Gulf of Alaska Ecosystem Monitoring and Research Program

Draft FY 2004

Work Plan

August 22, 2003

Exxon Valdez Oil Spill Trustee Council
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Anchorage, AK 99501
907-278-8012
www.oilspill.state.ak.us
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Notes to Reader

This is a first draft intended to inform the public on the status of funding recommendations in order to solicit comments. It contains a complete summary of the record of the decision for each draft recommendation. Recommendations may change in the next draft, which will be prepared in view of comments from the Trustees, the public and personnel at Trustee Council agencies. The next draft will also integrate additional supporting information from the Science Plan and the Invitation for Proposals, which are both available now under separate cover on the web, http://www.oilspill.state.ak.us/.

Please note that the abstracts in Appendix A were written by the authors of the proposals to describe their projects. To the extent that the abstracts express opinions about the status of injured resources or priorities for the GEM program they do not represent the views of the Executive Director, the Science Director or other staff of the Exxon Valdez Oil Spill Trustee Council, nor do they reflect policies or positions of the Trustee Council.

Funding recommendation categories are defined as follows: 1) **Fund.** Proposal meets important needs identified by the Trustee Council and it is clearly ready to move forward. A fund lower priority recommendation is applied to proposals where a question remains about when the needs identified should be met. 2) **Fund contingent.** Proposal meets an important need identified by the Trustee Council but it has easily resolvable deficiencies in content or some project personnel have overdue reports, so that it cannot move forward until the contingencies have been removed. 3) **Defer.** Proposal appears to meet needs identified by the Trustee Council but additional information is required to clarify the extent of those needs, it may have substantial deficiencies in content, some project personnel have overdue reports, or some combination of these, so that it may not be possible to move forward in the current funding cycle. 4) **Do not fund.** Proposal does not meet needs identified by the Trustee Council, the needs identified are not appropriate at this time, deficiencies in content cannot be readily resolved, or some combination of these circumstances exist, so that it is not possible to move forward in the current funding cycle.

Full scientific references for the literature cited may be found in the GEM Program document on the Trustee council’s web site (see reference above), as they are not included here for the sake of brevity.
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Introduction

After exactly four years of intensive study and planning, August 1999 through August 2003, the FY 2004 Work Plan represents the first full fiscal year of the Gulf of Alaska Ecosystem Monitoring and Research Program, GEM. GEM is a truly unique opportunity to build the environmental baseline data that was generally lacking at the time of the Exxon Valdez oil spill, while starting a tradition of converting monitoring data into information products that serve the needs of government regulators and the public.

In establishing the GEM Program, the Trustee Council explicitly recognized that complete recovery from the oil spill may not occur for decades and that full restoration of injured resources will most likely be achieved through long-term observation and, as needed, restoration activities. The Council further recognized that conservation and improved management of injured resources and services will require substantial ongoing investment to improve understanding of the marine and coastal ecosystem that supports the resources, as well as the people, of the spill region. In addition, prudent use of the natural resources of the spill area without compromising their health and recovery requires increased knowledge of critical ecological information about the northern Gulf of Alaska. This knowledge can only be provided through a long-term monitoring and research program that may span decades.

As a brief overview of what GEM is trying to learn, the largest information gaps in the northern Gulf of Alaska relate to how food and energy originating in the offshore marine environments are transported through the Alaska Coastal Current and nearshore areas to the watersheds. Accordingly, detecting changes in the variables that characterize the transfer of food and energy through the northern Gulf of Alaska is a top priority for the GEM Program. The GEM Program calls for building upward from oceanography through food and energy toward the large body of information that has accumulated within the management agencies over the past century on the abundance and biology of single species of large vertebrates such as seabirds, pelagic and anadromous fish, and marine and coastal mammals. In watershed and nearshore habitats where human activities are most prominent, it is important to find measures of how anthropogenic factors combine with human factors to influence these ecosystems. By filling gaps in how physical and human forces alter the transport of food and energy, changes in the large vertebrate species and prominent invertebrates, such as birds, shellfish, fish and mammals, can be understood in relation to a broad array of biological and physical observations throughout the region. In the long run, this comprehensive understanding of the ecosystems of the Gulf of Alaska is intended to lead to predictions of use to resource managers. In terms of types of long time series in these habitat types, observations on smaller to microscopic species of marine plants and animals, and physical and chemical observations from below the sea surface are widely lacking (GEM Program Document, Appendix D).
Starting in this fiscal year, 2004, efforts will focus on development of long-term moorings, stations, transects, and surveys in the nearshore and Alaska Coastal Current habitats, recognizing that the most expensive sampling zones to reach on a frequently recurring basis are the ACC and, at some point in the future, the offshore Gulf of Alaska. The limits on GEM fiscal resources likely will require maximum use of volunteer observing ships (VOS), which are commercial vessels that carry various monitoring instruments. Preparing for instrumentation of VOS and establishing the necessary relationships with ship operators and crews should be a priority early in the program.

In addition, a whole ecosystem (natural resource) model, as recommended by the National Research Council (NRC 2002) would link biological and physical observations across the habitat types, as well as the North Pacific, in order to understand changes in single species of interest to managers and concerned others. The GEM ecosystem model must be developed with a global perspective given the large spatial scales over which biological and physical phenomena operate. Identification and prioritization of the variables for the GEM program depend in large part on what is needed to operate the GEM ecosystem model. High priority variables needed in the GEM program are a composite of the variables essential to the workings of the GEM ecosystem model and its components: the ocean current model, the nutrient-phytoplankton-zooplankton (NPZ) models, and the Sound Ecosystem Assessment (SEA) pink salmon model (Willett et al. 2001, Patrick et al. 2003) (see Appendix F of the GEM Program Document). In assembling the GEM ecosystem model, emphasis will be placed on detecting changes in the variables that characterize the currents and the transfer of food and energy throughout the north Gulf of Alaska. In this way, changes in the large vertebrate species that are routinely monitored by state and federal government agencies can be better understood in relation to a broad array of biological and physical observations throughout the region.

Overview of the Response to the FY 2004 Invitation

Sixty-one proposals were received in response to the Invitation (Table 1). The proposals were not evenly distributed across the areas of the Invitation (Table 2), with the Alaska Coastal current receiving the largest response (12), followed by, Lingering Oil Effects (11), Community Involvement (9), Watersheds (8), and Nearshore (9). Invitation areas Data Management (4), Modeling (4), and Synthesis (4) had relatively light responses, with only four proposals being received per area. Overall most proposals received were directly responsive to the invitation. Projects funded in FY 2003 that were invited to be considered for further continuation were each assigned to one of the eight areas of the Invitation.

Each proposal received a thorough and independent peer review in a two stage process (Table 3). In the first stage the proposals received 100 reviews from volunteers drawn from a world wide pool of scientists and other professionals who have volunteered to help the GEM Program by submitting their credentials through an automated web-based process to a database of peer review services. In the second stage each the proposals received 122 reviews for the quality and relevance of the scientific or other professional content to the GEM Program by the Scientific Advisory Committee with the assistance of Dr. Robert Spies, Chair, Lingering Oil Subcommittee, Mr. Rob Bochenek, EVOSTC
Data Systems Manager, and Mr. Brett Huber, Chair, GEM Public Advisory Committee. In total each proposal was read by an average of just less than four qualified individuals (Table 3).

The results of the peer review were distilled into recommendations from the STAC for each proposal, and the results of the peer review were distributed to the full Public Advisory Committee within one day after the conclusion of the deliberations. The PAC subsequently met at EVOSTC offices with the Executive Director, the Science Director, Data Systems Manager and Dr. Brenda Norcross, Co-Chair of the STAC, to discuss the proposals, the STAC recommendations, and to provide their own opinions on the proposals.

The Executive Director’s draft recommendations (Table 1 and Appendix A) were prepared in close consultation with the Science Director following the PAC meeting. The Executive Director’s recommendations are based on information developed by staff during review of the proposals, STAC comments and recommendations, PAC comments and recommendations, and other considerations. Additional information is expected to become available during the public review of this draft, and subsequent recommendations from the Executive Director may change in response to that information.

Table 1. Proposals submitted in alphabetical order by author and abbreviated title, funding recommended by fiscal year, FY 04 – FY 06, and Executive Director’s funding recommendation as of 8/21/2003.

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<th>Project Title</th>
<th>Funding Information</th>
<th>ED Recommendation</th>
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**Fiscal summary**

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• In FY 04 ONLY this includes funds for Data Management, Administration, Science Management and ARLIS combined, and FY 05 & 06 it includes ONLY ARLIS. Amounts for EVOS Office in FY 05 and 06 are to be determined.

**Fiscal Graphics**

Figure 1. Stacked histogram of recommended funding by fiscal year FY 04 – FY 06 where stacks are two – STAC projects and (non-STAC, i.e. admin, data mgmt etc.)

Figure 2. Pie chart of number of proposals by area of the Invitation Figure 3. Pie chart of recommended dollars by area of the Invitation Figure 4. Pie chart of number of proposals by organization receiving funding, i.e. private & NGO, university, trustee agency DOI, ADF&G, ADEC, NMFS, and so forth. This is not BAA or ADF&G funding designation, but who the author of the proposal works for Figure 5. Pie chart of dollars of proposals by organization receiving funding, i.e. private & NGO, university, trustee agency DOI, ADF&G, ADEC, NMFS, and so forth. This is not BAA or ADF&G funding designation, but who the author of the proposal works for.

**Table 3.** Summary statistics for peer review results; number of non-STAC peer reviews received, range of non-STAC peer reviews received for each proposal, range of total (non-STAC + STAC) peer reviews for each proposal, average non-STAC peer reviews per proposal, and average total peer reviews per proposal.

| Number of Non STAC Peer reviews Received | 100 |
| Number of STAC Reviews | 122 |
| Range of Non – STAC PR | 0-4 |
| Range of Non-STAC + STAC PR | 2-6 |
| Average Number Of Non STAC PR per Prop. | 1.64 |
| Average Number Of Total PR per Prop. | 3.64 |

**Summary of Recommendations**

The Executive Director recommends 42 proposals for further consideration for funding in FY 2004. The funding recommendations fall into three categories, depending on the proposal’s state of readiness for funding. Eighteen proposals are rated as “Fund” as they are ready for funding without additional actions on the part of the authors or EVOSTC staff prior to the Council taking action (see Notes to Readers for definitions of funding recommendation categories). An additional 18 proposals are rated “Fund contingent” as they require limited actions on the part of the authors prior to receiving a “Fund” recommendation. Six proposals are recommended as “Defer” due to missing information or other problems that may not be resolvable before final recommendations have to be submitted to the Trustee Council on September 24. Nineteen proposals were not recommended for funding.

The total amount of funding of the proposals recommended for further consideration in this draft in FY 2004 is $3,649,873, which together with the proposed budgets for Administration, Science Management, Data Management and ARLIS (library services) of
$1,411,800 brings the draft recommendation to a total of $5,061,673, which slightly exceeds the FY 2004 funding cap of $5M established by the Trustee Council. This is as it should be at this point in the funding deliberation, since past experience is that some number of the proposals in the Fund Contingent and Defer categories will not be funded in FY 2004.

By area of the Invitation for FY 2004, the largest dollar value of recommendations is in Lingering Oil Investigations ($845K), followed by the Alaska Coastal Current ($750K), watersheds ($627K), Nearshore ($583K), Community Involvement ($230K), Synthesis ($314K), Data Management ($190K) and Modeling ($110K).

Funding Recommended by Area of the Invitation (Fund, Fund Contingent, Defer)

<table>
<thead>
<tr>
<th></th>
<th>FY 2004</th>
<th>FY 2005</th>
<th>FY 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC</td>
<td>$750,130</td>
<td>$654,908</td>
<td>$576,907</td>
</tr>
<tr>
<td>COI</td>
<td>$229,612</td>
<td>$168,858</td>
<td>$159,942</td>
</tr>
<tr>
<td>DM</td>
<td>$189,900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LO</td>
<td>$845,318</td>
<td>$206,200</td>
<td>$57,800</td>
</tr>
<tr>
<td>MOD</td>
<td>$110,825</td>
<td>$112,029</td>
<td>$112,236</td>
</tr>
<tr>
<td>NRS</td>
<td>$583,079</td>
<td>$266,470</td>
<td>$251,348</td>
</tr>
<tr>
<td>SYN</td>
<td>$313,600</td>
<td>$43,500</td>
<td>$118,500</td>
</tr>
<tr>
<td>WSH</td>
<td>$627,409</td>
<td>$644,924</td>
<td>$597,681</td>
</tr>
<tr>
<td>Total</td>
<td>$3,649,873</td>
<td>$2,096,889</td>
<td>$1,874,414</td>
</tr>
</tbody>
</table>

Table 2. FY 2004 Proposals recommended for funding by area of the Invitation

<table>
<thead>
<tr>
<th>ALASKA COASTAL CURRENT</th>
<th>ED RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batten-FY04-CPR data</td>
<td>Fund</td>
</tr>
<tr>
<td>Bechtel-FY04-Parameters in the N. Gulf of AK</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Bird-FY04-Mobile Data Network-Marine Hwy</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Bird-FY04-Mobile Data Network-Vessels</td>
<td>Defer Funding</td>
</tr>
<tr>
<td>Cokelet-FY04-AK Marine Highway System Ferries</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Kline-FY04-Exchange between GOA and PWS</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Okkomon-FY04-Monitoring Program in the NE Pacific Ocean</td>
<td>Fund</td>
</tr>
<tr>
<td>Pegau-FY04-Studying the ACC</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Stabeno-FY04-Bottom Control</td>
<td>Fund</td>
</tr>
<tr>
<td>Vaughan-FY04-Hinchinbrook Entrance</td>
<td>Defer Funding</td>
</tr>
<tr>
<td>Weingartner-FY04-Alaska Coastal Current</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Willette-FY04-Monitoring ACC Dynamics</td>
<td>Fund</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMMUNITY INVOLVEMENT</th>
<th>ED RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams-FY04-Fisheries Management</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Baird-FY04-Shoreline Habitat Mapping and Community-Based Monitoring</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Brown-Schwalenberg-FY04-Subsistence &amp; Stewardship Gathering</td>
<td>Defer Funding</td>
</tr>
<tr>
<td>Brown-Schwalenberg-FY04-Tribal Involvement in the GEM Program</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Cooper-FY04-Community-Based Sampling</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>DeLorenzo-FY04-Youth Area Watch</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Foster-FY04-Community Science Dialogues</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Kopchak-FY04-Resource Mapping</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Schneider-FY04-Kodiak Archipelago</td>
<td>Fund</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATA MANAGEMENT</th>
<th>ED RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiefer-FY04-Alaskan Groundfish Feeding Ecology</td>
<td>Fund</td>
</tr>
<tr>
<td>Kulkarni-FY04-Design for Data Management</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Macklin-FY04-NGOMET Metadatabase</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Sauge-FY04-Habitat Web Site</td>
<td>Fund</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LINGERING OIL EFFECTS</th>
<th>ED RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bodkin-FY04-Lingerling Oil and Sea Otters</td>
<td>Defer Funding</td>
</tr>
<tr>
<td>Fall-FY04-Status of Subsistence Uses</td>
<td>Fund</td>
</tr>
<tr>
<td>Irons-FY04-Bird Abundance in PWS</td>
<td>Fund</td>
</tr>
<tr>
<td>Irvine-FY04-Lingerling Oil on Boulder-Armored Beaches</td>
<td>Defer Funding</td>
</tr>
<tr>
<td>Lilly-FY04-Fate and Transport Modeling</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Matkin-FY04-Killer Whales in PWS/Kenai Fjords</td>
<td>Do not Fund</td>
</tr>
<tr>
<td>Nelson-FY04-Hydrocarbon Database</td>
<td>Fund</td>
</tr>
<tr>
<td>Renner-FY04-Population Modeling</td>
<td>Do not Fund</td>
</tr>
</tbody>
</table>

*Gulf of Alaska Ecosystem Monitoring, Draft FY 2004 Work Plan 8/22/2003*
LINGERING OIL EFFECTS

Rice-FY04-Linginger Population Status
Rosenberg-FY04-Harlequin Duck Population
Short-FY04-Monitoring Exxon Valdez Oil & PWS

ED RECOMMENDATIONS

Defer Funding
Fund Contingent
Fund Contingent

MODELING

Berenstein-FY04-Pink Salmon Fry Survival
McNutt-FY04-GEM Infrastructure - Lyn McNut
Schumacher-FY04-GEM Infrastructure
Wang-FY04-Building the GEM Infrastructure - Jia Wang

ED RECOMMENDATIONS

Do not Fund
Fund Contingent
Fund Contingent
Do not Fund

NEARSHORE

Bishop-FY04-Top-down and Bottom-up Processes
Bodkin-FY04-Nearshore Monitoring Decision Process
Couvillon-FY04-Coordinated Coastal Mapping
Devens-FY04-PWSRCAC-EVOS long term program
Jack-FY04-Sea Otter Abundance
Konar-FY04-Natural Geography in Shore Areas
Ruesink-FY04-Altering the Community Structure
Schoch-FY04-Oceanographic & Ecological Process
Thorne-FY04-Seafood Waste Discharge

ED RECOMMENDATIONS

Fund
Fund
Fund
Do not Fund
Do not Fund
Fund
Fund
Do not Fund
Fund

SYNTHESIS

Eckert-FY04-Natural Variability in the Nearshore
Mann-FY04-Reconstructing Sockeye Populations
Merritt-FY04-GEM Watershed Synthesis
Spies-FY04-EVOS Damage Assessment & Restoration

ED RECOMMENDATIONS

Fund
Fund
Do not Fund
Fund Contingent

WATERSHEDS

Ben-David-FY04-Transfer of Nutrients from Sea
Finney-FY04-Marine-terrestrial Linkages
Guay-FY04-Assessing Watershed
Heintz-FY04-Energy Allocation
Homhold-FY04-Marine-derived Nutrients on Sockeye Salmon
Knudsen-FY04-Nutrient-Based Resource Management
Mazuender-FY04-Marine-Derived Nutrients
Walker-FY04-Marine Derived Nutrients

ED RECOMMENDATIONS

Do not Fund
Fund Contingent
Do not Fund
Fund Contingent
Fund Contingent
Fund Contingent
Fund Contingent
Fund Contingent
Discussion of Proposals by Area of Invitation

Alaska Coastal Current

Introduction

Much of the Gulf of Alaska is a very deep (circa 4000m) reservoir of salty water bearing carbon and nutrients that would fuel biological production if transported to the surface waters of the GEM habitat types. Paradoxically, the ocean processes such as thermohaline circulation and upwelling that transport deeper waters toward the relatively shallow depths appear to be absent or short-lived in the northern Gulf. The opposite condition from upwelling, coastal downwelling is usually the case in the Gulf, particularly in winter. It is known that cross-shelf, surface Ekman transport in winter cannot account for the high nutrient concentrations observed on the inner shelf in spring (Childers 2000, Whitledge 2000). Other mechanisms are possible. In summer, when downwelling relaxes, salty, nutrient-rich water from offshore invades the inner shelf (Royer 1975), but the annual extent of the invasion varies and may be controlled by forces with periods of approximately two decades (Parker et al. 1995). Vertical mixing is strong through the winter and redistributes fresh water, salt and possibly nutrients throughout the water column, so a combination of mechanisms possibly is involved in the annual nutrient re-supply to the inner shelf (GEM Program Document, Chapter 7.6.4).

Even though upwelling appears to occur only briefly in the Gulf (GEM Program Document, Chapter 7.6.2, Royer 1982, 2000, Reed and Schumacher 1986), the northern and western Gulf and adjacent waters are nonetheless highly productive of benthic, pelagic and littoral vertebrates (fish, birds and mammals) and benthic invertebrates such as crustaceans and mollusks (i.e. Feder and Jewett 1986, Cooney 1986, Martin 1997, Witherell 1999, Kruse et al. 2000, Rogers et al. 1986, Highsmith et al. 1994, Purcell et al. 2000, Rooper and Haldorson 2000). Solving the mystery of the missing ecological mechanisms is essential to explain how the ingredients necessary for biological production of plants and animals (nutrients and food) are transported to be converted into the populations of fish, shellfish, birds, and mammals that are the centers of attention for natural resource management agencies and coastal economies.

A reasonable working solution to the mystery of the missing ecological mechanisms starts with the processes that change the strength of the factors driving the currents of the region (GEM Program Document, Chapter 7.6.4). Both the area of the ACC and adjacent shelf and slope are strongly affected by advection (mostly horizontal transport of momentum, energy, and dissolved and suspended materials by ocean currents), implying that climate perturbations, even those occurring far from the GEM study area, can be efficiently communicated into the northwestern GOA by ocean circulation (GEM Program Document, Chapter 7.6.2, p. 130). The strong advection also implies that processes occurring as far upstream as northwestern United States might substantially influence biological production within the GEM habitat types.
Invitation Requirements

The top priority for GEM in the ACC starting in FY 04 is to initiate the process that leads to collecting basic physical (temperature and salinity) and biological observations (optical measures, such as fluorescence) from a vessel of the Alaska Marine Highway System (AMHS) or other ship of opportunity operating in the waters of Prince William Sound, outer Kenai Peninsula, lower Cook Inlet, Kodiak and the Alaska Peninsula. Observations on these basic variables will be of use to a range of scientists, resource managers, and public members for multiple purposes and are fundamental to the future GEM modeling program. As part of this objective, continued development of the vessel-of-opportunity projects deploying the continuous plankton recorder and thermosalinograph into long-term projects is desirable. Another priority is to begin applying monitoring results to management of development activities in the ACC.

Synopsis of Proposals Received and Recommended

Twelve proposals were received in the ACC category, and nine were recommended for further consideration for funding.

