

Jeanne M. Talbot
17944 Meadow Creek Dr.
Eagle River, AK
99577

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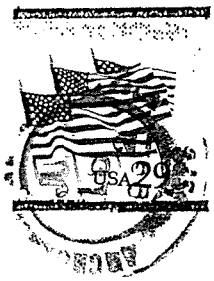

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ID # 920616305

COVER WORKSHEET FOR 1993 IDEA SUBMISSIONS

/ Checked for Completeness

/ ID stamped/Input completed
Name
Affiliation
Costs

/ Category

Restoration - manipulation / Enhancement

Lead Agency

ADF&G

Cooperating Agency(ies)

(Y) N Passed initial screening criteria

type F/S

RANKING H M L Rank Within Categories

H M L Rank Overall

Project Number - if assigned

920616305

1993 PROJECT SCORING SHEET

Critical Factors

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Comments:

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