Funding

<table>
<thead>
<tr>
<th>Proposal</th>
<th>FY 2004</th>
<th>FY 2005</th>
<th>FY 2006</th>
<th>ED REC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batten-FY04-CPR data</td>
<td>$124,000</td>
<td>$124,000</td>
<td>$124,000</td>
<td>Fund</td>
</tr>
<tr>
<td>Okkonen-FY04-Monitoring Program in the NE Pacific Ocean</td>
<td>$25,036</td>
<td>$27,859</td>
<td>$28,858</td>
<td>Fund</td>
</tr>
<tr>
<td>Stabeno-FY04-Bottom Control</td>
<td>$49,500</td>
<td></td>
<td></td>
<td>Fund</td>
</tr>
<tr>
<td>Weintraub-FY04-Alaska Coastal Current</td>
<td>$69,249</td>
<td>$69,249</td>
<td>$69,249</td>
<td>Fund</td>
</tr>
<tr>
<td>Bechtol-FY04-Parameters in the N. Gulf of AK</td>
<td>$51,100</td>
<td>$49,200</td>
<td>$51,100</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Coleto-FY04-AK Marine Highway System Ferries</td>
<td>$137,100</td>
<td>$198,100</td>
<td>$155,900</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Willetto-FY04-Monitoring ACC Dynamics</td>
<td>$89,800</td>
<td>$68,000</td>
<td>$27,900</td>
<td>Fund Contingent</td>
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<tr>
<td>Bird-FY04-Mobile Data Network-Vessels</td>
<td>$129,300</td>
<td>$118,500</td>
<td>$119,900</td>
<td>Defer</td>
</tr>
<tr>
<td>Vaughan-FY04-Hinchinbrook Entrance</td>
<td>$75,045</td>
<td></td>
<td></td>
<td>Defer</td>
</tr>
</tbody>
</table>

Totals $750,130 $654,908 $576,907

Community Involvement

Introduction

Meaningful public and community participation has long been an essential part of the Trustee Council's process and an essential strategy for implementing the GEM Program (GEM Program Document, Chapters 1 and 3; NRC 2002). Current and future GEM monitoring projects are encouraged to have a strong community involvement component whenever possible. Comprehensive strategies for incorporating community involvement in GEM projects are being developed now under GEM Project 030575 (GEM Program Community Involvement/Community-Based Monitoring Plan) for the Council’s consideration in the fall of 2003. The report is expected to provide the basis for a thorough examination of the role of community involvement in the GEM program to be conducted by the executive Director during FY 2004. Until that examination is completed and the recommended community involvement approach reviewed, and adopted by the Council, no new specific community involvement projects are being solicited with the exception noted below.

Invitation Requirements

Proposals were invited to develop specific products such as targeted workshops, databases, maps, publications, and community science symposia that provide services to communities and stakeholders in the GEM region related to marine ecosystem health and sustainability. Proposals will be evaluated on their relevance to community needs, potential to develop community resources of potential use to other GEM projects, and their link to the goals of the GEM Program. The report on approaches to community involvement commissioned by the Trustee Council in FY 2003 will not be available until the end of September 2003. The report is expected to provide the basis for a thorough examination of the role of community involvement in the GEM program to be conducted by the Executive Director during FY 2004. Until that examination is complete funding of community involvement projects will be based on responsiveness to the criteria in the FY 04 Invitation and past and future utility for implementing the GEM program.

Synopsis of Proposals Received and Recommended

Nine proposals were received in the community involvement category, and five were recommended for further consideration for funding.
Funding

<table>
<thead>
<tr>
<th>Proposal</th>
<th>FY 2004</th>
<th>FY 2005</th>
<th>FY 2006</th>
<th>ED REC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schneider-FY04-Kodiak Archipelago</td>
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<td>$63,000</td>
<td>$63,000</td>
<td>Fund</td>
</tr>
<tr>
<td>Adams-FY04-Fisheries Management</td>
<td>$20,000</td>
<td></td>
<td></td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Baird-FY04-Shoreline Habitat Mapping</td>
<td>$20,100</td>
<td>$19,900</td>
<td></td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Cooper-FY04-Community-Based Sampling</td>
<td>$102,512</td>
<td>$85,958</td>
<td>$96,942</td>
<td>Fund Contingent</td>
</tr>
<tr>
<td>Brown-Schwalenberg-FY04-Subsistence &amp; Stewardship Gathering</td>
<td>$24,000</td>
<td></td>
<td></td>
<td>Defer</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>$229,612</td>
<td>$168,858</td>
<td>$159,942</td>
<td></td>
</tr>
</tbody>
</table>

Data Management

Introduction

The Data Management and Information Transfer component of GEM includes the following functions: data receipt, quality control (QC), storage and maintenance, archiving and retrieval, administrative support, and the systems necessary to automate as many of these procedures as possible. This component also includes programs needed to create the custom data and information products that will be provided to the modeling and applications components, and to the users of this information. Data Management and Information Transfer provides the essential function of extracting the full scientific and societal benefits from GEM projects (NRC 2002; GEM Program Document, Chapter 9). Data generated by GEM projects need to be converted into useful information that is readily available in a timely fashion to the scientific communities, resource managers, resource dependent people and their communities, policy makers, and other members of the public. In addition, data sets and information regarding other research and monitoring activities in the GEM region must be readily accessible to EVOS staff and contractors, GEM committees and working groups (if any), state and federal resource agencies, and concerned members of the public in order to facilitate gap analysis during project selection and implementation, and maximize the use of all data collected (GEM Program Document, Chapter 3).

Invitation Requirements

Proposals were invited to construct a database of metadata describing marine related databases from the northern Gulf of Alaska relevant to GEM. Working from past and present efforts of GEM, PICES, NPRB, UAF/IMS, PMEL and others, projects would compile a list of databases related to the physical and biological features of the northern

Gulf of Alaska and assess and analyze their potential relevance to GEM. Meta
descriptions of existing datasets would include thematic and semantic descriptors (i.e.,
study context such as PI, funding source and locality, species study association, listing of
physical/biological measurements performed by study, and quantity and quality of
measurements performed). In addition, a syntactic metadata description will be required
which would include, but may not be limited to, file format, file size, and storage
mechanism and location.

The GEM objective is to create a comprehensive, web accessible georeferenced
database of the marine-related physical and biological databases of the northern Gulf of
Alaska, building on standards and systems already in place, such as the State of Alaska’s
Cooperatively Implemented Information Management System (CIIMMS) and the
STORET database. The successful proposal would describe an approach that assigns
priorities for inclusion of databases based on a combination of factors such as length of
time series, use in existing physical or biological models, and relevance to GEM. PIs of
the successful proposal will be expected to work with GEM staff to create a list of
predefined criteria which assigns a quantitative value summarizing the importance of the
dataset to specific GEM efforts. Cost efficiencies through cooperation, coordination, and
integration with similar efforts covering related geographic areas are expected. Ways and
means of insuring close coordination with GEM modeling efforts should be described.
Essential requirements are ease of web access and export of information to other systems.
Consult GEM Program Document Chapters 8 and 9 and NRC Chapter 7 for further
background.

In addition to the metadatabase solicitation, the Invitation also asked for a pilot
project to apply the Ocean Biological Information System (OBIS) within the GEM
Region. The proposal would show how to set up a regional OBIS node by deploying an
instance of the OBIS database structure. In addition, the proposal would create a plan to
facilitate the absorption into the regional OBIS node of past, present and future marine
taxonomic data collection efforts. Information on OBIS can be accessed via the web at
http://marine.rutgers.edu/OBIS/. Working with a resource management agency, the proposal
would identify a manageable data and information system to host the pilot demonstration
and provide an implementation schedule and plan for the OBIS software. A successful
proposal would define a method to isolate candidate historic datasets which have
characteristics which lend themselves to be easily absorbed into the OBIS database
structure. Preference should be given to datasets that span multiple agencies. The data
system chosen for the pilot project is expected to have scientific relevance to themes
presented in the GEM Program Document and GEM Science Plan.

**Synopsis of Proposals Received and Recommended**

Four proposals were received in the data management category and three were selected
for further consideration for funding.
Funding

<table>
<thead>
<tr>
<th>Proposal</th>
<th>FY 2004</th>
<th>FY 2005</th>
<th>FY 2006</th>
<th>ED REC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiefer-FY04-Alaskan Groundfish Feeding Ecology</td>
<td>$80,900</td>
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<td></td>
<td>Fund</td>
</tr>
<tr>
<td>Soupe-FY04-Habitat Web Site</td>
<td>$19,000</td>
<td></td>
<td></td>
<td>Fund</td>
</tr>
<tr>
<td>Macklin-FY04-NGOA Metadata</td>
<td>$90,000</td>
<td></td>
<td></td>
<td>Fund Contingent</td>
</tr>
</tbody>
</table>

Totals $189,900

Lingering Oil Effects

Introduction

The Trustee Council continues to be concerned about Exxon Valdez oil remaining in the marine environment and any effects it may be having on injured resources. Injured resources are identified and their current status described on the Trustee Council’s web site at http://www.oilspill.state.ak.us/facts/status.html. Current objectives for the Lingering Oil Effects component of the Council’s program are focused on examining the fate and effects of the remaining oil on injured resources and services and especially populations of two species in western Prince William Sound, harlequin ducks and sea otters. These populations have shown continuing exposure to hydrocarbons in localities where potentially toxic forms of oil from the Exxon Valdez are known to persist. Objectives for FY 04 also include learning about the status of subsistence uses of the injured resources in the spill affected areas for comparison to an earlier survey in 1998.

The reasons that some populations of injured species in Prince William Sound have not met the criteria established for their recovery in the nearly 14 years since the oil spill are still not clear. For some species it has not been possible to clearly separate the possible toxic effects of oiling from the possible effects of natural causes such as climate change and predation. For this reason, GEM projects that address injured species and ecosystems are designed to understand the effects of natural forces on populations and their productivity. The knowledge gained may permit at least a retrospective understanding of oil injury versus other impacts for species injured by Exxon Valdez oil, and provide the background on natural forces necessary to understand effects of oiling in future oil spills.

Invitation Requirements

Proposals were invited to examine the fate and effects of Exxon Valdez oil in western Prince William Sound. Proposals specifically addressing these effects on populations of sea otters and harlequin ducks are of interest. Proposals are also requested to examine the status of subsistence activities in the spill affected areas. In addition to the objectives and examples described here, proposers may use this invitation to suggest other approaches to aid the recovery of other resources and services that were identified by the Trustee Council as having been injured by the oil spill. However, the Trustee Council’s emphasis in FY 04 will be on development of the GEM Program as its primary restoration activity.

Studies were invited on bioavailability of lingering oil in Prince William Sound. Research conducted in Prince William Sound in 2001 estimated that about 28 acres of intertidal beach remain contaminated from spilled *Exxon Valdez* oil. The Trustee Council is interested in evaluating the bioavailability of this oil to sea otters and harlequin ducks in the Prince William Sound area. Proposals are invited to evaluate foraging activities of sea otters in oiled areas; collect sea otter mortality, emigration and population data; and monitor harlequin duck recovery.

Studies were also invited on monitoring of presence of lingering oil: The Trustee Council is interested in establishing a strategy for monitoring persistence of *Exxon Valdez* oil, and its relationship to other sources of contamination in Prince William Sound. A follow-up study to the 1998 survey of subsistence uses in spill affected Areas was invited. The last complete survey of the status of subsistence uses in spill-impacted communities was conducted in 1998. FY 04 is six years later, and the Trustee Council will consider proposals to evaluate the status of subsistence uses by collecting, analyzing, and reporting information about current subsistence uses in a subset of oil spill area communities using methodology that is comparable with previous research results. The evaluation is expected to be a collaborative effort in which the study communities are partners in each phase of the study.

**Synopsis of Proposals Received and Recommended**

Eleven proposals were received in the lingering oil effects category, and eight were recommended to be further considered for funding.

**Funding**

<table>
<thead>
<tr>
<th>Proposal</th>
<th>FY 2004</th>
<th>FY 2005</th>
<th>FY 2006</th>
<th>ED REC.</th>
</tr>
</thead>
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<tr>
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Modeling

Introduction

One of the top overall priorities for the GEM Program is to develop a whole-ecosystem natural resource model as an adaptive management tool for guiding the GEM monitoring program (see GEM Program Document, Chapter 8, and NRC 2002, Chapter 7). An interdisciplinary biophysical modeling effort is essential to developing monitoring efforts in all of the habitat types, as well as the data management and information transfer component of the program. Modeling helps to understand the limitations on what can be learned from sampling in different time and space scales through simulations based on data from the projects. The ultimate long-term purpose of the model is to describe, in relation to biological and physical variables, the abundance through time of seabird, marine mammal and fish species that are selected for relevance to management interests. Modeling is also used to identify and refine measures, such as time series of biological or physical measurements that are best suited to communicate publicly the current status of the ecosystem for the GEM contribution to a Gulf of Alaska section in a North Pacific Ecosystem Status Report now under development by PICES and others.

Invitation Requirements

Proposals were invited that address how an interdisciplinary biophysical model of the northern Gulf of Alaska would be developed in the short-term. As envisioned, building the model would start from existing physical and biological models; hence, the means of cooperation, coordination, integration, and achieving cost efficiencies with existing modeling efforts must be emphasized in a successful proposal. Ways and means of communicating the contents, functions and outputs from the model to a variety of different disciplines and across a variety of common operating systems should also be carefully described, as well as data assimilation strategies for selecting time and space scales for biological and physical monitoring.

Synopsis of Modeling Proposals Received and Recommended

Four proposals were received in the modeling category, and two were recommended for further consideration for funding.

Funding

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<tr>
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Nearshore

Introduction

Most of the objectives for the nearshore in FY 04 will be met by projects underway in FY 2003 and expected to continue in FY 2004. However, another objective is to increase the incorporation of human effects into the research on nearshore monitoring, in order to begin applying monitoring results to management of human activities in the nearshore.

Invitation Requirements

Proposals are invited to analyze the information needed to support resource and environmental management decisions for human activities in the nearshore. Building on the GEM Program Document (see especially Chapter 7.14-15), the proposal would analyze the information needed to support resource and environmental management decisions for a range of human activities (oil and gas development, seafood processing, tourism and recreation, etc.) in the nearshore in one of the major geographic regions of the GEM area (Prince William Sound, Cook Inlet or Kodiak-Afognak). Working in close cooperation with state and federal agencies actively engaged in resource and environmental management activities and reviewing the current scientific literature, the analysis would identify gaps by comparing information needed by managers to that actually available. The analysis would address all aspects of the suitability of past, current and future data and information products needed to support resource and environmental management decisions. Annual amount should be in vicinity of $80,000. Up to three years of funding may be proposed.

Synopsis of Proposals Received and Recommended

Nine proposals were received in the nearshore category and six were selected for further consideration.

Funding

<table>
<thead>
<tr>
<th>Proposal</th>
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<td>Bouldin-FY04-Nearshore Monitoring Decision Process</td>
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<td>Cowillion-FY04-Coordinated Coastal Mapping</td>
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Synthesis

Introduction
The required scientific guidance for implementing the GEM program is based on putting together ideas, pieces of information from the scientific literature, and the potential relations among existing data gathering programs, including GEM (see Chapter 3 of the GEM Program Document for further information), to form a larger picture. Synthesis is the entry point to the cycle of monitoring and research. Synthesis builds on past experience to update the current understanding of the northern Gulf of Alaska marine ecosystems. It brings together existing data and information from any number of disciplines, times and regions to evaluate different aspects of the GEM Program's conceptual foundation, central hypotheses and related ideas, working from the perspective of a habitat type.

The primary purposes of the synthesis activities in FY 04 are to (1) fully develop the introduction to the habitat types in the GEM Science Plan and (2) point out options for projects that might be implemented in FY 06 and beyond.

Invitation Requirements
Proposals are invited to provide a synthesis of scientific literature and existing data gathering programs to serve as the introduction to the GEM Science Plan sections for three of the four GEM habitat types: Alaska Coastal Current, nearshore and watersheds. Bearing in mind that the boundaries of habitats are not rigidly drawn (Chapter 2, GEM Program Document), proposals should concentrate on one habitat type. However, each proposal must address linkages of its habitat type with the other habitat types. In addition, proposals should demonstrate how the synthesis would proceed from the primary source documents for GEM—the GEM Program Document, the GEM Science Plan, and the National Research Council’s GEM review book (A Century of Ecosystem Science, 2002), and Exxon Valdez Oil Spill Restoration Plan - Update on Injured Resources and Services (August 2002), all found at http://www.oilspill.state.ak.us/gem/documents.html) -- to incorporate scientific literature and data gathering activities not addressed in the source documents. In addition, synthesis documents should incorporate, to the extent they are available, the results of Restoration Program research, as developed in the three-year EVOS Restoration Project /600 (Synthesis of the Ecological Findings from the EVOS Damage Assessment and Restoration Program). Methods should include consultation with EVOS staff and contractors, GEM committees and relevant working groups (if any), state and federal resource agencies and concerned members of the public. At a minimum, the results of the synthesis are to be presented orally at a public meeting and should be suitable for publication as a review article, as well as incorporation into the relevant sections of the GEM Science Plan and the Gulf of Alaska section of a North Pacific Ecosystem Status Report now under development by the North Pacific Science Organization (PICES; see Modeling section of this document).
Synopsis of Proposals Received and Recommended

Four proposals were received that were placed in the synthesis category, two directly responsive to the Invitation (Eckert and Merritt), one proposal funded in FY 2003 seeking to continue in FY 2004 (Spies), and one proposing a type of synthesis not envisioned in the Invitation (Mann). Three were recommended for further consideration for funding.

Funding

<table>
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<tr>
<th>Proposal</th>
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<th>FY 2006</th>
<th>ED REC.</th>
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<tr>
<td>Spies-FY04-EVOS Damage Assessment &amp; Restoration</td>
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Watersheds

Introduction

Most coastal watersheds in southcentral Alaska and elsewhere in the North Pacific are thought to be heavily influenced by marine nutrients (MDN) and carbon carried inland by animals such as salmon, river otters, bald eagles, and harlequin ducks, yet very little is actually known about the extent of this influence, and no monitoring programs currently measure marine effects. Without MDN information, human non-point source pollution cannot be distinguished from natural events such as the effects of salmon spawning. Commercial and recreational fisheries for salmon are at risk of curtailment without MDN information, since the actual degree of dependence of potentially threatened or endangered terrestrial mammals, such as brown bear, on marine sources is not known, but is now presumed to be high. Without adequate measures and routine monitoring of MDN, regulations to reduce pollution and lower risks to listed species may be unnecessarily injurious to the economy, ineffectual, or both. Understanding of past oil spill injuries would be enabled and future oil related injuries would be more readily diagnosed.

The initial focus of the GEM watershed program is to conduct research on how to measure the known marine related indicators: stable isotopes of carbon, nitrogen and sulfur (C, N, S) and proxies for marine related sources of nutrients and food, such as standard water quality indicators (nitrates, ammonium). Answers are needed to the following questions: What are the best indicators? Are C, N, and S equally useful as indicators of marine linkages in all types of watersheds? Are concentrations of nitrates and ammonium in freshwater suitable proxies for stable isotopes? Are there other suitable proxies for marine-related indicators? What is the variability of marine related indicators in bodily tissues among species within watersheds? Which species or species guilds are
best suited to measuring marine linkages? How do suitable species vary among different types of watersheds, i.e., heavily forested, anadromous, non-anadromous, recently glaciated, heavy human development, pristine, and so forth? What are the indicators of terrestrial influences in nearshore marine environments?

**Invitation Requirements**

Proposals are supposed to identify and show how and where to measure the best indicators of marine-related biological production in watersheds, including within an existing water quality monitoring program. Three areas were emphasized in the Invitation:

- Detection of Marine-Related Indicators
- Community Based Sampling Strategies for Sampling Marine-Related Indicators
- Including Marine Related Variables in an Existing Water Quality Monitoring Program.

**Synopsis of Proposals Received and Recommended**

Eight proposals related to watersheds were received. Seven proposals responded directly to the request for detection of marine-related indicators in watersheds and nearshore environments (Cooper, Finney, Heintz, Honnold, Knudsen, Mazumder, and Walker. Of these seven responsive proposals, three proposals responded to the requests for Community Based Sampling Strategies for Sampling Marine-Related Indicators, and Including Marine Related Variables in an Existing Water Quality Monitoring Program (Cooper, Finney, Honnold). Two proposals (Ben-David, Guay) were not directly responsive to the Invitation. One apparently unresponsive proposal (Ben-David) did not evaluate a suite of measures of MDN, but relied on the adequacy of stable isotopes of carbon and nitrogen as measures, and proposed to model biodiversity as a function of these measures, among other attributes of the system. The other proposal of this nature (Guay) would measure heavy metals in coastal environments as indicators of human activities in terrestrial environments, but did not purpose to evaluate a suite of measures or contrasting environments.

**Funding**

<table>
<thead>
<tr>
<th>Proposal</th>
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<th>FY 2006</th>
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Appendix of Abstracts, and Recommendations of STAC & ED

Please note that the abstracts in Appendix A were written by the authors of the proposals to describe their projects. To the extent that the abstracts express opinions about the status of injured resources or priorities for the GEM program they do not represent the views of the Executive Director, the Science Director or other staff of the Exxon Valdez Oil Spill Trustee Council, nor do they reflect policies or positions of the Trustee Council.

Project: Adams-FY04-Fisheries Management

Project Title: Fisheries Management Applications - Submitted under the BAA

Location: Prince William Sound

Proposer: Kenneth Adams  Proposer Affiliation: Private Enterprise

Lead Agency: NOAA

Funding Recommendations:
FY04: $20,000.00  FY05:  FY06:

Abstract:
The proposal is submitted under the category of Community Involvement. The project, begun in March of FY–02, will continue to build bridges between the scientific community and resource managers, enhancement programs, subsistence and other stakeholder user groups. The scientific community is describing and attempting to predict variation in biological production whereas, the commercial fishing community desires application for this new information. We will develop a Mini-Symposium of the annual GEM workshop for presentation in small communities. We will also continue the successful series of workshops created in Cordova for identification of PWS fishery community issues and needs and will seek resolution of the identified issues and needs by application of EVOSTC supported research. The results contained in the Sound Ecosystem Assessment (SEA) program are especially valuable to this process. This project provides clear and positive opportunities for the resource dependent community to become involved in GEM and can also help identify how products of GEM can be made meaningful to the community.

STAC Recommendation:
This proposal is for three additional years of funding for Prince William Sound Fisheries Research Applications and Planning (PWSFRAP). This was originally funded as a pilot project for 1.5 years. It has been highly successful in that the proposers have used this venue to inform and involve the Cordova community in issues of fisheries, especially those that were examined as part of SEA research. The PIs have been extremely involved in GEM; Adams has attended all the public components of the GEM process and has relayed the knowledge to an interested Cordova community. These PIs made a presentation to the GEM PAC in Cordova in June. Their project was very well received by the PAC. The proposal is well written and includes lots of objectives to get scientific information to the public and to get information back from them. Unfortunately, the proposal is rather weak on the methods of how these objectives will be accomplished. This proposal specifically fulfills the invitation in that it proposes to conduct “mini-symposia” that are synopsis of the annual EVOS meeting. It is disconcerting that the proposal does not give any details about how the mini-symposia are expected to be done. Past community workshops have
been highly successful and these should be continued. Objective to bring symposium events to villages is important, but it is not clear that current technology is adequate. The budget is well above the $10-20K limit suggested in the Invitation. The STAC recommends the proposal be revised to provide some specific methods for extending the successful workshop approach employed in Cordova to other communities in the spill area for an amount not to exceed $20K. Fund reduced for one year, amount contingent upon receipt of revised proposal.

Executive Director's Recommendation:
The project has proven effective in working with the fishing community in Cordova to identify projects for GEM that are important to the long-term economic development of Prince William Sound. It has also been effective in communicating the potential benefits of the GEM program to the Cordova fishing community. In order to move forward the proposal needs to be re-written to focus on how to extend this successful formula to other localities in the spill affected area. Fund contingent.
Project: Baird-FY04-Shoreline Habitat Mapping and Community-Based Monitoring

Project Title: Connecting with Coastwalk: Linking Shoreline Habitat Mapping with Community-based Nearshore Monitoring in Kachemak Bay

Location: Kachemak Bay

Proposer: Steve Baird

Proposer Affiliation: ADFG

Lead Agency: ADFG

Funding Recommendations:

FY04: $20,100.00
FY05: $19,900.00
FY06:

Abstract:
The project will merge high-resolution mapping of the physical structure of the nearshore environment in Kachemak Bay with a citizen-generated biological and human impact data collected over 18 years of an annual Kachemak Bay Coastwalk shoreline survey into a GIS. The integration of data, refinement of data collection protocols, and piloting of revised protocols will occur during Year 1. During Year 2, the potential for use of the combined methodology for long-term GEM community-based nearshore monitoring will be assessed. The project will culminate in a Kachemak Bay community/scientist workshop to integrate and synthesize information and apply the GIS results to the selection of nearshore monitoring sites for community-based monitoring. This project will advance the development of a community-based nearshore monitoring program for the GEM program.

STAC Recommendation:
The proposal is responsive to the invitation (nearshore, community involvement) and is consistent with GEM strategies (incorporate community involvement and local knowledge) and goals (detect change, provide information to facilitate understanding of causes of change). KBRR is completing EVOS project 030556 mapping project (to be used to overlay biological or human impact data). The project concludes with a Kachemak Bay community/scientist workshop to present results, introduce GEM monitoring strategies, and develop opportunities for community involvement in nearshore monitoring. The project provides a link between nearshore community-based information and long-term monitoring applicable to GEM. In short, the project will build on an existing (18 year) citizen-based, volunteer monitoring program (that is presumably responsive to community concerns) and combine it with a GEM-funded GIS mapping project to assess the utility of this method for future GEM monitoring. There needs to be more discussion of the compatibility of the 18-year data set with the more recent mapping project (030556), and how the two will be linked. The proposal needs to provide the missing CV for Sigman and a definition of role of Schoch. Methods need elaboration and more rigor in the explanations. Revision needs to provide an example of a problem that can be addressed using the data set and particularly the utility of the data set to the long-term monitoring activities in GEM. Recommendation: Fund contingent on receipt of revised proposal responsive to peer reviewer concerns.

Executive Director’s Recommendation:
The proposal presents an excellent opportunity to build two-way communication between GEM and the public regarding nearshore monitoring needs; however, the deficiencies identified by the staff and the peer reviewers need to be addressed before the project can move forward. Fund contingent.
**Project:** Batten-FY04-CPR data

**Project Title:** Acquisition and Application of CPR data in the Gulf of Alaska - Submitted under the BAA

**Location:** Alaskan shelf and Gulf of Alaska

**Proposer:** Sonia Batten  
**Proposer Affiliation:** Non Alaskan University  
**Lead Agency:** NOAA

**Funding Recommendations:**

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</tr>
<tr>
<td>FY06</td>
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**Abstract:**

Plankton are a critical link in the marine food chain that respond rapidly to climate change and form the link between the atmosphere and upper trophic levels. Many important marine resources in the GoA are strongly influenced by changes in ocean climate. Recent CPR data have shown significant changes occurring in all plankton communities in the GoA, associated with the recent climate shift. We will continue the acquisition of CPR data in the Gulf of Alaska on the current transect that crosses the ACC and add an additional transect in FY05 that will sample the ACC further ‘downstream’ and provide baseline, seasonal plankton data for the lower Cook Inlet and it’s transition to the Gulf of Alaska. We also propose analysis of data already collected to investigate the links between plankton and juvenile salmon migrations, and the larval distribution of commercially important decapods sampled by the CPR.

**STAC Recommendation:**

Batten and Welch, using resources of the Sir Alister Hardy Foundation for Ocean Science (SAHFOS), GEM and NPRB, have been conducting continuous plankton recorder (CPR) studies in the Gulf of Alaska since 1998. Those were initially exploratory, but have been run consistently in a time-series monitoring mode since March 2000. Roughly monthly transects are run through the spring each year from Hinchinbrook Entrance to Long Beach by CPRs towed by oil tankers. In addition, a transect has been run several times in recent years from Vancouver, B. C. to Yokohama. Among other things, the results show (1) the north-south seasonality gradient of the large, particle grazing copepods of the GOA (earlier south, later north), (2) evidence of transport into oceanic waters of coastal zooplankton by recurring (or persistent) eddies along the BC coast, and (3) clear evidence correlating with more coast-bound studies of faunal changes occurring at the apparent pelagic regime shift at the end of the 1990’s. Three strong publications have resulted from the work so far, covering those results, and Dr. Batten also has been active in studies and publications on the statistical validity of CPR work generally. Community involvement includes the volunteer observing ship activity itself, and preparation and loading of CPRs by community college personnel in Valdez. The proposal emphasizes the value of zooplankton time series for early identification of regime shifts and other responses of the pelagic ecosystem to climate change. Present funds available to GEM do not justify committing to the expanded transects in FY 05 and 06 in light of need to establish other vessels of opportunity programs. Fund project as written for FY 04 through FY 06 at funding level of FY 04.
Executive Director's Recommendation:
Past performance of investigators has been exemplary in all respects, and the project is producing information on long-term changes in conditions that affect production of birds, fish and mammals in the Gulf. Responsiveness of investigators to requests for information and reporting deadlines is very good. Present funds available to GEM do not justify committing to the expanded transects in FY 05 and 06 in light of need to establish other vessels of opportunity programs. Project is to be conducted with FY 04 objectives and funding levels from FY 04 through FY 06. Fund.
**Project:**  Bechtol-FY04-Parameters in the N. Gulf of AK

**Project Title:** Monitoring Ecosystem Parameters in the Northern Gulf of Alaska

**Location:** Kachemak Bay, Cook Inlet

**Proposer:** William Bechtol  
**Proposer Affiliation:** ADFG

**Lead Agency:** ADFG

**Funding Recommendations:**

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<td>$49,200.00</td>
</tr>
<tr>
<td>FY06</td>
<td>$51,100.00</td>
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**Abstract:**

This project will refine long-term monitoring of forage species populations in Cook Inlet, an area representative of ecosystem conditions and changes in the northern Gulf of Alaska. Finfish and shellfish will be sampled annually in May with a small-mesh, bottom trawl to determine whether competitive and predatory interactions or different responses to the environment may be favoring the abundance of one species over another. Project funding includes mounting a thermostalinograph on the survey platform to collect surface temperature and salinity data during all fieldwork conducted by the survey vessel throughout the calendar year. Products will include annual reports, presentations at scientific meetings, and a manuscript submission to a peer-reviewed journal. Project data will also be made available to other researchers to facilitate broader ecosystem modeling for the Gulf of Alaska. The study will incorporate community outreach and education involving local science classes in the collection of field data.

**STAC Recommendation:**

GEM has an actual monitoring project here to support. There’s an old and excellent time series to continue and upgrade. It concerns once commercially important animals (pink shrimp, bottom fish) in a coastal inlet (Kachemak Bay) with well populated (by Alaska standards) shores. The time series shows interannual or, just as likely, interdecadal change in the bottom fauna. Probably the once per year schedule is enough to show interannual changes. The trawling involved does no more habitat harm than a) has long since been done and b) possibly is sustained by current fishing activity, although these points deserve informed review. Station numbers are large enough to generate some statistics and stations are well enough distributed to show aerial variability. The agency that originated the survey cannot justify the resources to sustain it solely as a normal management agency function since stocks of the initial target species, pink shrimp, has declined well below the point of commercial interest. However, providing coastal fishing communities and scientists at management agencies with an early warning of the return of pink shrimp (the possible “crustacean mode” of the ecosystem) would be of considerable value, value that can accrue to GEM’s credit. Agency should be encouraged to do anything practical with the samples to generate better insight as to what drives the shrimp-fish switching. Replace the thermostalinograph with station profiling by means of a SeaCat or similar device, such as a simple, self-contained CTD (e.g., the Seabird model is ca. $8K) lowered at each of the many stations before the trawl is shot. If a weight (30# downrigger ball) is suspended 2 m below the CTD, it can be lowered until the weight hits, giving data from very close to the bottom. Over the station grid as a whole this would give a strong characterization of the system hydrography, much better than any number of surface values. Fund contingent on receipt of revised proposal implementing above recommendations.
Executive Director's Recommendation:
The project meets GEM needs for data that can be used to detect changes in natural resources in the Gulf of Alaska and to develop an understanding of the factors responsible for that change. It also responds to a GEM mandate to leverage funding through partnerships with existing programs and projects, and represents a reasonable division of financial responsibilities between EVOSTC and ADF&G. It will add value to a long-term trawl survey by providing oceanographic data that can be used to understand changes in the trawl catches due to natural forcing. Incorporation of peer review comments could substantially improve the value and quality of the oceanographic data to be collected, so funding is contingent on receipt of a revised proposal that addresses peer reviewer concerns. Fund contingent.
Project: Ben-David-FY04-Transfer of Nutrients from Sea

Project Title: Forecasting Climatic Effects on the Transfer of Nutrients from Sea to Land by Coastal River Otter

Location: Prince William Sound (no field work)

Proposer: Merav Ben-David  Proposer Affiliation: Non-Alaskan University

Lead Agency: NOAA

Funding Recommendations:

FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
Gradual (climatic) or catastrophic (oil spills) events that could change the abundance and distribution of spawning pelagic fishes in the nearshore environment of the Gulf of Alaska (GOA) will likely affect the abundance and behavior of coastal river otters. These changes will reduce transfer of nutrients by otters from sea to land and change landscape heterogeneity and biodiversity of the terrestrial ecosystem. Using the relation between abundance and distribution of fishes and otter abundance and behavior, we propose to develop a model that will forecast changes in landscape heterogeneity of coastal forests along the GOA with projected climate change. Input data will be based on output from climate-ocean-fish interaction models developed through GEM. Output data will be in the form of digital maps describing deposition of N and P along the coast based on the relations between fish and river otters.

STAC Recommendation:
This is a well crafted and thoroughly professional proposal that is unfortunately well ahead of the developmental path established in the Science Plan. In contrast to the Science Plan, the proposal assumes that measures of marine linkages in coastal watersheds are well established and can be used to model the role of MDN in shaping species diversity coastal forests. Although the authors presented a strong case for control of species composition and productivity by the input of marine nutrients to coastal Alaskan watersheds, it assumes that the measures necessary are well establish (C and N) and it does not fully address the fundamental sampling variability issues for measures of marine influences identified in the Invitation. The proposal shows promise of eventually being successful in the area of modeling within the GEM program; however that program area is just being initiated in FY 04 and is not ready to receive this proposal. Do not fund.

Executive Director's Recommendation:
The proposal is promising but premature with respect to GEM modeling needs. The authors are encouraged to get in touch with the GEM Model group in order to understand when such a proposal would be needed in the future. Do not fund.
Project: Berenstein-FY04-Pink Salmon Fry Survival

Project Title: Community Assessment and Implementation Planning Regarding the SEA Model for Pink Salmon Fry Survival

Location: Prince William Sound, Alaska

Proposer: C.A. Berenstein  Proposer Affiliation: Non-Alaskan University

Lead Agency: NOAA

Funding Recommendations:
FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
Early implementation of research has been used by Alaskan fishing communities to turn troubled times into ones of renewal and growth. For Prince William Sound, one counts the revitalization of optimum escapement management at statehood, the engineering development of Bams’ experiments with Turfgrass in incubators, and the use of technology and a systems perspective in the SEA Science Plan. In each case, the resource at the center was pink salmon. Ten years ago, diverse communities focused on pinks: the resource looked to be in trouble. Today, the resource and the communities are in trouble if reduced to indistinguishable commodities. This project responds to the call for an implementation plan for research that protects the resource. The approach draws upon the community resources and traditions that produced past successes. The goal is a plan that will produce a broadly based distinguishing contribution.

STAC Recommendation:
Berenstein et al. propose to establish an infrastructure to address the survival of pink salmon in Prince William Sound. The sampling tool is coded wire tags and it will depend on concurrent physical measurements. Much of the proposal is based on yet to be published results and findings so the veracity of this proposal is questionable. For example, on page 3, it is stated that the connection between fry survival is water temperature for fish and advection for zooplankton but there is no reference for this statement. They will need zooplankton densities and physical parameters but will not be gathering them themselves. High resolution data would be required especially in the spring to address the effects of the fry releases. Their assumption that oceanographers and meteorologists are gaining an understanding of the system and making useable forecasts is not justified. They also ignore the ocean conditions and carrying capacities. The proposal does not contain certain required elements such as bios of the investigators. The budget was not well justified. The Gantt chart is not sufficient. Roles of the PIs are poorly delineated. Funding of this proposal is not recommended.

Executive Director’s Recommendation:
A model of pink salmon fry survival that meets the information needs of the fishing and aquaculture industries in Prince William Sound is in the interest of understanding recovery from the oil spill, and for supporting economic development activities. Unfortunately the proposal did not meet the needs and standards established in the Invitation for Proposals for this modeling activity. Do not fund.
Project: Bird-FY04-Mobile Data Network-Marine Hwy

Project Title: Alaska Marine Highway System Marine Weather and Conditions Mobile Data Network

Location: Prince William Sound and Gulf of Alaska

Proposer: Nancy Bird

Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:

| Year | FY04: $0.00 | FY05: $0.00 | FY06: $0.00 |

Abstract:

Marine weather and sea conditions have been identified as important elements in the GEM program for processes controlling ecosystem interactions, marine-traveler safety, resource agencies, marine-resource industries, and emergency spill-response activities. This project brings together communities, stakeholders, agencies, and technology specialists to expand an existing data and telemetry network in Prince William Sound and the Northern Gulf of Alaska. The Alaska Marine Highway System (AMHS) provides a platform for contributing data to the GEM program, local communities, and industry. We will integrate data-collection systems on AMHS vessels working in Prince William Sound and North Gulf of Alaska, incorporating one vessel each year over a three-year period. We will use varied telemetry methods to maximize data access to AMHS vessels and public in near-real-time reporting systems. The system design has been structured to provide valued information to AMHS operations and end-users through a group effort aimed at building a sustainable network.

STAC Recommendation:

It is proposed to instrument one Alaska Marine Highway ferry in each of three project years to gather weather data on a continuous basis. The proposal fails to say specifically what will be done with this data although the proposal does indicate that the data will be used somehow to improve both short term weather knowledge around PWS and to generate a long-term data set for the variables measured. The short-term products will be made available on the internet. No explicit details of data archiving are offered. Since in reasonably short order gigabytes of data will be accumulating, some serious plan is in order. No meteorologist or oceanographer is associated with the project. For GEM's purposes, careful archival work with products of the present PWS weather network would be more valuable than records from wandering ships. Do not fund.

Executive Director's Recommendation:

See the Executive Director's recommendation on the other proposal from this author. A partnership with OSRI/PWSSC serving the same purposes proposed will be explored through the deferral of the other Bird proposal. The number of substantial technical issues identified during peer review prevent pursuing this proposal at this time. Do not fund.
Project: Bird-FY04-Mobile Data Network-Vessels

Project Title: Alaska Vessels of Opportunity Marine Weather and Conditions Mobile Data Network

Location: Prince William Sound

Proposer: Nancy Bird Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:
FY04: $129,300.00  FY05: $118,500.00  FY06: $119,900.00

Abstract:
We are bringing together communities, stakeholders, agencies, and technology specialists to expand an existing weather network in Prince William Sound (PWS) by incorporating Vessels of Opportunity (VOO). Marine weather and sea conditions are identified as important elements for GEM, marine-traveler safety, resource agencies, marine-resource industries, and emergency spill-response activities. VOO provide a means for contributing data to GEM and PWSSC programs, local communities, and industry. We will integrate data-collection systems on three types of vessels working in PWS; they include small day-cruise vessels in North PWS, a SERVS escort vessel, and a charter vessel operating throughout PWS. These vessels represent different types of operations, travel patterns and user groups. Telemetry methods will be employed to provide near-real-time weather and water-conditions data reporting. System design is focused on providing valued information to vessel operations and end-users and will be coordinated with equivalent efforts on Alaska Marine Highway Vessels.

STAC Recommendation:
This proposal parallels and supplements Bird’s Alaska Marine Highway (AMH) proposal. It is proposed to use ~$110 per year in each project year to prepare four boats operating locally in PWS with mobile weather stations reporting by automated radio. As was the case with the AMHS proposal, this proposal fails to say specifically what will be done with this data although the proposal does indicate that the data will be used somehow to improve both short term weather knowledge around PWS and to generate a long-term data set for the variables measured. No explicit details of data archiving are offered. Since in reasonably short order gigabytes of data will be accumulating, some serious plan is in order. No meteorologist or oceanographer is associated with the project. For GEM’s purposes, careful archival work with products of the present PWS weather network would be more valuable than records from wandering ships. Do not fund.

Executive Director’s Recommendation:
Collecting oceanographic data from vessels of opportunity from a base of operations within Prince William Sound is expected to be a highly cost effective means of detecting changes in the environment that change populations of birds, fish and mammals impacted by the oil spill. A partnership with OSRI/PWSSC appears to offer a promising means of pursuing this low cost data collection method. A number of substantial technical issues identified during peer review need to be resolved before the proposal can proceed. Defer.
Project: Bishop-FY04-Top-down and Bottom-up Processes

Project Title: Trophic Dynamics of Intertidal Soft-Sediment Communities: Interaction between Top-down and Bottom-up Processes (Renewal, Submitted under the BAA)

Location: Southeast Prince William Sound (Orca Inlet) and the Cooper River Delta

Proposer: Mary Anne Bishop

Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:

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Abstract:
Vast expanses of intertidal sand/mudflats serve as a critical link in the food web of nearshore communities along the southcentral Alaska coastline. The rich abundance of benthic invertebrates residing within the sediments of intertidal flats and the large network of subtidal channels that bisect these flats provide a significant prey resource for numerous species of fish, crabs, birds, and marine mammals. One of the largest expanses of intertidal mud/sand flats occurs in the Copper River Delta and southeastern Prince William Sound (Orca Inlet). Here we propose a large-scale field study that examines the physical/chemical and biological factors that limit and/or regulate invertebrate community dynamics. The largely “bottom-up” approach we propose (physical/chemical parameters – phytoplankton/epibenthic production – invertebrate production) is balanced by the largely “top-down” focus of a companion project funded by the Prince William Sound Oil Spill Recovery Institute that examines predator dynamics and assesses their role in invertebrate community dynamics. At the completion of this project (FY 06), the results of both projects will be synthesized and a subset of key physical/chemical parameters will be identified for long-term monitoring.

STAC Recommendation:
This proposal takes advantage of the PWSSC location and complementary funding to develop the “bottom-up” sampling program to match a “top-down” project already in place. The proposed sampling is intensive and reasonably extensive in space and time, and it is therefore comparatively expensive. The concept of understanding trophic dynamics from both ends is certainly attractive, if, in fact, they meet in the middle. The project will establish a baseline of biodiversity in the habitat. Long-term the project will need to address the sustainability of a monitoring program built around helicopter sampling. Fund.

Executive Director’s Recommendation:
The proposal meets an essential GEM objective by continuing research into understanding how to monitor soft sediment nearshore habitats nearby the oil spill affected areas. It is highly leveraged with outside funding and helps develop a desirable partnership with a regional marine lab, PWSSC. Fund.
Project: Bodkin-FY04-Lingering Oil and Sea Otters

Project Title: Lingering Oil and Sea Otters: Pathways of Exposure and Recovery Status (continuation of project 030620)

Location: Prince William Sound

Proposer: James Bodkin  
Proposer Affiliation: DOI

Lead Agency: DOI

Funding Recommendations:

FY04: $134,200.00  
FY05: $26,200.00  
FY06: $6,500.00

Abstract:

Some of the strongest evidence of continuing effects of lingering oil from the Exxon Valdez oil spill comes from long term monitoring of sea otter populations and their exposure to hydrocarbons. Population recovery remained incomplete as of 2002, and individual sea otters continue to exhibit elevated levels of the Cytochrome P450 1A biomarker in areas where lingering oil deposits are most prominent. Work in progress is quantifying home ranges of sea otters at northern Knight Island relative to known intertidal lingering oil deposits, but relocation sampling limits our ability to link foraging behaviors to oiled shorelines. To address the question of where individuals are foraging relative to lingering oil requires data on foraging depths. In 2003 USGS will be instrumenting 20 of the radio-instrumented sea otters at Knight Island with time-depth-recorders. These instruments will provide accurate information on the proportion of each individual foraging that occurs in intertidal habitats, the area where known oil deposits remain, for one full year. Surveys of population size and individual P450 measures will provide continuing information on population trend and individual exposure to lingering oil.

STAC Recommendation:

This is a well thought out proposal for further work on the sea otters around northern Knight Island, Prince William Sound, which are clearly not recovering to their pre-spill numbers. The research plan maps out a clear strategy that will attempt to link biomarker of contaminant exposure, P4501A, with individual behavior, particularly foraging, in contaminated areas of Northern Knight Island. Of particular interest will be the outcome of attempts to link biomarker response in individual animals to their foraging in patches of contaminated prey. This proposal conforms to the strategy of determining if there is a close link between remaining deposits of oil in FWS and population problems of species in the area. While this is a challenging undertaking the investigators have a proven track record with this sort of approach and have shown that they can take the measurements necessary to test the hypotheses. The results are to be prepared for publication in a peer reviewed journal before attendance at the meeting in FY 06. 1. The proposed work is highly relevant to further work on species not recovered from the spill. Therefore, it is responsive to the invitation for FY 04. 2. Technical merit: high. 3. Relevance to management and community involvement is moderate. 4. Qualifications and past performance are both excellent. 5. Recommendation: Fund. Defer pending outcome of November workshop.
Executive Director's Recommendation:
The specific requirements for further work on lingering oil need to be further developed during a workshop to be conducted in November 2003. As identified by the STAC, it is important for the preliminary results of the FY 2003 field season to be considered by legal counsel, EVOS staff, advising scientists and the Trustee Council before decisions on funding are made. The exchange between legal, policy and science people will be reported to the Trustee Council before making decisions on what to do in the summer of 2004, which is the last full field season of data that could be fully analyzed before deciding the path to the re-opener. Defer funding decisions pending the outcome of the November workshop.
Project: Bodkin-FY04-Nearshore Monitoring Decision Process

Project Title: Monitoring in the Nearshore: A Process for Making Reasoned Decisions (close-out of Project 030687)

Location: No field work. Study areas in the Gulf of Alaska

Proposer: James Bodkin

Proposer Affiliation: DOI

Lead Agency: DOI

Funding Recommendations:
FY04:$10,000.00

FY05:

FY06:

Abstract:
Over the past several years, a conceptual framework for the GEM nearshore monitoring program has been developed through a series of workshops. However, details of the proposed monitoring program, e.g. what to sample, where to sample, when to sample and at how many sites, have yet to be determined. In FY 03 we were funded under Project 03687 to outline a process whereby specific alternatives to monitoring are developed and presented to the EVOS Trustee Council for consideration. As part of this process, two key elements are required before reasoned decisions can be made. These are: 1) a comprehensive historical perspective of locations and types of past studies conducted in the nearshore marine communities within Gulf of Alaska, and 2) estimates of costs for each element of a proposed monitoring program. We have developed a GIS database that details available information from past studies of selected nearshore habitats and species in the Gulf of Alaska and provide a visual means of selecting sites based (in part) on the locations for which historical data of interest are available. We also provide cost estimates for specific monitoring plan alternatives and outline several alternative plans that can be accomplished within reasonable budgetary constraints. The products that we will provide are: 1) A GIS database and maps showing the location and types of information available from the nearshore in the Gulf of Alaska; 2) A list of several specific monitoring alternatives that can be conducted within reasonable budgetary constraints; and 3) Cost estimates for proposed tasks to be conducted as part of the nearshore program. Because data compilation and management will not be completed until late in FY03 we are requesting support for close-out of this project in FY 04.

STAC Recommendation:
The proposal completes the process of understanding the data available to guide planning for nearshore monitoring under GEM by providing a report on the activities concluded in FY 03. Fund.

Executive Director's Recommendation:
The proposal provides funding for close-out and reporting of project begun in FY 03. Fund.
Project: Brown-Schwalenberg-FY04-Subsistence & Stewardship Gathering

Project Title: Subsistence and Stewardship Gathering: Fifteen Years After the Spill

Location: Village participants from PWS and Lower Cook Inlet will gather in Anchorage for GEM

Proposer: Patty Brown-Schwalenberg  Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:
FY04: $24,000.00  FY05:  FY06:

Abstract:
This project will support a GEM science symposium in commemoration of the 15th anniversary of the Exxon Valdez oil spill. The symposium will be held in Anchorage during the annual Gathering of Chugach region Tribes but it will include participants from all communities in the oil spill area. The goal of the symposium is to share information and improve communication between holders of traditional and scientific knowledge.

STAC Recommendation:
The proposal is weak in providing any specifics of which scientists will attend, and how they are related to what projects or issues and how the symposium relates to GEM (other than community residents sharing information and communicating with scientists). The proposal does provide for a planning committee that will identify a “well-defined topic (related to subsistence use, TK, and GEM science projects)” as the focus of the agenda. The proposal is weak in its explanation of linkages between the gathering and “GEM studies” (long-term monitoring and ecosystem-based research). PAC should be involved in setting the topic for the symposium, which should not be the 15th anniversary of the oil spill. Proposal should be revised to provide more specifics of how the symposium will be related to GEM. Recommendation: Revised proposal providing more specific focus on GEM is needed. Fund contingent on receipt of revised proposal addressing reviewers concerns.

Executive Director’s Recommendation:
The extent to which the Trustee Council may want to commemorate the fifteenth anniversary of the oil spill has not been determined. Proposal cannot move forward without this determination and a revision that focuses the content more clearly on the GEM program. Defer.
Project: Brown-Schwalenberg-FY04-Tribal Involvement in the GEM Program

Project Title: Tribal Natural Resource Stewardship and Tribal Involvement in the GEM Program

Location: N. Gulf of Alaska, including PWS, Cook Inlet, Kodiak Island, and the Alaska Peninsula

Proposer: Patty Brown-Schwalenberg  Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:
FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
In FY 04, this project will focus on three objectives: (a) continuing coordination between the GEM program and tribal communities, ensuring that scientific goals and traditional/local knowledge is shared, (b) conducting a WisdomKeeper Series for discussing and sharing research and monitoring issues with selected biologists, scientists, elders, and traditional knowledge experts, and (c) providing training opportunities for resource specialists in oil spill communities through development of a training curriculum and providing travel to GEM workshops and scientific symposiums. Do not fund

STAC Recommendation:
EVOS has funded this program for seven years (1995-2001) and is seeking FY04 funds. The solicitation indicated “no new specific community involvement projects are being solicited with the exception noted below.” Exceptions: Small-scale science symposiums for smaller communities and coastal mapping. This proposal seems non-responsive to the solicitation (unless continuing projects are exempt) as it is neither a small-scale science symposium nor a coastal mapping project training curriculum to build technical capabilities of tribal specialists, and joins a larger capacity building grant. At one level, this proposal is responsive and provides assurances that its community involvement recipe of is working well. On another level, the proposal does not provide any details on how it relates to long-term monitoring of specific variables associated with GEM. What have we learned from the ongoing tribal natural resource programs that can be used in GEM? What has been produced from the WisdomKeeper Series that can be applied to long-term monitoring? The community involvement represented in this proposal is not focused on developing long-term monitoring, but is centered on coordination, communication, and training. This may be very appropriate, but it should not be confused with community involvement with specific GEM monitoring projects. There was no formula in the proposal on how this project would work toward identifying community-based monitoring projects that respond to community concerns and work to implement long-term GEM monitoring.

However, one-third of the budget ($60,000) is for a Tribal Natural Resource Program Planner who oversees the EVOS Natural Resource Management and Stewardship Capacity Building Project and works with “tribes to develop means by which western science and TK can be jointly utilized in conducting research and monitoring activities and increase tribal involvement in all aspects of GEM.” $180,000 represents over 7% of annual funding capacity for FY04 (based on $2.5 M funding) Recommendation: Do Not Fund with suggestion that any future proposals need to be more specific toward GEM long-term monitoring goals.
Executive Director's Recommendation:
The report on approaches to community involvement commissioned by the Trustee Council in FY 2003 will not be available until the end of September 2003. The report is expected to provide the basis for a thorough examination of the role of community involvement in the GEM program to be conducted by the Executive Director during FY 2004. Until that examination is complete, funding of community involvement projects will be based on responsiveness to the criteria in the FY 04 Invitation and past and future utility for implementing the GEM program. Based on an evaluation of the Tribal Natural Resource Management Plans produced under past years funding of this project, the lack of community-originated GEM projects resulting from past efforts of this project, the lack of connection to the GEM Science Plan, and the recommendations of the STAC, I cannot support this project. Do not fund.
**Project:** Cokelet-FY04-AK Marine Highway System Ferries

**Project Title:** Biophysical Observation Aboard Alaska Marine Highway Systems Ferries

**Location:** Alaska Coastal Current, Prince William Sound

**Proposer:** Edward Cokelet  
**Proposer Affiliation:** NOAA

**Lead Agency:** ADFG  
**Funding Recommendations:**

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**Abstract:**

The Alaska Coastal Current flows counterclockwise along the edge of the Gulf of Alaska carrying the river runoff, nutrients and plankton that fuel the productive coastal-marine ecosystem. As seen in satellite images, a strong “chlorophyll front” develops in summer between the nutrient-poor region to seaward and a productive region around Kodiak island that extends northward to the Kenai Peninsula. Conventional wisdom predicts that the Gulf ecosystem should not be productive because the average wind pattern favors downwelling oceanic conditions that fail to restore nutrients to the sunlit upper layers. The chlorophyll front presents a natural study area over which low- and high-productivity regions lie in close proximity. The Alaska Marine Highway System ferry M/V Tustumena crosses this front over 280 times each year. We propose to instrument the Tustumena to measure physical and biological oceanographic parameters across the Alaska Coastal Current and in Prince William Sound. This will begin a GEM oceanographic monitoring program in the Gulf that will lead to understanding nutrient replenishment and document ecosystem trends for years to come.

**STAC Recommendation:**

This is an excellent response to the GEM request for proposals to use State of Alaska ferries as platforms for collecting environmental observations. It requests a major commitment of funds, however the returns are commensurate with the costs. It should generate a working, robust system and a suite of data from tracks of maximum interest in the GEM target region, the oil spill trajectory. The M/V Tustumena is selected because it makes the maximum number of crossings each year of the ACC. The routes (mostly Kodiak-Homer and Kodiak-Seward) will cross the coastal to oceanic chlorophyll front and salinity gradient. It is proposed to follow, by and large, the recommendations of the PICES 2002 report on engine room instrumentation for VOS. A rather full installation is proposed for the ship’s April yard period in 2004. A thermostalinograph to sample at the ship’s sea chest is to be purchased and installed and backed up by hull conductance thermometry. Cokelet et al. propose to loan the project fluorometry, transmissometry, colored dissolved matter spectrometry (CDOM) and automated nitrate analysis facilities in the first year, replacing them with project-purchased sensors in later years. Cokelet et al. give evidence of experience dealing with ship operators concerning such installations, a key aspect of such projects worldwide. The STAC recommends that the investigators must accommodate the needs of the AMHS regarding in-ship communication. The proposers need to investigate the status of the meteorologic observations collected by the vessel A wireless remote system is needed to collect these data. Two revisions are required; the real-time communication and costs should be eliminated from the proposal. The ADCP should be eliminated from this proposal because the information received is not proportional to the cost required. Fund contingent upon revised proposal with reduced instrumentation described above.
Executive Director's Recommendation:
Agreement in principle has been reached with the AMHS engineering and operations staff concerned and a memorandum of agreement on the specifics of the project is in process. This agreement and project are historic milestones that provide for highly cost effective monitoring of the coastal environment of Alaska. Fund contingent on receipt of revised proposal addressing STAC recommendations.
Project: Cooper-FY04-Community-Based Sampling

Project Title: Community-Based Sampling of Watershed-Based and Marine-Derived Nutrients, Submitted under the BAA

Location: Kachemak Bay and Anchor, Kasilof and Kenai River watersheds

Proposer: Joel Cooper
Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:
FY04: $102,512.00 FY05: $85,957.50 FY06: $96,942.30

Abstract:
In Southcentral Alaska, healthy watersheds support the region's economic, social and cultural well-being. Cook Inlet Keeper's community-based water quality monitoring program has proved to be an efficient and cost-effective way to collect important baseline data and increase public involvement in natural resource management. Keeper will coordinate with other groups conducting nutrient sampling throughout Southcentral Alaska and expand its community-based monitoring program to include watershed-based and marine-derived nutrient sampling to test the following hypotheses:
1) Certain nutrients, like ammonium, are useful proxies for determining levels of marine-derived nutrients in coastal watersheds; 2) Marine-derived nutrient levels in aquatic and riparian food webs vary seasonally related to salmon influx; 3) Community-based sampling of watershed-based and marine-derived nutrients is an efficient and cost-effective way to meet GEM research goals, increase public understanding of public resources, and promote sound resource management.

STAC Recommendation:
This proposal is highly responsive to the Invitation. It proposes to expand a well established volunteer, community-based monitoring program (dating from 1996) to include watershed-based and marine-derived nutrient sampling to test three important but simple hypotheses. The proposal is well coordinated with other watershed projects and GEM proposals in the area (Mazumder, Walker-Heintz, EPA/DEC Citizens Environmental Monitoring Program). The program is nearly one-half funded from other sources. The program incorporates an ongoing community-based monitoring program that presumably reduces costs and strives to collect data toward GEM program hypotheses and questions. STAC recommends that authors submit a letter agreeing to implement recommendations of peer reviewers regarding sampling. The proposers should add a no-cost objective (in the letter) that expands the role of this project in coordinating other watershed projects. A watershed workshop will be held at the January 2005 GEM meeting. At that time the PIs on all watershed projects will present an up-to-date report and participate in comparison and evaluation of methods. Under the added role of coordinator, the PI will organize and facilitate the workshop. Expenses for the workshop, except PI's salary, will be paid separately by the GEM program. Fund contingent upon receipt of letter accepting these conditions.
Executive Director's Recommendation:
The project is a good beginning for establishing a watershed sampling program for GEM that should be highly cost effective. It is community-based and well organized as a network of volunteers backed by scientists and a well equipped laboratory. Fund contingent on receipt of letter addressing STAC recommendations.
Project:  
Couvillion-FY04-Coordinated Coastal Mapping

Project Title:  Coordinated Coastal Mapping

Location:  Entire GEM study area

Proposer:  Analie Couvillion  
Proposer Affiliation:  NGO

Lead Agency:  NOAA

Funding Recommendations:  
FY04: $78,500.00  
FY05: $0.00  
FY06: $0.00

Abstract:
Interest in shoreline mapping within the oil spill area has increased in recent years, with the result that several shoreline mapping projects have been developed as pilot projects. In March, 2003, the EVOS Trustee Council convened a workshop with over twenty groups involved in shoreline mapping. The groups agreed to coordinate mapping efforts. This proposal evolved from the recommendations of that workshop. It solicits support for coordinating shoreline mapping efforts throughout the oil spill area. This proposal addresses the need for coordination in coastal mapping, rather than for collecting and ground-truthing new information (those specific work tasks will be developed and submitted by others). The key expected result from a well coordinated coastal mapping effort is a unified, seamless, ShoreZone map covering the entire GEM study area that will be electronically available to researchers, local governments, industry, and the general public.

STAC Recommendation:
The proposal responds to community involvement and resource management applications (integration of Tribal Natural Resource Programs [TNRP] with GEM). The proposal seeks funds to continue a formula of coordinating tribal participation (meetings/workshops) with EVOS, conducting “WisdomKeeper Series” symposiums for information exchange between scientists and resource users, adds the development of This project proposes to hire a Coordinator for Coastal Mapping that would be housed at The Nature Conservancy. The proposal is extremely well written and clearly spells out what the coordinator would do. This proposal is in direct response to a strong recommendation from the EVOS-sponsored Shoreline Mapping Workshop that was held in Anchorage in March 2003. I facilitated that workshop as a representative of EVOS. This proposal is not to do any shoreline mapping or to collect data, but rather it is to have one person who will coordinate all the projects that are collecting data. The problems and gaps that were discovered in the current process include the need for compatibility among projects, need for standard sampling protocol, need for development of strategy to fill physical gaps in coverage, plan for data management, and produce a unified ShoreZone map of the GEM area. The workshop strongly recommended that a Coordinator be hired to oversee these vital components. There was much discussion and concern that several projects are using a form of shoreline mapping, but that the results would not be compatible. The Shoreline Workshop specifically recommended that the coordinator position be housed in TNC. This position and proposal were not the idea or suggestion of TNC, but rather of the other workshop components. However, I impressed with the PIs credentials and she would oversee the project and the Coordinator.
This project specifically addresses the Invitation Part A2 – Nearshore Synthesis and B – Data Management and IT. The technical merits of this proposal are excellent as it specifically addresses the needs, objectives and methods. The position would not be totally funded by EVOS, but rather TNC identifies matching funds for part of the salary for each of three years. Of course, the Workshop recommendation was that EVOS help support this project for the first year and other funding to pay for it in the remaining years. Fund.

Executive Director's Recommendation:
In March, 2003, the EVOS Trustee Council convened a workshop with over twenty groups involved in shoreline mapping. The groups agreed to coordinate mapping efforts. While this proposal is responsive to the recommendations of that workshop, more matching funding from other participants was expected. Nonetheless it is important to GEM objectives to move forward on this project. Fund for FY 04 and invite a proposal next year for FY 05 and FY 06 that increases the financial contributions of other participants.
Project: DeLorenzo-FY04-Youth Area Watch

Project Title: Youth Area Watch

Location: PWS, Kenai Peninsula

Proposer: Richard DeLorenzo

Proposer Affiliation: Local Government

Lead Agency: ADFG

Funding Recommendations:
FY04: $0.00
FY05: $0.00
FY06: $0.00

Abstract:
This project links students in the oil spill impacted area with research and monitoring projects funded by the Trustee Council and outside agencies. Youth conduct research identified and delegated by principal investigators who have indicated interest in working with students. The project involves students in the acquisition and monitoring of oceanographic and meteorological data over time. Students also develop a local restoration project, which provides them the skills to participate in community-based science. Youth Area Watch fosters long-term commitment to the goals set out in the restoration plan and is a positive community investment in that process. Participating communities in FY 04-06 will be Chenega Bay, Cordova, Seward, Tatitlek, Valdez and Whittier.

STAC Recommendation:
The proposal is not responsive to the invitation even though it does seek community involvement. The proposal is weak in providing any linkages to GEM long-term-monitoring program. This past restoration projects may or may not be appropriate for GEM monitoring. The proposal seems to contain a large amount of text from the previous restoration-oriented youth area watch proposals with occasional insertions of “GEM.” In part, the program is dependent on principal investigators who are interested in working with students rather than focused on GEM goals. Furthermore, there is no indication of whether the student developed projects will relate to GEM. In fact, the proposal states that “students also develop a local restoration project…” It may be time to rework this Youth Area Watch project to make it more responsive to GEM goals and objectives. Recommendation: Do Not Fund.

Executive Director’s Recommendation:
The report on approaches to community involvement commissioned by the Trustee Council in FY 2003 will not be available until the end of September 2003. The report is expected to provide the basis for a thorough examination of the role of community involvement in the GEM program to be conducted by the Executive Director during FY 2004. Until that examination is complete funding of community involvement projects will be based on responsiveness to the criteria in the FY 04 Invitation and past and future utility for implementing the GEM program. Unlike the Kodiak Youth Area Watch proposal, the PWS YAW proposal is not well grounded in the principles of the GEM program and shows a lack of understanding of the concepts of the need for community involvement in long-term monitoring programs. Based on the lack of connection to the GEM Science Plan, and the recommendations of the STAC, I cannot support this project. Following a recommendation of the PAC, the PI is invited to join the Executive Director during FY 2004 in exploring ways to re-constitute the PWS YAW program to be responsive to the GEM program, consistent with emerging community involvement guidelines. Do not fund.

Project: Devens-FY04-PWSRCAC-EVOS long term program

Project Title: PWSRCAC - EVOS Long Term Environmental Monitoring Program - Submitted under BAA

Location: Prince William Sound, Kodiak, Kenai Peninsula

Proposer: John Devens  Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:

FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
The Prince William Sound Regional Citizens' Advisory Council/Exxon Valdez Oil Spill Trustee Council Long Term Environmental Monitoring Program provides essential long term baseline measurements of hydrocarbon levels and sources at program sites within areas of the Prince William Sound, Kenai Peninsula, Kodiak, and Gulf of Alaska. The program objective is to provide a program for the collection of baseline data in mussel tissue and subtidal sediments that can be used to determine impacts of oil sources on the ecosystem. This program will provide an improved link to recovery status and greater efficiency in hydrocarbon sampling and analysis that has been on going since 1993 under the auspices of PWSRCAC.

STAC Recommendation:
Project was funded in FY 03 to evaluate potential of incorporation of existing PWS RCAC monitoring sites into the GEM program. Partnership with RCAC for nearshore sampling is highly desirable and advantageous to both organizations. Future funding is based on evaluation of FY 03 results in terms of the number and location of sites relevant to the GEM program. Do not fund.

Executive Director's Recommendation:
An evaluation of the work conducted during FY 03 is needed in order to fully define how PWSRCAC and GEM can best collaborate on developing a long term nearshore monitoring program. PWSRCAC staff are invited to join with EVOSTC staff and subcommittees to develop this relation during FY 2004. Do not fund.
Project:  Eckert-FY04-Natural Variability in the Nearshore

Project Title:  A Synthesis of Natural Variability in the Neashore: Can We Detect Change?

Location:  Alaska (Synthesis)

Proposer:  Ginney Eckert  Proposer Affiliation:  Alaskan University

Lead Agency:  NOAA

Funding Recommendations:

FY04: $36,300.00  FY05: $17,500.00  FY06:

Abstract:
One of the primary goals of the GEM program is to detect anthropogenic changes within the four focal habitats in the Gulf of Alaska, however natural variability in these systems can be so high that it prevents detection of human-induced effects. The goal of this proposal is to synthesize existing data to identify, within the nearshore habitat, environments and species that have less natural variability so that these variables can be included in the GEM monitoring plan. Data will be synthesized from the Gulf of Alaska and across a broad range of geographic areas to identify general characteristics that predict lower levels of natural variability in nearshore marine populations. The principal investigator is well suited to conduct this analysis because she was a coauthor of the current GEM nearshore monitoring plan, and she has conducted extensive analyses of natural population variability in nearshore organisms.

STAC Recommendation:
This proposal provides a badly needed integrative service. The right person doing the right thing. Fund.

Executive Director’s Recommendation:
The project provides synthesis in an important habitat type, the nearshore, at a critical time. The nearshore is closer to establishing a comprehensive monitoring program than other habitat types, so synthesis is particularly important in the nearshore habitat type. Fund.
Project: Fall-FY04-Status of Subsistence Uses

Project Title: Update of the Status of Subsistence Uses in Exxon Valdez Oil Spill Area Communities

Location: Prince William Sound, Kodiak, Kenai Peninsula, and Alaska Peninsula

Proposer: James Fall

Proposer Affiliation: ADFG

Lead Agency: ADFG

Funding Recommendations:

FY04: $298,700.00  FY05: $25,600.00  FY06:

Abstract:
The project will provide information for an update of the status of subsistence uses in the Exxon Valdez oil spill area. Subsistence uses are a vital natural resource service that was injured by the spill and has not recovered. The project will be a partnership between the Alaska Department of Fish and Game, the Chugach Regional Resources Commission, the Kodiak Area Native Association, and the Bristol Bay Native Association. In early 2004 local research assistants and department researchers will interview face-to-face approximately 760 households in 14 communities about their subsistence activities in 2003. The questionnaire will be similar to that used in previous rounds of interviews. A planning workshop and data review workshop will be held involving study community representatives. A database with study findings and a final report will be produced. Training of local researchers and capacity building are key goals of the project.

STAC Recommendation:
The last subsistence survey in spill affected communities was 1998. The project proposes to survey 760 HH in 15 communities related to 2003 subsistence activities. The project would be a collaborative effort between ADF&G, Division of Subsistence, CRRC, KANA, BBNA, and the communities. A key project goal is training local researchers in survey administration and data entry and review. The project design, including goals, sampling and survey methods, data analysis and statistical methods, are sound. The proposal incorporates community involvement in most stages of the project (except data analysis). The schedule is reasonable and the qualifications of the ADF&G Division of Subsistence are high. The proposal is responsive to the invitation (community involvement) and specifically responds to invited proposals under Lingering Oil Effects (collect, analyze and report information about current subsistence uses in a subset of oil spill area communities using methodology that is comparable with previous research results). Fall (ADF&G Division of Subsistence) was the PI for most of the previous research. The proposal is consistent with GEM strategies (incorporate community involvement and local knowledge) and goals (detect change, provide information to facilitate understanding of causes of change). The proposed project is part of a long-term monitoring of subsistence activities in the communities affected by the oil spill and includes both restoration and monitoring goals. Fund

Executive Director’s Recommendation:
In the last survey of subsistence uses in 1998 it was found that this injured service had not recovered to pre-spill levels. A follow-up survey to assess the status of recovery is needed. Fund.
Project:  Finney-FY04-Marine-terrestrial Linkages

Project Title:  Marine-terrestrial Linkages in northern GOA Watersheds: Towards Monitoring the effects of Anadromous Marine-derived Nutrients on Biological Production

Location:  Karluk Lake, Spiridon Lake, Kodiak, Alaska

Proposer:  Bruce Finney  
Proposer Affiliation:  Alaskan University

Lead Agency:  NOAA

Funding Recommendations:

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Abstract:
The proposed project is a comprehensive study examining the role of marine-derived nutrients (MDNs) in the productivity of a sockeye nursery lake ecosystem. The research plan integrates studies of nutrient cycling, primary productivity, zooplankton dynamics, and juvenile sockeye abundance and growth, within a framework of stable isotope natural abundance. The study sites are an ideal pair, very similar in characteristics except for access by spawning salmon (anadromous Karluk Lake and control Spiridon Lake). The project will take advantage of the wealth of previous research including relatively long-term limnological data for both sites. Based on previous work, signals from MDNs are anticipated to be relatively strong, which will help elucidate nutrient pathways. The research design is the first to utilize detailed vertical and temporal sampling of the water column, coupled with measurements of rates of primary productivity, and fully integrated stable isotope analyses, with contemporaneous sampling in a well-matched pair of salmon and control lakes. The overall goal of this project is to provide the framework for designing monitoring projects to detect changes in marine terrestrial linkages in Gulf of Alaska sockeye

STAC Recommendation:
This is a proposal to partner with a resource management agency (see Honnold) to understand the influence of marine derived nutrients in a comparison of two watersheds. This proposal covers project design, stable isotope measures and nitrate chemistry, and the partner proposal covers limnology, logistics, and sampling personnel. The proposals together evaluate several indicators of marine linkages across species and two distinct watersheds in close cooperation with a natural resource management agency. The proposal has several unique advantages; 1) a pair of similar lakes with and without apparent marine connections, 2) one lake has very long time series of data on fish abundance and stable isotope levels, 3) both lakes have good baseline data on limnological properties such as nutrients, primary productivity and euphotic volume, and 4) one lake has authoritative peer reviewed publications by one of the PIs that support the basic concepts of the proposal. The proposal would develop a strong partnership between university based researchers and a state agency (ADF&G) that would provide information useful to natural resource managers. State agency has close links to the local community and other government agencies. Prospects are good for learning how to measure and interpret linkages of coastal (oligotrophic) lake systems to the marine environment in the Gulf of Alaska in ways that will have practical applications of very large potential significance. Fund.
Executive Director's Recommendation:
Proposal provides an important comparison between salmon and non-salmon bearing lakes in the oil spill affected area that is important to establishing GEM watershed monitoring. In order to move forward a letter from the PI's is required agreeing to participate in a watershed workshop will be held at the January 2005 GEM meeting, and to present an up-to-date report on progress and participate in comparison and evaluation of methods. Fund contingent.
Project: Foster-FY04-Community Science Dialogues

Project Title: Community Science Dialogues

Location: Lower Cook Inlet and Kachemak Bay

Proposer: Rick Foster  Proposer Affiliation: ADFG

Lead Agency: ADFG

Funding Recommendations:

FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
The effective stewardship of resources requires access to reliable information. The communities of Port Graham and Seldovia have demonstrated a desire to learn more about research occurring in their region. Kachemak Bay Research Reserve (KBRR) will partner with these villages to provide Community Science Dialogues (Dialogues). The Dialogues will be based on interests of the Villages and work of scientists researching various aspects of the oceanic, benthic, atmospheric, and watersheds of Kachemak Bay, Lower Cook Inlet, and Gulf of Alaska. Dialogues will build on the successful KBRR Science Seminar Series. Dialogues will feature a scientist and a local holder of traditional ecological knowledge on the subject, will introduce Port Graham’s Community Research Protocols & Guidelines, and include opportunity for proposing and planning related community-based research projects. Three different formats will be evaluated with design and presentation protocols developed to aid scientists “inform and involve” communities in dialogue and project planning.

STAC Recommendation:
Although the proposal is responsive to the invitation (small-scale science symposium/community involvement) and is consistent with one of the GEM strategies (incorporate community involvement and local knowledge), it falls short in a number of key areas. Methods are too narrow, and would need to be revised to expand the independent variable(s) beyond the process by which the scientists are chosen and prepared, to evaluate how variation in the dialogue process itself. Although the “Community Science Dialogues” method has been ongoing for a decade, the revision needs to present information on what has or what has not been effective. Recommendation: Do not fund.

Executive Director’s Recommendation:
The proposal did not establish the need for its activities in a compelling way, and the methodological difficulties identified by the peer review are substantial. Do not fund.
**Project:** Guay-FY04-Assessing Watershed

**Project Title:** Assessing Watershed Source of Metals to Coastal Environments in the vicinity of Kachemak Bay

**Location:** Kachemak Bay, southern Kenai Peninsula

**Proposer:** Christopher Guay  
**Proposer Affiliation:** ADFG

**Lead Agency:** ADFG

**Funding Recommendations:**

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**Abstract:**
Samples of water, suspended particulates, surface sediments, and benthic organisms will be collected from watershed/estuary systems in the vicinity of Kachemak Bay. Samples will be collected over a two-year period starting in December 2003. Much of the sampling will be conducted by residents of Seldovia, Port Graham, and Nanwalek after training at the beginning of the project in October 2003. The samples will be analyzed for a suite of metals (As, Cd, Co, Cr, Cu, Mn, Ni, Pb, Zn) by ICPMS, and the data will be used to address the following hypotheses related to the cycling of metals in these environments:
1. The watersheds are a significant source of metals to adjacent coastal areas.
2. Contributions of metals by marine source waters are small relative to inputs of metals from the watersheds.
3. Metals accumulate in sediments and biota in the coastal areas adjacent to the watersheds.

**STAC Recommendation:**
This proposes to sample for naturally occurring metals in water and sediments in Kachemak Bay and the Kenai Peninsula. There are indications that metals may be accumulating in seafood consumed in this region. This is a well-written proposal that has methods clearly laid out and has a good field sampling plan covering time and space. Additionally, this proposal directly involves local communities with collecting the samples and would work closely with other separately funded programs. The measurement of terrestrial-marine linkages is ultimately of interest to the GEM program because of the need to understand the basis for changes in production of birds, fish and mammals in the oil spill affected areas. The proposal does not address terrestrial marine linkages in the long-term shed light on production or productivity in the GEM area. As such the proposal is not responsive to the Invitation for FY04. The Invitation (pp. 11-12) specifically asked for programs to identify, evaluate and implement sampling strategies for marine signals. This proposal is for a specific sampling strategy for specific freshwater signals (metals) that have not yet been identified as something that needs to be monitored. While the sample design of the project is good, it makes the project extremely expensive. The proposed project is further ahead than GEM is at this moment and GEM is not yet prepared to fund a full-scale sample plan without more investigation into the design of the plan on a GEM region-wide scale. This is not something that would lead to a long-term monitoring project for GEM. This aspect makes the proposal unfundable at this time. Do not fund.

**Executive Director’s Recommendation:**
Although the topic of heavy metal contamination in coastal sea foods is of interest to coastal communities, the proposal did not establish a compelling need for this investigation in relation to the Invitation for Proposals. Do not fund.

*Gulf of Alaska Ecosystem Monitoring, Draft FY 2004 Work Plan 8/22/2003*
Project: Heintz-FY04-Energy Allocation

Project Title: The Influence of Adult Salmon Carcasses on Energy Allocation in Juvenile Salmonids

Location: Kenai Peninsula

Proposer: Ron Heintz
Proposer Affiliation: NOAA

Lead Agency: NOAA

Funding Recommendations:
FY04: $48,400.00
FY05: $42,300.00
FY06: $14,100.00

Abstract:
This proposal seeks to examine the effect of adult salmon carcasses on the energy allocation in juvenile salmon. Juvenile salmon allocate energy between the competing demands of growth and energy storage to minimize exposure to predation while forestalling starvation over winter. This proposal will contrast annual energy dynamics in age-0 Dolly Varden from Kenai Peninsula streams with and without salmon carcasses present. Fatty acid analysis will be used to identify marine signal strength and persistence in the lipids of the juveniles. The investigators will combine proximate and lipid class analyses to determine the proportions of their total energy allocated to storage versus structure, and examine how seasonal variation in allocation differs among streams and carcass densities. They also will examine the influence of carcasses on growth rate and the relation between growth and energy allocation.

STAC Recommendation:
Responds to watershed invitation. Provides a novel approach to measuring the effects of MDN on resident freshwater species and juvenile salmon in partnership with other proposal (Walker). The GEM program identifies a need for indicators that show how and when to measure marine-related biological production in watersheds. Results from this study will provide additional information about the efficacy of changes in the intensity of the marine signal and lipid reserves between fall and spring as a tool for monitoring the impacts of marine nutrients on the production and survival of juvenile. Potential direct application to fishery management through understanding of factors contributing to year class strength in resident species (growth and over winter survival). Such a tool would have wide application for management of salmon and salmon spawning habitat in the state. Fund contingent.

Executive Director's Recommendation:
Proposal provides a desirable resource management dimension to the watershed study of Walker, however outstanding reports from the PI need to be submitted. In addition in order to move forward a letter from the PI's is required agreeing to participate in a watershed workshop will be held at the January 2005 GEM meeting, and to present an up-to-date report on progress and participate in comparison and evaluation of methods. Fund contingent on receipt of letter and acceptable review drafts of all outstanding reports.
**Project:** Honnold-FY04-Marine-derived Nutrients on Sockeye Salmon

**Project Title:** Monitoring the Effects of Anadromous Marine-derived Nutrients on Sockeye Salmon

**Location:** Kodiak Island, Alaska

**Proposer:** Steve Honnold  
**Proposer Affiliation:** ADFG

**Lead Agency:** ADFG

**Funding Recommendations:**

*FY04:* $83,200.00  
*FY05:* $82,400.00  
*FY06:* $86,800.00

**Abstract:**

We propose to comprehensively examine the role of MDN in sockeye salmon nursery lake ecosystem productivity by integrating studies of nutrient cycling, primary productivity, zooplankton dynamics, and juvenile sockeye abundance and growth, within a framework of stable isotope natural abundance. The project will take advantage of previous research including relatively long-term limnological data for Karluk Lake on Kodiak Island. We will utilize detailed vertical and temporal sampling of the water column, coupled with measurements of rates of primary productivity, and fully integrated stable isotope analyses, with contemporaneous sampling in a well matched pair of salmon (Karluk) and control (Spiridon) lakes. We propose to determine the extent to which the functioning and productivity of watersheds depends on marine-nutrient inputs and how this marine-terrestrial linkage can be better detected and understood. The overall goal of this project is to provide the framework for designing monitoring projects to detect changes in marine terrestrial linkages in Gulf of Alaska sockeye watersheds.

**STAC Recommendation:**

This proposal is from a state agency to partner with university based expertise (see Finney) to understand the influence of marine derived nutrients in a comparison of two watersheds. This proposal covers limnology, logistics, and sampling personnel and the university proposal covers overall project design, stable isotope measures and nitrate chemistry. The proposals together evaluate several indicators of marine linkages across species and two distinct watersheds in close cooperation with a natural resource management agency. The proposal has several unique advantages; 1) a pair of similar lakes with and without apparent marine connections, 2) one lake has very long time series of data on fish abundance and stable isotope levels, 3) both lakes have good baseline data on limnological properties such as nutrients, primary productivity and euphotic volume, and 4) one lake has authoritative peer reviewed publications by one of the PTs that support the basic concepts of the proposal. The proposal would develop a strong partnership between university based researchers and a state agency (ADF&G) that would provide information useful to natural resource managers. State agency has close links to the local community and other government agencies. Prospects are good for learning how to measure and interpret linkages of coastal (oligotrophic) lake systems to the marine environment in the Gulf of Alaska in ways that will have practical applications of very large potential significance. Fund.
Executive Director’s Recommendation:
Proposal provides unimportant comparison between salmon and non-salmon bearing lakes in the oil spill affected area that is important to establishing GEM watershed monitoring. In order to move forward a letter from the PI is required agreeing to participate in a watershed workshop, which will be held at the January 2005 GEM meeting, and to present an up-to-date report on progress and participate in comparison and evaluation of methods. Fund contingent.
Project: Irons-FY04-Bird Abundance in PWS

Project Title: Surveys to Monitor Marine Bird Abundance in Prince William Sound during Winter and Summer 2004

Location: Prince William Sound, Alaska

Proposer: David Irons  Proposer Affiliation: DOI

Lead Agency: DOI

Funding Recommendations:

FY04: $175,518.00  FY05:  FY06:

Abstract:
We propose to conduct small boat surveys to monitor abundance of marine birds and sea otters (Enhydra lutris) in Prince William Sound, Alaska during March and July 2004. Seven previous surveys have monitored population trends for >65 bird and 8 marine mammal species in Prince William Sound after the Exxon Valdez oil spill. We will use data collected in 2004 to examine trends from summer 1989-2004 and from winter 1990-2004 by determining whether populations in the oiled zone changed at the same rate as those in the unoiled zone. We will also examine overall population trends for the Sound from 1989-2004. Due to the lack of data prior to the Exxon Valdez oil spill, continued monitoring of marine birds and sea otters is needed to determine whether populations injured by the spill are recovering. Data collected in 2000 indicated that bald eagles (Haliaeetus leucocephalus) are increasing in winter and summer throughout Prince William Sound, harlequin ducks (Histrionicus histrionicus) are increasing in the oiled area in winter, and black oystercatchers are increasing throughout Prince William Sound in summer. Numbers of all other injured species are either not changing or are declining in the oiled area. Common loons (Gavia immer), cormorants (Phalacrocorax spp.), and common murres (Uria aalge) are showing no trend in the oiled area; pigeon guillemots (Cepphus columba) and marbled murrelets (Brachyramphus marmoratus) are declining in the oiled areas of Prince William Sound and Kittlitz’s Murrelet (Brachyramphus brevirostris) is declining throughout Prince William Sound. Results of these surveys up through 1998 have been published by Irons et al. (2000) and Lance et al. 2001). Analyses of these survey data are the only ongoing means to evaluate the recovery of most of these injured species. A Final Report will be written upon completion of the project that will address population status of species observed during the survey.

STAC Recommendation:
This proposal would continue a systematic survey by boat of birds and sea otters in PWS. There is an established standard methodology for these surveys. These surveys go back to the mid-1970s and provide some of the few quantitative data sets for animal populations from before the spill. Starting in the mid-1990s these surveys were carried out every 3 years and the present proposal is for continuation of this series. Aside from their value in understanding whether post-spill populations of sea birds in PWS are attaining pre-spill levels, the survey results now constitute one of the few long-term data sets for sea birds in the northern GOA. It also includes many species that are not otherwise measured in other censuses of sea birds. The proposed work therefore constitutes a valuable addition to the FY04 work plan both as follow up on the spill injury to birds, which was extensive, but also as a valuable data set for addressing GEM goals relative to shifting animal populations. Fund.
Executive Director's Recommendation:
The project adds another point in an increasingly valuable time series of sea bird population abundance in the areas of the spill. The need to survey bird populations to assess recovery status is well justified, as several injured bird species have not shown signs of recovery since the spill. Fund
**Project:** Irvine-FY04-Lingering Oil on Boulder-Armored Beaches

**Project Title:** Monitoring Lingering Oil on Boulder-Armored Beaches in the Gulf of Alaska

**Location:** Kenai Peninsula, Alaska Peninsula

**Proposer:** Gail Irvine  
**Proposer Affiliation:** DOI  
**Lead Agency:** DOI

**Funding Recommendations:**
- **FY04:** $71,700.00
- **FY05:** $71,200.00
- **FY06:** $0.00

**Abstract:**
We propose to continue monitoring the persistence and degradation of oil at boulder-armored Gulf of Alaska beaches that have been studied since 1992 and investigate how stability of the boulder armors affects both persistence and weathering. These sites were resampled in 1994 and 1999; 2004 would be the next targeted study date. The continued contamination of these sites, arrayed along the Katmai and Kenai Fjords National Park coasts, compromises the aesthetics and wilderness values of some of the most pristine wilderness-coast parklands in the world. The lack of weathering of much of the oil means that the oil, if released, could pose a risk to biota. Subsurface oil persisted at these sites in 1999 with little change in extent or chemical weathering since 1994. Data also suggests that the boulder armors are largely stable. We propose to assess changes in surface and subsurface oiling, chemical weathering of the oil, and stability of the boulder armors. Results will be published.

**STAC Recommendation:**
This proposal directly addresses the question of the persistence of oil on armored gravel beaches outside of PWS 15 years after the spill. This survey has been carried out several times at various intervals after the spill. It is important to extend this study one more time to understand the larger geographic picture of oil persistence subsurface in beaches long after the floating oil and oil on beaches has disappeared from view. The extent and degree of oil weathering are both addressed. The reviewer had some suggestions for changes in the proposed work, particularly in the area of geomorphology, which should be addressed before the work is carried out in FY 04. The work also needs to be coordinated with and made consistent with shoreline mapping efforts. Defer and fund contingent on publication of results of past studies and receipt of revised proposal addressing peer reviewer concerns and the recommendation of the November 2003 work shop on lingering oil.

**Executive Director’s Recommendation:**
The specific requirements for further work on lingering oil need to be further developed during a workshop to be conducted in November 2003, and publication of results of past work in this area are needed before this project can proceed. Defer.
Project: Jack-FY04-Sea Otter Abundance

Project Title: Unalaska, Ouzinkie, Kamishak Bay and Kachemak Bay Local Sea Otter Abundance Trend Survey Project

Location:

Proposer: Lianna Jack

Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:

FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
Sea otters (Enhydra lutis) west of Cook Inlet, including the Barren Islands, have been designated as a candidate species under the Endangered Species Act. This determination is based on a limited number of aerial surveys. This limited data provides no indication of current sea otter population trend, whether sea otter populations have stabilized, are increasing or are decreasing. The Alaska Sea Otter and Steller Sea Lion Commission (TASSC) proposes annual sea otter trend surveys for three years to be conducted in four areas within Southwest Alaska. Specifically, we propose to work with the Tribal Governments of Unalaska and Ouzinkie, and to monitor Kamishak and Kachemak Bays to determine sea otter population trend.

STAC Recommendation:
This proposal seeks funding to conduct annual sea otter trend surveys for three years in four areas within southwest Alaska: Unalaska, Ouzinkie, Kamishak Bay, and Kachemak Bay. Sea otters west of Cook Inlet, including the Barren Islands, have been designated as a candidate species under the Endangered Species Act. The determination was based on a limited number of aerial surveys by the U.S. Fish and Wildlife Service (USFWS). The project is a collaboration of Alaska Native communities under the direction of the Alaska Sea Otter and Steller Sea Lion Commission. The proposed monitoring will utilize local expertise through implementation of skiff surveys in four areas. The proposal is not clear on how the monitoring work will complement ongoing and future surveys conducted by the USFWS. The proposal needs to be enhanced to reflect cooperation with the federal management agency. Also, the proposal needs to reflect what, if any, cost sharing the USFWS may provide to help complete the project. The project is non-responsive to the Invitation, is largely out of the GEM area and does not coordinate with the federal agencies. Do not fund.

Executive Director’s Recommendation:
The proposal calls for work in areas well outside the oil spill affected area, and on an injured species, the sea otter, in areas that are well outside the locales now demonstrating lingering oil effects. Such a survey in the oil spill affected areas may be indicated once long-term monitoring objectives have been established for the nearshore habitat type, however it is not responsive to our needs at this time. Do not fund.
Project: Kiefer-FY04-Alaskan Groundfish Feeding Ecology

Project Title: Alaskan Groundfish feeding Ecology: An OBIS Information System

Location: GOA, Aleutian Islands, Bering Sea

Proposer: Dale Kiefer

Proposer Affiliation: Private Enterprise

Lead Agency: NOAA

Funding Recommendations:
FY04: $80,900.00
FY05: 
FY06: 

Abstract:
We propose to develop an OBIS data server node containing information characterizing the distribution and feeding ecology of Alaskan groundfish in relation to environmental parameters. Capitalizing upon our experience as participants in several OBIS projects and using established OBIS tools and protocols for Web-based access to biogeographic datasets, this information system will archive, analyze, and provide a means to distribute via the Internet information on the spatial and temporal distribution of a large number of groundfish and associated prey species sampled in the Gulf of Alaska, Aleutian Island waters, and the Bering Sea by NMFS Alaska Fisheries Science Center (AFSC). This biogeographic information system will include data on the gut contents of specimens as well as environmental information characterizing the habitats of the species. These datasets provide a biogeographic description of groundfish distribution and dynamics in relation to habitat structure and environmental variability. They also provide a detailed account of interspecific and environmental interactions that are integral to ecosystem-based fisheries assessment and management approaches. Biological databases used in this project will derive from AFSC, while environmental information will come from databases at the Pacific Marine Ecological Laboratory, AFSC and other sources such as the Institute of Marine Science, University of Alaska Fairbanks. Datasets employed are diverse in nature, and will include satellite imagery, hydrographic and fishery surveys data. The information system will address the problem of integrating multivariate data that has been collected on differing spatial and temporal scales. It will also provide GIS tools to analyze, visualize, and disseminate information according to OBIS technical protocols. Our goal is to develop a pilot system that will not only augment OBIS, but also characterize the habitat and behavior of Alaskan groundfish, and provide a model of how the integration of environmental information can aid in the assessment of marine resources.

STAC Recommendation:
This proposal provides a structured proven approach to the implementation of an OBIS (Oceanographic Biological Information System) node in the Alaskan region in addition to addressing the invitation very well. Kiefer has chosen the Alaska Fisheries Science Center Groundfish Databases as a candidate series of datasets to be upscaled into the Census of Marine Life’s (CoML) bio-geographic database schema known as OBIS. Four dimensional (x,y,z,t) visualization tools will be accessible through the web or client connection using EASY WEB Server or EASY client respectively. EASY is a product which has been developed by Kiefer and has been integrated with many regional observing systems such as the Gulf of Maine Biological Information System (GIMBIS) and has been ported to the DODS server (a product of the OPeNDAP Group). In addition to providing GEM with a regional OBIS node, this proposal will also assist in the initialization of the Alaskan Oceanographic Observing System (AOOS) by
providing a data node which will pipe information to the national level (IOOS). Focus the demonstration on the geographic region of the GEM Program. The Alaska Groundfish data set is only a starting point for implementation, and the extension to more GEM-relevant data sets such as SEA, APEX, NVP, is recommended for the future. Interactions with potential users, such as the GEM modeling group, the authors of GEM synthesis sections, and interested members of the public. Fund.

**Executive Director's Recommendation:**

The proposal takes a big step toward meeting GEM needs for database standards, and for improving access of scientists and the public to GEM data, as well as to GEM related data. The use of the groundfish database is justified because it saves development costs by providing a well known standard against which results may be judged. Once the proof of concept is established, the products from the project are extensible to many different types of data at small marginal cost. Fund.
Project: Kline-FY04-Exchange between GOA and PWS

Project Title: Detecting the Exchange between Gulf of Alaska and Prince William Sound, Submitted under the BAA

Location: Prince William Sound

Proposer: Thomas Kline

Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:

FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
This project will use stable isotope analysis to understand how exchange between the Gulf of Alaska (GOA) and Prince William Sound (PWS) via the Alaska Coastal Current affects the biology of PWS through assessment of the influx of diapausing Neocalanus copepods, the keystone zooplankton taxon of the subarctic Pacific, from the GOA in the Black Hole of PWS. The project will first resolve the hypothesized summer timing of the Neocalanus inflow using MOCNESS samples from the P.I.'s GLOBEC project during cruises in 2001 to 2004. During the fall-winter of 2004-2005 the project will determine how best to assess net inflow with the minimal number of sampling stations. During the fall-winter 2005-2006 the project will begin to assess stage timing and population dynamics of diapausing and reproducing Neocalanus so as to lead to monitoring and predictive modeling. The project will recommend a sampling strategy for long-term sampling to monitor changes in the nature of the GOA inflow through impacts on this key taxon.

STAC Recommendation:
Understanding exchanges between PWS and the Gulf of Alaska is surely important to GEM, however the proposal does not clearly explain Neocalanus life histories and the theory of stocking of the PWS “Black Hole” with diapausing individuals from the GOA. The text is not clearly written. The sampling methods are not the best for the species in question. Zooplankton sampling in the Black Hole is ideally suited to the simplest sorts of messenger activated vertical nets. A cast to 800 m can be made in half and hour or less, a complete vertical series in 2 to 3 hours. Therefore the proposal to acquire and use a HydroBios Multnet is wasteful and likely to reduce the overall reliability of the sampling scheme. For purposes of knowing how many diapause stage Neocalanus are in the Black Hole on a given date, no closing nets are needed, but rather a vertical haul from just over the bottom to the surface and report the result as number m-2. It will take a modest boat with a davit or A-frame, and a powered winch with 1000 m of wire rope, as opposed to the more expensive platform proposed here. It is not explained why GEM should bear the cost of working up GLOBEC samples, although this may be justified under certain circumstances. Do not fund.

Executive Director’s Recommendation:
Although the proposal identifies a very important area of information for the GEM program, methodological problems identified in the peer review cannot be resolved during the current funding cycle. Do not fund.
Project: Knudsen-FY04-Nutrient-Based Resource Management

Project Title: Research for Nutrient-Based Resource Management in Watersheds and Estuaries

Location: Prince William Sound

Proposer: Eric Knudsen

Proposer Affiliation: DOI

Lead Agency: DOI

Funding Recommendations:

FY04: $153,216.00  FY05: $177,003.00  FY06: $152,632.00

Abstract:
Proposal offers a strategy for developing a monitoring program for watersheds that would form the basis for a comprehensive understanding of water quality and biological production in relation to natural and human induced variability. Sampling strategy effectively leverages existing funding from Oil Spill Recovery Institute and North Pacific Research Board to minimize costs. Data derived on isotopic signatures of C, N, and S will be invaluable in designing monitoring throughout the GEM area. Important new information would be produced on effects of watersheds on productivities of nearshore environments, the feasibility of using sulfur as indicator of marine related effects, and the relation of MDN to freshwater residence time in juvenile salmon. Proposal makes good case that the management implications of information for salmon and salmon-dependent economies and wildlife are very strong for ADF&G, NMFS, and USFWS. The proposal was strong on qualitative and philosophical sampling, but weak on details of actually doing the sampling.

STAC Recommendation:
Proposal offers a clear strategy for developing a monitoring program for watersheds that would form the basis for a comprehensive understanding of water quality and biological production in relation to natural and human induced variability. Sampling strategy effectively leverages existing funding from Oil Spill Recovery Institute and North Pacific Research Board to minimize costs. Data derived on isotopic signatures of C, N, and S will be invaluable in designing monitoring throughout the GEM area. Important new information would be produced on effects of watersheds on productivities of nearshore environments, the feasibility of using sulfur as indicator of marine related effects, and the relation of MDN to freshwater residence time in juvenile salmon. Proposal makes good case that the management implications of information for salmon and salmon-dependent economies and wildlife are very strong for ADF&G, NMFS, and USFWS. On the negative side the proposal has some serious shortcomings in the presentation of hypotheses and methods. Hypotheses need to be re-written to remove tautologies, maps of sampling localities need to be provided, and field methods for sampling and estimation of abundance need to be clearly explained. Fund contingent on receipt of revised proposal addressing peer reviewer concerns.

Executive Director's Recommendation:
The project provides information on terrestrial-marine linkages in the nearshore and riverine environments that is essential to planning watershed monitoring. The project cannot move forward until receipt and approval of revised proposal addressing peer reviewer concerns, and
receipt of acceptable review drafts of all outstanding reports from project personnel. In addition
in order to move forward a letter from the Principal Investigators is required agreeing to
participate in a watershed workshop will be held at the January 2005 GEM meeting, and to
present an up-to-date report on progress and participate in comparison and evaluation of methods.
Fund contingent.
Project: Konar-FY04-Natural Geography in Shore Areas

Project Title: Alaska Natural Geography in Shore Areas: Year 2 of a Census of Marine Life Initial Field Project

Location: Kodiak Island, PWS and Kachemak Bay

Proposer: Brenda Konar

Proposer Affiliation: Alaskan University

Lead Agency: NOAA

Funding Recommendations:

FY04: 211,400.00  FY05:  FY06:

Abstract:
This proposal seeks funding to complete the initial nearshore biodiversity surveys that were started in the summer of 2003 in Kodiak Island, Prince William Sound and Kachemak Bay. These surveys are part of a pole-to-pole latitudinal gradient in macroalgal rocky bottom and seagrass soft bottom habitats that is applying standardized protocols developed under the Census of Marine Life program. In our second year of funding we will resurvey all sites that were sampled in 2003 for temporal resolution and will retrieve the temperature data loggers that were deployed at all sites in 2003 so that physical data can be incorporated for each study site. The project is heavily based on local community involvement for sampling. Expected outcomes are establishment of a biodiversity database for current regional and global comparisons and future long-term monitoring programs, capacity building, and a broad outreach to the public.

STAC Recommendation:
This proposal seeks funds to complete the initial nearshore biodiversity surveys started in the summer of 2003 in Kodiak Island, Prince William Sound and Kachemak Bay. The surveys were funded using EVOS funds. The surveys are part of a pole-to-pole latitudinal gradient in macroalgal rocky bottom and seagrass soft bottom habitats that is applying standardized protocols developed under the Census of Marine Life Program. Funding in second year will allow resurvey of all sites sampled in 2003 and incorporate physical data for each study site. The sampling aspects of the surveys have strong local community involvement. The results of this projects will establish a biodiversity database for current regional and global comparisons and future long-term monitoring programs, capacity building, and a broad outreach to the public. Fund at level requested originally.

Executive Director’s Recommendation:
The proposal continues a process started in FY 03 for exploring possibilities for nearshore monitoring sites that are conducive to community involvement in terms of the questions addressed and the data collected. Sites were explored and samples collected in FY 03 and analysis and recommendations are expected during FY 04. Fund.
Project: Kopchak-FY04-Resource Mapping

Project Title: Cordova Community Resource Mapping

Location: Prince William Sound and the Cooper River Drainage

Proposer: Robert Kopchak  
Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:
FY04: $0.00  
FY05: $0.00  
FY06: $0.00

Abstract:
This project would utilize an integrated GIS database and produce maps of resources that the people of Cordova and the surrounding area are dependent on. The effort would build upon existing projects either completed or under development by: Alyeska Pipeline Service Co., US Forest Service, NMFS, Alaska Departments of Fish and Game, Environmental Conservation, and Dept. of Natural Resources, BLM, PWSRCAC, Ecotrust, and others. The effort would be an integral part of, and a complement to a three-year Copper River drainage resource assessment, currently being undertaken by Ecotrust. The GIS maps would be made available to institutional users and the general public through web site access (PWS Science Center, Ecotrust, and GEM/EVOS) for research and educational purposes.

STAC Recommendation:
This is an interesting project that proposes to synthesize data for the Cordova Resources Area in an integrated GIS database however, there are still some major questions that need to be addressed before the project could be recommended for funding. First, the “Cordova Resource Area” is not defined in the proposal. There is no map and at times it refers to the Copper River and other times refers to the Cordova area and then in FY06 to “integrate where possible PWS data into GIS system”. Additionally it is difficult to determine exactly what is proposed. The proposed objectives (II A) are vague. What exactly is going to be produced? How are “all sensitive areas” defined? Why are only critical salmon habitats to be profiled and not habitats for other species like herring? The methods (II B) are the same as the milestones. Furthermore (II C) “GEM QA/QC requirements” need to be specifically defined. The qualifications of the PI need to be established by providing a CV. The proposal was not coordinated with the other projects in the GEM region that are using some kind of mapping. Do not fund.

Executive Director’s Recommendation:
Methodological problems identified in the peer review process are not surmountable during the present funding cycle. Do not fund.
Project: Kulkarni-FY04-Design for Data Management

Project Title: A Design for a Data Management and Information Portal for GEM - Submitted under the BAA

Location: Data & Information Management Proposal on Site

Proposer: Ravi Kulkarni

Proposer Affiliation: Non Alaskan University

Lead Agency: NOAA

Funding Recommendations:

FY04: $0.00  
FY05: $0.00  
FY06: $0.00

Abstract:
The GEM program relies on data collection from a wide variety of sources, including insitu, remote sensing, modeling and simulation, and derived datasets. In addition multiple disciplines of biology, oceanography, meteorology, and others are needed to provide a truly synoptic view of the data and their interpretation. This proposal seeks to design an infrastructure that can be used as an extensible framework for the tasks of data preparation and submission to a repository, peer review and “publication” of datasets, and collaborative data analysis and visualization for the purposes of internet based virtual data analysis workshops (CDAW). The idea of representing data preparation and peer review as “business processes” has been adopted from NASA/Planetary Data System.

STAC Recommendation:
This proposal provides an analysis of a set of tools which can be used to provide data access, processing, and visualization to distributed oceanographic data sets. What this proposal seriously lacks is any type of implementation scheme or plan to provide a deliverable data product. The author, Kulkarni, was involved in a successful NASA project to provide data access to planetary orbiting data. In this proposal Kulkarni attempts to adapt the model for planetary data to data which is of the oceanographic type. Many of diagrams and figures included in this proposal reference orbiting or planetary information, these figures should be referencing oceanographic variables, looks as if most of this proposal contains recycled content. The proposal references various open source technologies to accomplish its goals such as Java, OpenDX, and OpenMap. These technologies make up the correct toolset for the creation of a data management solution for GEM but the proposal provides no implementation scheme. Many of the deliverables listed in the proposal are analogous to solutions already created by the OPeNDAP community using the same open source tools. In addition, this proposals response to the FY04 invitation is very poor and does not adequately address any of the issues listed in the data management section. Do not fund.

Executive Director’s Recommendation:
The proposal was not responsive to the Invitation for Proposals, and as a consequence it addresses products not needed at this time. Do not fund.
Project: Lilly-FY04-Fate and Transport Modeling

Project Title: Intertidal Contaminant Fate and Transport Modeling

Location: Prince William Sound

Proposer: Michael Lilly  Proposer Affiliation: Private Enterprise

Lead Agency: NOAA

Funding Recommendations:

FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
The fate and transport of oil and dissolved hydrocarbons in the beach environment is a critical process to characterize for development of monitoring programs under the GEM plan. The intertidal zone is the boundary zone between highly productive ecosystems and the flux of hydrocarbons in beach ground-water systems. The amount and duration of hydrocarbon loading across the intertidal zone is important for understanding how biological systems respond to hydrocarbons acting as long-term sources. We will synthesize existing data on beaches containing hydrocarbons, and identify the biogeochemical processes and nearshore ground-water dynamics of typical beaches still bearing impacts of the oil spill. Numerical modeling will be used to understand and demonstrate how these processes work. This effort will help GEM program planners evaluate what data-collection needs exist for long-term monitoring of hydrocarbons and what information is needed to better understand and model fate and transport processes in impacted beach environments.

STAC Recommendation:
This proposal will produce a literature summary and conceptual model of the fate and transport of oil in intertidal habitats in Prince William Sound. There is no link between the proposed study plan and the ability to assess the impacts of lingering oil in intertidal habitats. The proposal did not specify any time-period for which contaminant transport would be modeled. There was no discussion or apparent understanding of the extent of oil loading or degree of weathering of oil residues as of 2003. It seems as though the proposers have little knowledge of the composition of crude oil as a complex mixture, the weathering processes that affect water-soluble components over 13 years, which compounds have ecological significance, etc. Their example figures had little application to the actual intertidal settings or oil distributions. They propose to create conceptual and contaminant transport models for “index” or “type-beaches” in PWS without any effort to validate the results. I would have at least expected to have some field data to validate the simplest of model outputs, such as ground-water salinity. Recommendation: Do not fund

Executive Director’s Recommendation:
The proposal is not responsive to the needs of the program at this time. Do not fund.
Project: Macklin-FY04-NGOA Metadatabase

Project Title: A Comprehensive, Web-accessible, Geo-referenced Metadatabase of Marine-related Physical and Biological Databases of the Northern Gulf of Alaska

Location: Seattle, WA

Proposer: S. Allen Macklin

Proposer Affiliation: NOAA

Lead Agency: NOAA

Funding Recommendations:

FY04: $90,000.00
FY05:
FY06:

Abstract:
This project will adapt for GEM purposes the North Pacific Ecosystem Metadatabase (NPEM, http://www.pmel.noaa.gov/np/mdb/) that has served information via the World-Wide Web since 1998. The adaptation will be a web-accessible metadatabase of marine science databases of the northern Gulf of Alaska. Appropriate records from the NPEM will be transferred to the GEM metadatabase, and additional records pertaining to GEM, PICES, NPRB, UAF/IMS, GLOBEC, FOCI, and similar research efforts will be added. Metadata will be coded to the FGDC standard using the 26 elements specified by MetaLite. As possible, metadata will include thematic, semantic and syntactic descriptors. This utility will include filtering capabilities to extract from existing metadata records those specific to the regions, habitat types, and subject areas defined by the working concepts of the GEM Science Plan. Compound searches of the metadatabase will allow selection of records by time, space, keyword, text string, etc., and results will be ranked according to their agreement with the search criteria. Work will be accomplished over a three-year period in Seattle, Washington.

STAC Recommendation:
This proposal responds to data management needs identified in the invitation, however it goes beyond the needs identified and needs to be modified and reduced in order to be useful to the GEM program. Reduce the amount of effort outside the GEM program, apply additional effort to build expertise inside the GEM program. Scale down proposal to exclude Objective 2. Change proposal to focus on Objectives 1, 4 and 5, with emphasis on the GEM region and the nearshore areas in Objective 5. Remove the first part of Objective 3 which is to establish a web site as FGDC node, which is a NOAA responsibility. Clarify the need for remaining part of Objective 3 with respect the FGDC NSDI and include in Objective 1 if possible. Fund the project for two years at amount not to exceed $90K total over two years contingent on receipt of revised proposal addressing points above.

Executive Director's Recommendation:
The proposal provides a workable solution to the metadatabase requirements of the GEM program, however its scope is well beyond that envisioned in the Invitation for Proposals. The proposal needs to be re-written and the budgets accordingly reduced to accommodate the recommendations of the STAC. Fund contingent.
Project: Mann-FY04-Reconstructing Sockeye Populations

Project Title: Reconstructing Sockeye Populations in the Gulf of Alaska over the Last Several Thousand Years: The Natural Background to Future Changes

Location: Prince William Sound, Kodiak, Kenai Peninsula

Proposer: Daniel Mann  
Proposer Affiliation: Alaskan University

Lead Agency: NOAA

Funding Recommendations:
FY04: $92,500.00  
FY05: $26,000.00  
FY06: $118,500.00

Abstract:
We are reconstructing changes in sockeye salmon abundance over the last 10,000 years using the 15N record left by salmon carcasses in the sediments of spawning lakes. Our research question is: What is the normal variability in sockeye salmon populations in the Gulf of Alaska and how does it relate to climatic changes in the Gulf of Alaska region? Our results provide a much-needed background to monitoring studies within the GEM program and to fisheries managers who are working to preserve and restore natural salmon runs. Results from 2002 and 2003 include two, new and unexpectedly complete records of salmon abundance in lakes on the Kenai Peninsula. Both records extend back to the time of regional deglaciation around 10,000 years ago. These new cores provide records of changing 15N that are five times longer than any previous record of salmon-run history. The unexpected length and richness of these new lake-core records have motivated us to request additional funds from EVOS to cover an additional year of full funding followed by a final year of analysis and synthesis.

STAC Recommendation:
Mann and Finney propose to continue their studies of 15N in sediments in the spawning lakes. They are able to extend the record back 10,000 years. A goal is to establish what is normal salmon abundance and its variability. They propose to compare these sediments with other climate records in an attempt to explain causes of this variability. However, their assumption that the 15N post 1900 reflect the population size is incorrect. Since commercial fishing harvests began, it only reflects changes in salmon escapement. There is concern that because of limited other types of data, the investigators might develop simplified ideas regarding population changes. Since the sediments will remain viable for future analysis it was felt that this work did not require immediate funding.

Executive Director’s Recommendation:
Although this proposal is in an area of work that was not invited, it would provide comparative historical data on salmon abundance or salmon escapement levels of use in planning GEM watershed and nearshore studies. Based on the strength of the peer reviews, and the recommendation of the Public Advisory Committee, this study should be done if funds can be found. Fund lower priority.
Project: Matkin-FY04-Killer Whales in PWS/Kenai Fjords

Project Title: Monitoring of Killer Whales in Prince William Sound/Kenai Fjords in 2004 - Submitted under the BAA

Location: PWS, Kenai Fjords Alaska

Proposer: Craig Matkin  Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:
FY04: $0.00  FY05: $0.00  FY06: $0.00

Abstract:
This project transitions monitoring of the damaged resident AB pod and other resident pods and the petitioned as depleted AT1 transient population into a cooperative program with additional collaborative support from the Alaska Sea Life Center, NMFS and various foundations. Monitoring has occurred on a yearly basis since 1984 and was crucial in evaluating the continuing effects from the oil spill. In addition, the role of killer whales in the nearshore ecosystem and possible effects on sea otters will be examined. Community based initiatives such as Youth Area Watch and tour operator educational programs will be integrated. The proposed work will augment current research directed at transient killer whales (ASLC) and provide for annual monitoring of AB pod and other resident pods and includes analysis and reporting of results. In future years the project will be integrated with oceanographic monitoring.

STAC Recommendation:
This proposal is by a hard-working, dedicated researcher who has followed these whales in Prince William Sound over many years. It is clear that killer whales in general are enjoying good growth of their populations. Some of the pods, such as AB and AT 1 have experienced problems and in the case of the AT 1 pod may be headed for extinction. The paradigms of killer whale social structure and what we wish to see happen are open to challenge, as for example “members” of AB pod are usually seen with another pod when they are sighted. It is clear that if AB pod was injured by the spill that it is on its way to recovery. There is little or no evidence that the problems of AT 1 pod, if they are as the investigator asserts related to the oil spill, as beaching of individual animals in 2000 and 2001 are eleven and twelve years after the spill. If the Trustee Council wishes to follow killer whale pod AB to recovery of pre-spill numbers, which is projected to occur in 2015, then monitoring need only be occasional. Recommendation: Do not fund

Executive Director’s Recommendation:
The proposal does not provide a compelling case that the information gathered is essential for determining the status of an injured species. The STAC raises serious concerns regarding the link to the presumed effects on killer whales to oiling. Do not fund.
Project: Mazumder-FY04-Marine-Derived Nutrients

Project Title: Marine-Derived Nutrients in the Kenai and Adjacent Watersheds: Methods for Detecting Change

Location: Cook Inlet drainage basin, Kenai Peninsula, Kenai River watershed

Proposer: Asit Mazumder  Proposer Affiliation: Alaskan University

Lead Agency: NOAA

Funding Recommendations:
FY04: $120,000.00  FY05: $120,000.00  FY06: $120,000.00

Abstract:
Kenai River Watershed (KenaiRW) is recognized for its abundant fish, wildlife and diversity of landscapes. Extensive consultation among stakeholders, communities and agencies has led to this proposal on the role of marine-derived nutrients (MDN) in sustaining the productivity of Kenai RW. We propose to develop robust methods and monitoring protocols to detect, understand and predict changes in MDN and its linkage to productivity and resources. We will test the robustness of several indicators (nutrients, stable isotopes, fatty acids, contaminants, foodwebs) of MDN in different ecosystem components of KenaiRW and seven other watersheds around Cook Inlet. In the 3rd year, we will begin testing the validity of these indicators to quantify the fate/transport of MDN linking various components of the watershed and their implications for the productivity of KenaiRW. We will also develop a platform for networking and communication among various research groups looking at watershed level changes in MDN and resource productivity.

STAC Recommendation:
The proposal is well beyond the scope of the Invitation with regard to annual cost and the types of activities that are appropriate to GEM watersheds at this time. The proposal addresses the fundamental measurement questions posed in the Science Plan and the Invitation in objectives 1 – 3 and 8. Objectives 1 – 3 require thoroughly sampling one relatively large and complex watershed, when basic questions of how to measure marine influences in watersheds may best be answered at lower cost by sampling smaller, less complex watersheds that provide more geographic contrast. Objective 8 affects coordination among cooperating parties. Objectives 4 – 7 presume to make choices regarding modeling and selection of MDN measures and indicator species that are not envisioned in GEM planning until late FY 06 to early FY 07 when the results of the current phase of GEM watershed work becomes available. The GEM modeling program that will link the habitat types and guide investment in research is not prepared to handle the output from this ambitious sampling program. It is also not clear present knowledge of the variability in proposed measures of MDN and proxies is sufficient to design sampling of the scale of the proposal. Addition of matching funds would take the three year cost of this project to US$ 1.2M which is well beyond the level of funding justified by the current state of knowledge of marine-terrestrial linkages in GEM watersheds. Recommend that proposal be revised to eliminate sampling sites outside the Kenai River watershed, and reduced within the watershed to a representative of each habitat type, and to focus on achieving objectives 1, 2, 3, and 8 over a three year period. Fund reduced.

Executive Director's Recommendation:
The proposal provides needed measures of marine linkages in a watershed that is at high risk of degradation due to human activities, however its scope is far broader than envisioned in the Invitation for Proposals. A revised proposal incorporating the recommendations of the STAC for an amount not to exceed 120K is needed before this proposal can move forward. In addition, in order to move forward a letter from the PI's is required agreeing to participate in a watershed workshop will be held at the January 2005 GEM meeting, and to present an up-to-date report on progress and participate in comparison and evaluation of methods. Fund contingent on receipt of revised proposal.
Project: McNutt-FY04-GEM Infrastructure - Lyn McNut

Project Title: Building the Infrastructure for the Gulf Ecosystem Monitoring (GEM) Program

Location: GEM Monitoring Region

Proposer: Lyn McNutt  
Proposer Affiliation: Alaskan University

Lead Agency: NOAA

Funding Recommendations:

FY04: $88,758.10  
FY05: $88,384.30  
FY06: $90,169.10

Abstract:

This proposal addresses modeling within the GEM Program, and the infrastructure necessary to implement and maintain a monitoring and data dissemination system for the northern Gulf of Alaska (GOA). Agreement on an interdisciplinary strategy is critical to effective resource management and problem solving in the northern GOA. Use of the GEM infrastructure in support of models and observations will identify and refine measures to describe, manage and predict the status and health of the ecosystem, provide data as information to managers and coastal communities, and communicate publicly the current state of the ecosystem.

Our goal is to provide consensus recommendations to EVOS on:

1. Creation of an integrated ecosystem model for the northern GOA;
2. Understanding spatial and temporal scales for implementing a biophysical monitoring program, and;
3. Implementing the GEM infrastructure, including identification of strategies for cooperation, coordination, integration, and cost efficiency.

STAC Recommendation:

This is part of two separate proposals (McNutt’s and Schumacher’s) because budgets are from two separate institutions. The proposals are must be considered together. This is an effective proposal to establish a framework and infrastructure for a modeling base for GEM. This proposal directly address the Invitation part C. Modeling, and in particular it is in direct response to example #1. (p. 6) “Building the Infrastructure Necessary to Create, Develop and Maintain the GEM Model.” The proposal will do three things essential to the success of GEM: (1) create an integrated ecosystem model for the NGOA, (2) understand spatial and temporal scales for implementing a biophysical monitoring program, and (3) implement the GEM infrastructure, including identification of strategies for cooperation, coordination, integration and cost efficiency. This would provide GEM with an overall structure for modeling. STAC recommends that an objective be added for resource users to actively participate in the workshop along with the scientists. In addition, STAC questions role of the student in the proposed work and asks that it be clarified. Finally STAC recommends that activities be focused from the start on the crux of the modeling problem, which is how to provide information of use to managers from the GEM monitoring program. Fund both proposals contingent on receipt of revised proposals addressing STAC recommendations and question.
Executive Director’s Recommendation:
This proposal is an essential part of building the GEM Model. The GEM Model is the primary means of organizing GEM information so that it can be used in understanding the status of injured species, allowing natural resource dependent communities to anticipate change and helping managers anticipate changes in populations of birds, fish and mammals. Proposal provides a comprehensive solution to the need to bring together a team of professionals who can guide the development of the GEM Model. In order to move forward the proposal needs to incorporate the recommendations of the STAC. Fund contingent.
Project:  \textit{Merritt-FY04-GEM Watershed Synthesis}

\textbf{Project Title:} GEM Watershed Synthesis for Evaluation, Planning and Prioritization of Options

\textbf{Location:} Watersheds of the GEM Area. Majority of synthesis will occur in Fairbanks.

\textbf{Proposer:} Margaret Merritt  \hspace{1cm} \textbf{Proposer Affiliation:} Alaskan University

\textbf{Lead Agency:} NOAA

\textbf{Funding Recommendations:}

\begin{tabular}{lll}
FY04 & FY05 & FY06 \\
$0.00$ & $0.00$ & $0.00$
\end{tabular}

\textbf{Abstract:}

There is a need to synthesize relevant information into a published reference to guide policy makers and resource managers in implementing the watershed component of the GEM Program through identification of goals, objectives and issues, as well as the evaluation and prioritization of options. This project will evaluate aspects of the GEM Program’s conceptual foundation, hypotheses and ideas relative to the state of current knowledge of watershed-marine linkages in the GEM area. In addition to scientific information, relationships between resource management and socioeconomic and political issues will be identified. A systems approach using accompanying software will be used to assist in structuring the problem. The resulting synthesis of information will be framed into a clear and easily communicable tool that can serve as a teaching aid.

\textbf{STAC Recommendation:}

This proposal for watershed synthesis focuses on the pathway to the decision making framework, without clearly describing how the literature synthesis would be built from the foundation of GEM’s primary source documents, as specified in the Invitation. On the positive side, the proposal provides a reasonable approach for identifying and selecting options for projects that might be implemented in the GEM watershed habitat type in FY 06, and a further positive is that it would do so by incorporating information and opinions of people from multiple watershed-related communities, including managers and scientists. On the negative side it does not clearly articulate as a top priority the primary need to fully develop the introduction of the watershed habitat type in the GEM Science Plan. The Invitation calls for “... a synthesis of scientific literature and existing data gathering programs ...” In addition, the proposed schedule is partly out of synchrony with the annual funding cycle. For example, in order to contribute to the development of the FY 06 Invitation, an additional milestone of a draft literature synthesis accompanied by ProCite bibliography by Sept. 30, 2004 would have been necessary. Do not fund.

\textbf{Executive Director’s Recommendation:}

The proposal did not identify the literature survey and supporting staff necessary to the synthesis, nor did it recognize reporting requirements. Methodological and staffing problems such as these are not resolvable during the present funding cycle. Do not fund.
Project:  Nelson-FY04-Hydrocarbon Database

Project Title:  The Exxon Valdez Trustee Hydrocarbon Database and Interpretation Service

Location:  entire spill area

Proposer:  Bonita Nelson  
Proposer Affiliation:  NOAA

Lead Agency:  NOAA

Funding Recommendations:

FY04:  $22,200.00  
FY05:  $22,200.00  
FY06:  $22,200.00

Abstract:
This project is an on-going service project providing data and sample archiving services for all samples collected for hydrocarbon analysis in support of Exxon Valdez Oil Spill Trustee Council projects. These data represent samples collected since the oil spill in 1989 to the present and include environmental and laboratory Response (National Resource Damage Assessment - NRDA) and Restoration data. Additionally, we provide interpretive services for the hydrocarbon analysis provide public releases of the database (including FOIA requests) and maintain the hydrocarbon sample archives.

STAC Recommendation:
This proposal would extend the management of the data base that is used to track samples for hydrocarbon analyses and continue to make available interpretive services related to origin of oil and its composition, including the likelihood of toxicity. This project is modest in cost and is needed if the Trustee Council is to continue to investigate possible links between oil remaining in the environment and species that apparently have not recovered from the spill. Recommendation: Fund

Executive Director's Recommendation:
Proposal provides an essential service required while the possibility of litigation exists. Fund.
**Project:** Okkonen-FY04-Monitoring Program in the NE Pacific Ocean

**Project Title:** A Monitoring Program for Near-Surface Temp, Salinity, and Fluorescence Fields in the northeast Pacific Ocean: Transition to an Operational Program

**Location:** N. Gulf of Alaska

**Proposer:** Stephen Okkonen

**Proposer Affiliation:** Alaskan University

**Lead Agency:** NOAA

**Funding Recommendations:**

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**Abstract:**

This proposed project responds to the Gulf Ecosystem Monitoring and Research Program invitation category F.2. (Alaska Coastal Current / Collecting physical and biological observations from non-AMHS ships-of-opportunity). Funds are requested to continue (1) the maintenance and operation of a thermosalinograph (TSG) that was installed on the tanker vessel Polar Alaska in July 2002 and (2) the analyses of the collected data. The TSG was originally funded as a pilot project by the EVOS Trustee Council in FY02.

**STAC Recommendation:**

Dr. Okkonen and subcontractor Dave Cutchin of Scripps maintain and collect data from a thermosalinograph operating continuously during sea runs on the tanker T/V Polar Alaska transiting from Valdez to alternately San Francisco and Long Beach. Cutchin meets the ships at the south end, consults with the chief and second engineers about concerns regarding the system, copies the data from the hard drive of the dedicated computer and services the system (6 times per year). Okkonen reviews, quality checks and archives the data, updating it on a public web site each operation cycle. Okkonen is also using the data to identify the locations on each passage of specific current features (ACC is discerned as drops in S and T; the shelf-break jet or Alaska stream similarly, and oceanic eddies as extended drops in just salinity). He is comparing these features to sea surface topography from TOPEX-POSEIDON altimetry. Data are transferred to the Batten-Welch CPR project that also operates from the Polar Alaska. An initial fluorometer installation failed, but fluorometry should be available by mid-summer 2003. Sustaining fluorometry is anticipated. Fund.

**Executive Director’s Recommendation:**

Past performance of the investigators and the results to date, have established this project as a low cost means of collecting basic physical data in the nearshore and offshore areas that should be of use to the GEM Model when it is operational. Fund.
**Project:** Pegau-FY04-Studying the ACC

**Project Title:** Studying the ACC within Cook Inlet using Volunteer Observing Ships

**Location:** Lower Cook Inlet and Kachemak Bay

**Proposer:** Scott Pegau  
**Proposer Affiliation:** ADFG

**Lead Agency:** ADFG

**Funding Recommendations:**

- **FY04:** $0.00  
- **FY05:** $0.00  
- **FY06:** $0.00

**Abstract:**
This project is designed to monitor changes in the coastal oceans using instruments on vessels of opportunity. The scientific goal is to observe the variations in the flow of the Alaska Coastal Current (ACC) in order to better understand the natural and anthropogenic influences on lower Cook Inlet. In particular, we are interested in understanding how the flow of the ACC interacts with Kachemak Bay. If the ACC enters Kachemak Bay it can carry larvae that can replenish fish and intertidal organisms. The project will produce a basic instrument suite appropriate for installing on all sizes of vessels that regularly operate in the coastal waters of the Gulf of Alaska. The measurements will include temperature, salinity, chlorophyll and CDOM fluorescence, and turbidity. The work will be done in Homer, Alaska at the Kachemak Bay Research Reserve, but techniques will be transferable to other regions in the Gulf and Prince William Sound.

**STAC Recommendation:**
Although the goal of quantifying ACC penetration into lower Cook Inlet and, particularly, into Kachemak Bay is important to understanding lower Cook Inlet, the applications of the proposed data and the intervals over which it will be of value to monitor them have not been fully thought out. They need to resolve the sampling problem and the tidal model necessary to de-tide the data. The ferry monitoring would cover a significant part of this area. Do not fund.

**Executive Director’s Recommendation:**
The proposal correctly identifies sampling opportunities that could be important in understanding changes in populations of birds, fish and mammals in the northern Gulf of Alaska, however substantial issues were identified in the peer review process. Technical issues are not resolvable within the current funding cycle. Do not fund.
Project: Renner-FY04-Population Modeling

Project Title: Population Modeling of Kittlitz's Murrelet (Brachyramphus brevirostris)

Location: PWS, Kachemak Bay, Adak

Proposer: Martin Renner  
Proposer Affiliation: Alaskan University

Lead Agency: NOAA

Funding Recommendations:
FY04: $0.00  
FY05: $0.00  
FY06: $0.00

Abstract:
Kittlitz's Murrelet were seriously impacted by the Exxon Valdez Oil Spill and have not recovered but continued to decline alarmingly (listing under Endangered Species Act has been petitioned). We propose to catch and radio tag Kittlitz's Murrelet to find nests, monitor habitat use and estimate survival by mark-recapture. Field work will be conducted at three sites (Prince William Sound, Kachemak Bay, Adak) over three years. Sites are selected to reflect a gradient from heavily glaciated to near glacier, to no glacier. All data will be gathered to build a comprehensive population model used for a Population Viability Analysis. All data will be made openly available on the web.

STAC Recommendation:
A large number of marbled murrelets, the predominant murrelet in PWS, were killed by the spill, and it is not known for sure how many Kittlitz's murrelets may have been included in the "unidentified murrelet" category among the carcasses recovered after the spill. This species is found predominantly in glacial fjords and none of these environments were oiled significantly. None-the-less, this species is in danger of extirpation and PWS is a major population center for this species. A large number of marbled murrelets, the predominant murrelet in PWS, were killed by the spill, and it is not known for sure how many Kittlitz's Murrelets may have been included in the "unidentified murrelet" category among the carcasses recovered after the spill. This species is found predominantly in glacial fjords and none of these environments were oiled significantly. None-the-less, this species is in danger of extirpation and PWS is a major population center for this species. The methods of achieving the project goals are appropriate and the personnel are experienced in this sort of work. However, the budget is too modest to support the kind of effort needed to locate and verify nests and marked individuals. The connection between lingering oil and populations of this species in the spill area are weakly made, as in fact they are weak. From the standpoint of concern for ongoing spill effects, this project is weakly justified, but it may have value for what the population indicates for the shrinking habitat of the tidewater glacial fjord, if this a concern in the GEM program. Do not fund.

Executive Director's Recommendation:
The project is not well justified in terms of the Restoration objective of understanding the status of an injured species in relation to the past and present effects of oiling. Developing the background for federal listing under the Endangered Species Act is not an appropriate task for this funding source. Do not fund.
Project: Rice-FY04-Lingering Population Status

Project Title: Lingering Oil: Pathways of Exposure and Population Status (ABL)

Location: Prince William Sound

Proposer: Stanley Rice

Proposer Affiliation: NOAA

Lead Agency: NOAA

Funding Recommendations:

FY04: $60,000.00  FY05: $61,000.00  FY06: $29,100.00

Abstract:

Lingering oil from the Exxon Valdez oil spill remains throughout Western Prince William Sound and appears to have chronic effects on sea otter and sea duck populations in these areas. Studies conducted in 2001-02 have documented the extent of oiling throughout the sound, and as of this writing, we have determined that oil is bioavailable to predators. Bioavailability defines potential for exposure, but is not equal to exposure or significance. In 2003 and 2004, we are determining the significance of lingering oil by quantifying the probability of oil encounters in areas where sea otters and sea ducks have not recovered. Prey and passive samplers collected in 2003 will be analyzed in 2004, and will be supplemented with additional samples in 2004 to meet the needs of the on-going tagging studies of otters and ducks by USGS. With the mechanism of exposure from lower intertidal oil deposits determined, the research theme will move toward the goal of determining the extent and probability of oil exposure in three restricted areas: Herring Bay, Lower Passage, and Bay of Isles. Information gained in this project could aid in the decision process regarding future mitigation, litigation, or clean-up actions.

STAC Recommendation:

Lingering oil from the Exxon Valdez oil spill remains throughout Western Prince William Sound and may be having chronic effects on sea otter and sea duck populations in these areas. Studies conducted in 2001-02 have documented the extent of oiling throughout the sound, and the subsurface oil is bioavailable to predators. Bioavailability defines potential for exposure, but the extent to which oil exposure is occurring and whether such exposure may be deleterious is uncertain. In 2003 and 2004, this project will determine the significance of lingering oil by quantifying the probability of oil encounters in areas where sea otters and sea ducks have not recovered. Prey and passive samplers collected in 2003 will be analyzed in 2004, and will be supplemented with additional samples in 2004 to meet the needs of the on-going tagging studies of otters and ducks by USGS. With the mechanism of exposure from lower intertidal oil deposits determined, the research theme will move toward the goal of determining the extent and probability of oil exposure in three restricted areas: Herring Bay, Lower Passage, and Bay of Isles. Information gained in this project could aid in the decision process regarding future mitigation, litigation, or clean-up actions. This project is well designed and complementary to the sea otter/sea duck project by Bodkin et al. It is a key component of the strategy the Trustee Council undertook in FY2002 to determine if remaining oil is a significant factor in lack of recovery of some species such as sea otter and sea ducks. The technical merits are high. The proposal is responsive to the invitation with relevance to management and community involvement. The management application is moderate. The qualifications of the PIs are
excellent as is their past performance on other EVOS funded projects. Defer funding decision pending outcome of November workshop and disposition of the matter of reports for projects 00396 and 00454.

Executive Director’s Recommendation:
The specific requirements for further work on lingering oil need to be further developed during a workshop to be conducted in November 2003. As identified by the STAC, it is important for the preliminary results of the FY 2003 field season to be considered by legal counsel, EVOS staff, advising scientists and the Trustee Council before decisions on funding are made. The exchange between legal, policy and science people will be reported to the Trustee Council before making decisions on what to do in the summer of 2004, which is the last full field season of data that could be fully analyzed before deciding the path to the re-opener. Defer funding decisions pending the outcome of the November workshop.
Project: Rosenberg-FY04-Harlequin Duck Population

Project Title: Harlequin Duck Population Dynamics in Prince William Sound: Measuring Recovery

Location: Prince William Sound

Proposer: Dan Rosenberg  Proposer Affiliation: ADFG

Lead Agency: ADFG

Funding Recommendations:

FY04: $37,100.00  FY05:  FY06:

Abstract:
This project will address the effects of lingering oil in nearshore habitats of Prince William Sound on populations of harlequin ducks. We will conduct winter boat surveys to test if harlequin ducks have recovered from the effects of the EVOS by comparing population structure and trends between oiled and unoiled treatments in four areas (2 oiled, 2 unoiled) of PWS. Similar structure and trends between oiled and unoiled areas will indicate populations have recovered or are in a position to recover. Work will be complimentary to studies addressing cytochrome P450 induction and over winter survival of female harlequin ducks to give a complete picture of the effects of lingering oil. We will also test for geographic differences in population structure and trend for oiled and unoiled treatments. This is a continuation of surveys begun in 1997. Up to 3 years of surveys are proposed with the results of each year determining the need for continuation.

STAC Recommendation:
This project will address the effects of lingering oil in nearshore habitats of Prince William Sound on populations of harlequin ducks. Winter boat surveys will be conducted to test if harlequin ducks have recovered from the effects of the EVOS by comparing population structure and trends between oiled and unoiled treatments in four areas (2 oiled, 2 unoiled) of PWS. Similar structure and trends between oiled and unoiled areas will indicate populations have recovered or are in a position to recover. Work will be complimentary to studies addressing cytochrome P450 induction and over winter survival of female harlequin ducks to give a complete picture of the effects of lingering oil. The proposal was well reviewed and is relevant to the Trustee Council’s strategy for investigating the links between oil and the recovery of affected populations. Fund contingent on resolution of outstanding reports 00273 and 02407.

Executive Director’s Recommendation:
This is a reasonably priced survey to estimate the abundance of a species, the harlequin duck, which is known to have continuing exposure to Exxon Valdez in the oil spill affected areas of Prince William Sound. Unfortunately there are overdue reports associated with project personnel, so the proposal cannot move forward until acceptable manuscripts of outstanding reports have been received. Fund contingent.
Project: Ruesink-FY04-Altering the Community Structure

Project Title: Investigating the Relative Roles of Natural Factors & Shoreline Harvest in Altering the Community Structure, Dynamics & Diversity of the Kenai Peninsula

Location: Kenai Peninsula

Proposer: Jennifer Ruesink

Proposer Affiliation: Non Alaskan University

Lead Agency: NOAA

Funding Recommendations:

FY04: $67,000.00

FY05: 

FY06: 

Abstract:
The surf swept rocky shores of the outer Kenai Peninsula are the home of three Sugpiaq native villages where the black chiton, Katharina tunicata, remains an important traditional subsistence food source. This benthic invertebrate is also a competitively dominant herbivore known to have dramatic impacts on the structure, dynamics and diversity of the rocky intertidal. In collaboration with tribal members, we will evaluate the relative roles of natural factors (predation/grazing & natural variability) and anthropogenic impacts (Katharina harvest) in altering intertidal community structure. The project addresses the core GEM hypothesis of human versus natural impacts on the structure and productivity of coastal ecosystems. It will also provide an additional field season (2004) of valuable baseline monitoring in the intertidal zone that could be continued in the future as part of a long-term time series. Local tribes will be involved in both developing and carrying out research which will match the GEM commitment to community based science.

STAC Recommendation:
This proposal has strong community involvement. It is probably as well designed as it can be in this context, although it is not absolutely certain it can resolve the fundamental questions asked. It does have long term monitoring potential and is probably good value in terms of baseline information, even if the scientific question remains unresolved. Fund at level originally requested in FY 2003.

Executive Director's Recommendation:
The proposal has a strong community involvement component, having been originated by the village of Port Graham as an investigation targeting an important subsistence resource (the black chiton also known as the Bidarki or black gumboot) that is not studied by other agencies. It is also likely to make a substantial contribution to the development of the nearshore monitoring program. Fund.
Project: Saupe-FY04-Habitat Web Site

Project Title: Alaska Coastal Habitat Web Site

Location: Kenai Peninsula including Kachemak Bay and outer coast

Proposer: Susan Saupe  Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:
FY04: $19,000.00  FY05:  FY06:

Abstract:
This proposal is to develop an Alaska Coastal Habitat Web Site based on several products currently being produced using ShoreZone Mapping techniques. This proposal will tie together several components in a user-friendly, web-accessible format. In a recent workshop hosted by EVOS and attended by personnel from local, state, and federal agencies, universities, and not-for-profit organizations, participants strongly endorsed a coordinated process for continuing coastal mapping and the wide-spread distribution of data through web accessibility. The group also emphasized that the data should be provided in a user-friendly way that will facilitate use by the general public. This proposal outlines a plan to (a) make recently collected ShoreZone data immediately web-accessible, (b) combine ShoreZone mapping data with the existing Gulf of Alaska Coastal Imagery web site, and (c) combine ShoreZone mapping data with detailed site-specific data for various habitats and descriptions of biological assemblages and species. The project will be coordinated by the Cook Inlet RCAC through a subcontract to Coastal and Ocean Resources, Inc. (CORI) who developed the ShoreZone techniques and who is currently conducting various ShoreZone mapping projects in the GEM area. CORI is located in Sidney, British Columbia, where much of the work will be conducted. The Public Outreach development portion will be conducted in Kenai at the Cook Inlet RCAC offices and community visits will take place at various places on the Kenai Peninsula as well as to resources agencies in Anchorage.

STAC Recommendation:
This proposal provides a mechanism for the dissemination of biological coastal information through the web which is cost efficient and practical. Drawing upon methodologies previously implemented in past years, Saupe and Harper plan to expand their coastal web site technology to include more Alaskan coastline in addition to more specific site data (e.g., “data for various habitats and descriptions of biological assemblages and species”). Saupe and Harper will use an ArcIMS mapping engine to facilitate their electronic mapping which is a robust solution but has its drawback due to it being proprietary to ESRI. The project will need to be vigilant in identifying clients using MAPInfo who have a difficult time downloading data from the website and using it on their systems. Overall, this proposal delivers a high degree of data visualization for the small amount requested. Fund.

Executive Director’s Recommendation:
The project provides and adds value to coastal habitat mapping information collected by GEM and other agencies by making the information more readily available. The information is expected to have a high potential for use in planning research and to local governments in understanding and managing coastal development. Fund.
Project: Schneider-FY04-Kodiak Archipelago

Project Title: Kodiak Archipelago Youth Area Watch

Location: Kodiak Archipelago

Proposer: Teri Schneider

Proposer Affiliation: Local Government

Lead Agency: ADFG

Funding Recommendations:

FY04: $63,000.00
FY05: $63,000.00
FY06: $63,000.00

Abstract:
The Kodiak Archipelago Youth Area Watch is an ongoing community involvement project designed to engage students in projects with goals aligned with the general restoration efforts of the Trustee Council. Students and site coordinators will conduct interviews with local experts and document TEK, publishing it in a District oral history magazine. Participation of KAYAW adults and students in the annual Academy of Elders/Science Camp will be strongly encouraged. Participants will share their research during annual gatherings. Such participation will serve as another avenue for more tribal members to learn about restoration efforts, scientific monitoring techniques, and occupations related to such work. Students will explore local knowledge as it relates to marine mammal populations, inter-tidal environment, impact of humans on the coastal environment, human use of overtime and intergenerational changes and cultural beliefs and practices that may provide insight in scientific studies. The value and implications of TEK will be strongly emphasized throughout the implementation of the KAYAW project.

STAC Recommendation:
This is a very competent proposal that creates its own activities based on addressing local interests and concerns as they relate to GEM. The types of activities described in the proposal (resource inventory, habitat mapping, ecology, human effects on resources (page 1) are consistent with information needed to be able to design a local monitoring program. The KAYAW has expanded slowly and the proposed work areas (continuing harbor seal data gathering; continuing focus archaeological and natural resources, and working with the nearshore monitoring project conducted by UAF [Dr. Robert Foy]) are a form of monitoring. Furthermore, the project design has monitoring objectives and study procedures. The proposal is responsive to the invitation (continuing community involvement project), is consistent with one of two GEM strategies (incorporate community involvement), and is proactive in moving toward a GEM-style monitoring youth area watch program. Fund.

Executive Director’s Recommendation:
The report on approaches to community involvement commissioned by the Trustee Council in FY 2003 will not be available until the end of September 2003. The report is expected to provide the basis for a thorough examination of the role of community involvement in the GEM program to be conducted by the Executive Director during FY 2004. Until that examination is complete, funding of community involvement projects will be based on responsiveness to the criteria in the FY 04 Invitation and past and future utility for implementing the GEM program. The Kodiak Youth Area Watch proposal is well grounded in the principles of the GEM program and shows a
keen understanding of the concepts of the roles and needs for community involvement in long-
term monitoring programs. The connection to the GEM Science Plan is clear, and the
recommendations of the STAC are very positive. Fund.
**Project:**  
*Schoch-FY04-Oceanographic & Ecological Process*

**Project Title:**  
Linkage Oceanographic and Ecological Process in Nearshore Environments

**Location:**  
Lower Cook Inlet and Kachemak Bay

**Proposer:**  
Carl Schoch

**Proposer Affiliation:**  
ADFG

**Lead Agency:**  
ADFG

**Funding Recommendations:**

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**Abstract:**

Our goal is to investigate the processes that generate conspicuous patterns of diversity and species composition in the nearshore of Kachemak Bay and how ecological communities respond to variation or modification of these processes. We hypothesize that there are two principal physical forces driving community structure and spatial distribution of kelp forests in Kachemak Bay: 1) the behavior of tidal and density driven coastal currents including the ACC, and 2) the nearshore wave and sediment dynamics. We will: 1) Evaluate the effects of seasonal to interannual variability of the ACC in Kachemak Bay; 2) Quantify habitat change as a function of wave energy and sediment transport and how these are modified by anthropogenic processes such as coastal development and human use; and 3) investigate the role of coastal currents and habitat change on kelp forests, and the spatial and temporal variability of selected populations of fishes, invertebrates, and plants.

**STAC Recommendation:**

This is a promising proposal, but nearshore monitoring proposals were not invited. The opportunity to invite nearshore proposals awaits the analysis of the Bodkin and Dean report, and results of other nearshore projects funded in FY 03. This proposal focuses on the influence of hydrodynamics on kelp communities. An interesting set of questions, but, if that were all it did, it would be very expensive. Tidal corrections need to be considered when proposal is resubmitted in the future. However, it has good matching funds and talent commitment from federal sources and it establishes an interface between long-term physical and biological monitoring that has great promise. Do not fund.

**Executive Director’s Recommendation:**

Although the proposal addresses needs established in the GEM Science Plan for the nearshore, it is premature with respect to the GEM process, which does not envision establishing projects like this one —until the information on nearshore monitoring gathered in FY 2002 – FY 2004 can be assimilated into a nearshore synthesis. Do not fund.
Project: Schumacher-FY04-GEM Infrastructure

Project Title: Building the Infrastructure for the Gulf Ecosystem Monitoring (GEM) Program - Submitted Under the BAA

Location: GEM Monitoring Region-northern Gulf of Alaska

Proposer: James Schumacher Proposer Affiliation: Private Enterprise

Lead Agency: NOAA

Funding Recommendations:

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Abstract:

This proposal addresses modeling within the GEM Program, and the infrastructure necessary to implement and maintain a monitoring and data dissemination system for the northern Gulf of Alaska (NGOA). Agreement on an interdisciplinary strategy is critical to effective resource management and problem solving in the NGOA. Use of the GEM infrastructure in support of models and observations will identify and refine measures to describe, manage and predict the status and health of the ecosystem, provide data as information to managers and coastal communities, and communicate publicly the current state of the ecosystem. Our goal is to provide consensus recommendations to EVOS on:

1. Creation of an integrated ecosystem model for the NGOA;
2. Understanding spatial and temporal scales for implementing an ecosystem monitoring program, and;
3. Implementing the GEM infrastructure, including identification of strategies for cooperation, coordination, integration, and cost efficiency.

STAC Recommendation:

This is part of two separate proposals (McNutt’s and Schumacher’s) because budgets are from two separate institutions. The proposals must be considered together. This is an effective proposal to establish a framework and infrastructure for a modeling base for GEM. This proposal directly addresses the Invitation Part C. Modeling, and in particular it is in direct response to example #1. (p. 6) “Building the Infrastructure Necessary to Create, Develop and Maintain the GEM Model.” The proposal will do three things essential to the success of GEM: (1) create an integrated ecosystem model for the NGOA, (2) understand spatial and temporal scales for implementing a biophysical monitoring program, and (3) implement the GEM infrastructure, including identification of strategies for cooperation, coordination, integration and cost efficiency. This would provide GEM with an overall structure for modeling. STAC recommends that an objective be added for resource users to actively participate in the workshop along with the scientists. In addition, STAC questions the role of the student in the proposed work and asks that it be clarified. Finally STAC recommends that activities be focused from the start on the crux of the modeling problem, which is how to provide information of use to managers from the GEM monitoring program. Fund contingent on receipt of revised proposals addressing STAC recommendations and question.
Executive Director's Recommendation:
This proposal is an essential part of building the GEM Model. The GEM Model is the primary means of organizing GEM information so that it can be used in understanding the status of injured species, allowing natural resource dependent communities to anticipate change, and helping managers anticipate changes in populations of birds, fish and mammals. Proposal provides a comprehensive solution to the need to bring together a team of professionals who can guide the development of the GEM Model. In order to move forward the proposal needs to incorporate the recommendations of the STAC. Fund contingent.
Project: Short-FY04-Monitoring Exxon Valdez Oil & PWS

Project Title: Development of a Strategy for Monitoring Exxon Valdez Oil and other Contamination in PWS

Location: Prince William Sound

Proposer: Jeff Short

Proposer Affiliation: ADFG

Lead Agency: ADFG

Funding Recommendations:
FY04: $45,900.00
FY05:
FY06:

Abstract:
This project will evaluate alternative sampling designs and strategies for monitoring oil from the T/V Exxon Valdez remaining on beaches in Prince William Sound, along with other hydrocarbon contaminants from anthropogenic and natural sources, and will make recommendations regarding overall sampling design, duration and frequency. The recommended strategy will be optimized for statistical power based on existing knowledge of the distributions of hydrocarbons from known sources, and will include a means of increasing power as more knowledge is gained through sampling as monitoring proceeds. The recommended strategy will incorporate results from the Prince William Sound Regional Citizens' Advisory Committee's Long Term Environmental Monitoring Program, and will explicitly recommend how the results from this program may be efficiently augmented. The project proposed here will directly address a core concern of the GEM program, by determining the persistence of Exxon Valdez oil placed in the context of other hydrocarbons in the region. Fund lower priority contingent on resolution of outstanding reports.

STAC Recommendation:
This project will evaluate alternative sampling designs and strategies for monitoring oil from the T/V Exxon Valdez remaining on beaches in Prince William Sound, along with other hydrocarbon contaminants from anthropogenic and natural sources, and will make recommendations regarding overall sampling design, duration and frequency. The recommended strategy will be optimized for statistical power based on existing knowledge of the distributions of hydrocarbons from known sources, and will include a means of increasing power as more knowledge is gained through sampling as monitoring proceeds. A distinct advantage of this project is that two top scientists, Roger Green and Jeff Short, will provide a very solid basis for future monitoring for hydrocarbons of all sources. Optimizing sampling for maximum power to detect change is particularly beneficial for programs that the TC has chosen to support, e.g., the Regional Citizen's Advisory Committee mussel watch type program in PWS. The technical merits are good. The proposal is responsive to the invitation with relevance to management and community involvement. The qualifications of the Pls are outstanding. Fund contingent upon receipt of outstanding reports 00195, 01195, 02195, 00290, 01290, 00598, 01599, and 02543.

Executive Director's Recommendation:
Proposal would provide very useful information on how to incorporate the study of lingering oil effects into the GEM monitoring program, however the PI has eight overdue reports. Funding is contingent on receipt of acceptable drafts of overdue reports. Fund contingent.
**Project:** Spies-FY04-EVOS Damage Assessment & Restoration

**Project Title:** A synthesis of the ecological findings from the EVOS Damage Assessment and Restoration Programs, 1989-2001

**Location:** No field work

**Proposer:** Robert Spies  
**Proposer Affiliation:** NOAA

**Lead Agency:** NOAA

**Funding Recommendations:**

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**Abstract:**

This project is synthesizing the results from 12 years of post-spill study in the EVOS damage assessment and restoration programs in the context of anthropogenic and natural factors causing change in the northern Gulf of Alaska ecosystem. The results of the work will be an integrated synthesis book. The book will consist of three major sections: 1. The basic structure and function of the ecosystem, 2. How does it change over time and in response to disturbances? and, 3. The effect of the spill; a summary of the spill effects and recovery as well as how our understanding of the ecosystem has matured and what future path will help us better understand this valuable marine ecosystem? The book will be a major product of the EVOS restoration program and help set the foundation for the Gulf Ecosystem Monitoring Program.

**STAC Recommendation:**

This proposal is to continue funding to write a book of “Synthesis of the ecological findings from EVOS”. This project proposes to do more than just summarize work that has been done. It actually proposes to produce synthetic results from EVOS-funded and other relevant research. Specifically they propose to have four sections in the book: (1) Structure and function of the ecosystem, (2) Ecosystem changes, (3) Effect of the spill, and (4) Implications. This synthesis directly answers the invitation Part A. Synthesis. As structured the Invitation asks for individual syntheses for each of the habitats, however, this overall ecosystem synthesis is definitely needed. The writing has been divided among a core writing teams, members of which have been contracted to write and oversee specific components of the book. All of the members of the team are well-respected scientists. In addition to Bob Spies, the rest of the team consists of Gordon Kruse, Ted Cooney, Tom Weingartner, Alan Springer, Jeep Rice, and Jennifer Allen. Unfortunately, this proposal seems to have fallen under the list of proposals submitted last year for multiple years, but that still need to submit a proposal this year. As such, the proposal as submitted is basically the same one from last year. It does not represent the progress that has been accomplished. The proposal does not even include a current version of the book outline with assignments among team members. There is no budget, just one large number. Fund contingent upon receipt and approval of a detailed proposal including milestones, time line and budget.

**Executive Director’s Recommendation:**

The project is to complete an ongoing synthesis of past work from the Restoration program which is expected to be an important tool for GEM program planning. The proposal needs to be revised to incorporate milestones, timeline and detailed budgets, and a current outline of the manuscript, and the most recent draft of the manuscript need to be provided before this project can move forward. Fund contingent.

Project: Stabeno-FY04-Bottom Up Control

Project Title: Surface Nutrients over the Shelf and Basin in Summer - Bottom up Control of Ecosystem Diversity

Location: Yakutat to Kodiak Island/Shelikof of Strait

Proposer: Phyllis Stabeno  Proposer Affiliation: NOAA

Lead Agency: NOAA

Funding Recommendations:
FY04: $49,500.00  FY05:  FY06:

Abstract:
This proposal is for continuation of Project 030654 funded in FY03. Our goal is to better understand the extraordinary variability of nutrients (spatial, interannual and decadal), and factors controlling nearshore communities and zooplankton and juvenile salmon distributions in the northern GOA. We propose monitoring nitrate over the shelf and basin. Underway samples will be collected as part of the NMFS-OCC/GLOBEC salmon survey in July/August of 2004. This survey includes a transit across the central GOA and 10 cross-shelf oceanographic and juvenile salmon transects from Yakutat to Kodiak Island. This will be the broadest nutrient survey of the northern GOA. Nutrient maps will be used to support NPZ models and satellite-derived models of nitrate and new production, to examine mechanisms of nutrient supply such as mixing over banks and transport up submarine canyons, and to assist resource management of salmon and other commercially important species.

STAC Recommendation:
Stabeno and Mordy propose to carry out another surface mapping of nutrients in the Gulf of Alaska in July/August 2004. This will add another seasonal snapshot of nitrate over the central Gulf of Alaska and shelf that will be combined with other fisheries and plankton sampling that we be gathered underway during the annual NMFS/OCC/GLOBEC cruise. This will be the second year of these cruises. It is a relatively inexpensive add-on. I am not as optimistic as the proposers as to the usefulness of these data on determining decadal and interannual nutrient variability. These annual snapshots are aliased and could easily lead to erroneous results and conclusions. Their proposed work to determine seasonal and interannual variability of nutrients here needs to have a finer temporal resolution. This is a highly leveraged program and the investigators are very productive. Fund.

Executive Director’s Recommendation:
The proposal offers to continue a highly cost effective partnership with GLOBEC to investigate the transfer of fertilizer (nitrate) from deep ocean areas to nearshore areas where it can drive production of birds, fish and mammals. Fund.
**Project:** Thorne-FY04-Seafood Waste Discharge

**Project Title:** Impacts of Seafood Waste Discharge in Orca Inlet, Prince William Sound

**Location:** Orca Inlet, Prince William Sound

**Proposer:** Richard Thorne  
**Proposer Affiliation:** NGO

**Lead Agency:** NOAA

**Funding Recommendations:**
- **FY04:** $66,679.00
- **FY05:** $102,470.00
- **FY06:** $99,948.00

**Abstract:**
This proposal brings together several entities with concerns over the impacts of seafood waste discharge into Cordova Harbor (Orca Inlet). The Prince William Sound Science Center (PWSSC) is acting as the facilitator of this effort because of its strategic location and long-term interest in the problem. Primary collaborators are DEC, ADF&G and Cordova seafood processors. Anticipated collaborators include the Native Village of EYAK and the City of Cordova. The proposed research will investigate possible impacts seafood waste discharge through a series of experiments that will evaluate the nearshore community response to alternate techniques of seafood waste discharge, including different grind sizes and whole carcasses, as well as a pile remediation study. These experiments will not only aid our understanding of the historic impacts, but will form the basis for a more healthy and productive approach to seafood waste recycling. A three-year project is proposed, with the first year devoted to baseline observations and experimental design.

**STAC Recommendation:**
This proposal brings together several entities such as the Alaska Department of Environmental Conservation (ADEC), the Alaska Department of Fish and Game (ADF&G), Cordova seafood processors, the Native Village of EYAK, and the City of Cordova with concerns over the impacts of seafood waste discharge into Cordova Harbor (Orca Inlet). The research would investigate possible impacts of seafood waste discharge through a series of experiments by evaluating the nearshore community response to alternate techniques of seafood waste discharge. The results of the research would aid the understanding of historic impacts and form the basis for a more healthy and productive approach to seafood waste recycling. The first year of the proposed 3-year project will be devoted to baseline observations and experimental design. This collaborative project addresses two invitation categories: Community involvement and nearshore. The study would also provide information for similar concerns in southeastern Alaska and complement ongoing ADEC studies in Ketchikan. The PI should consider application of these findings to the wider GEM area. Fund.

**Executive Director's Recommendation:**
The proposal would add the dimension of human effects to the development of the nearshore monitoring program, and it is a good match of GEM objectives to the management of an important pollution concern for coastal communities throughout the oil spill affected area. Fund.
Project: Vaughan-FY04-Hinchinbrook Entrance

Project Title: Monitoring the Exchange between Prince William Sound and the northern Gulf of Alaska at Hinchinbrook Entrance, submitted under the BAA

Location: Prince William Sound, AK

Proposer: Shari Vaughan

Proposer Affiliation: NGO

Lead Agency: NOAA

Funding Recommendations:

FY04: $75,045.00
FY05: $0.00
FY06: $0.00

Abstract:
One of the least understood physical processes that influences the biological components of Prince William Sound (PWS) is the exchange between PWS and the northern Gulf of Alaska (NGOA). The main objective of this proposal is to document seasonal and interannual changes in the flow patterns at Hinchinbrook Entrance, and to identify and understand the processes responsible for these changes. Support is requested for continued deployment of an upward-looking ADCP mooring in Hinchinbrook Entrance to create a time series of currents from October 2003 to July 2004. The mooring will be equipped with a CTD to create a time series of deep temperature (T) and salinity (S). To identify the dominant factors that govern the PWS/NGOA exchange, the mooring velocity and deep T/S time series will be combined with meteorological time series, numerical circulation model simulations, and physical data collect under previous and existing research programs in PWS and the NGOA.

STAC Recommendation:
Vaughan proposes to continue the installation of an upward looking Acoustic Doppler Current Profiler in Hinchinbrook Entrance to measure the exchange of water between the Gulf of Alaska and Prince William Sound. Since Prince William Sound might be an important nursery for much of the Northeast Pacific, this is an important problem in addition to being vital for understanding PWS and the impact of EVOS. This plan is seriously flawed. There is no explanation as to why she continues to not sample from July to October other than she needs to turn the instrument around. This could be done in a couple of days and since she is using a short term charter vessel, the ship time should not be a problem. Increasing the sampling interval to 3 hours from 2 should provide enough reserve power to last for the year. Why is there no plan to continue the observations beyond one year? No prior data were presented but only mentioned in passing. Are they doing repeated ADCP transects across the entrance over the tide cycles rather than just at two stages of the tide? How did they measure the Ekman transports? She really needs an ADCP in the upper layers to get both the baroclinic and Ekman transports. The PI acknowledged the previous critiques of the EVOS/STAC but discounted them and did not include them in this proposal. On the plus side, it is relatively cheap and well leveraged. There is not a great deal of published work coming out of this group and they have not had a very good record of cooperating with other regional researchers. Do not fund.
Executive Director’s Recommendation:
The project addresses the important objective of measuring how much water is exchanged between Prince William Sound and the Gulf of Alaska, however the methods do not offer the best available solution to the problem. The project is needed but it can only move forward in the context of a partnership with other parties, including UAF, PWSRCAC and OSRI/PWSSC, who can help resolve the technical problems identified. Defer.
Project: Walker-FY04-Marine Derived Nutrients

Project Title: Presence and Effects of Marine Derived Nutrients (MDN) in Stream, Riparian and Nearshore Ecosystems on Southern Kenai Peninsula, Alaska

Location:

Proposer: Coowe Walker  
Proposer Affiliation: ADFG

Lead Agency: ADFG

Funding Recommendations:

FY04: $149,935.00  
FY05: $149,935.00  
FY06: $149,930.00

Abstract:

Marine derived nutrients and carbon (MDN) delivered by salmon and other anadromous fishes are considered important drivers in riverine ecosystems, providing nutrients and food to these land-based food webs. However, we know little about the relative value of MDN compared to other nutrient and carbon sources (e.g., watershed-derived) in the Gulf of Alaska region. The objectives of this study are to develop a water chemistry proxy for monitoring salmon returns, and to track and measure MDN effects in stream, riparian and nearshore environments, on the southern Kenai Peninsula. We will accomplish this by linking stream chemistry, marine isotope signatures, marine terrestrial fatty acid ratios, and key animal and plant community density, growth, and lipid measures along a gradient from river mouth to headwaters in key watersheds. This study will be integrated with related studies proposed in other areas of southcentral Alaska to develop a broader retinal understanding and widely-applicable long-term monitoring program for the GEM region.

STAC Recommendation:

The proposal provides clear and workable approaches to collecting the data necessary to meet the needs identified for watersheds in the Invitation. It would provide geographic and physical contrasts between two (anadromous and non-anadromous) peat wetlands watersheds on the southern Kenai Peninsula, and it would establish a partnership with a resource management agency (ADFG) for operation of a salmon counting weir. Measures C, N, and S stable isotopes, and evaluates full suite of water quality measures containing N, P, C in resident fish, invertebrates and plants. Incorporates direct and re-mineralization routes of C and N through food webs. The proposal would have the ability to compare streams with and without salmon, and to look at production of salmon in a system where escapements are counted (Anchor River tributary). Measures of longitudinal distributions of MDN from headwaters to mouth would provide an important contrast. Measures of proxies cover water chemistry parameters and fatty acid levels and ratio of omega-3 fatty acids to total fatty acids in animals. Excellent ties to local community through Citizens Environmental Monitoring Program, (CEMP is EPA/ADEC funded). Prospects are good for learning how to measure and interpret linkages of coastal peat wetland stream systems to the marine environment in the Gulf of Alaska in ways that will have practical applications of very large potential significance. Fund contingent on a letter from the Principal Investigators agreeing to participate in a w watershed workshop will be held at the January 2005 GEM meeting, and to present an up-to-date report on progress and participate in comparison and evaluation of methods.
Executive Director’s Recommendation:
Proposal provides a resident stream fish dimension to the watershed habitat type. In order to move forward a letter from the Principal Investigators is required agreeing to participate in a watershed workshop will be held at the January 2005 GEM meeting, and to present an up-to-date report on progress and participate in comparison and evaluation of methods. Fund contingent.
Project: Wang-FY04-Building the GEM Infrastructure - Jia Wang

Project Title: Building the Infrastructure Necessary to Create, Develop and Maintain the GEM Model

Location: GOA including PWS and Cook Inlet

Proposer: Jia Wang

Proposer Affiliation: Alaskan University

Lead Agency: NOAA

Funding Recommendations:
FY04: $0.00
FY05: $0.00
FY06: $0.00

Abstract:
We propose to build the modeling infrastructure of GEM by developing high resolution circulation and lower trophic level ecosystem models for the northern Gulf of Alaska (Kayak Island to Shumagin Islands) with boundary conditions provided by an existing set of spatially nested models which span the entire North Pacific (grid resolutions range from 3 – 40 km). We propose to use the extant ROMS (s-coordinate) and MITgcm (MOM3-based, z-coordinate) with a resolution of 1 km, which resolves the eddy field (radius of deformation = 8-10 km) and small-scale embayment and topographic features. Both models will accommodate tidal and subtidal dynamics (and their interactions. Hindcasts of circulation, temperature, salinity, velocity, vertical diffusivity and particle tracks from these models will be made available through the web. Furthermore, hindcast fields can drive passive float tracking models, contaminant models, ecosystem models, and individual-based models of threatened species to aid focused studies by EVOS/GEM researchers. Such model results can serve to diagnose observations from moorings, CTD surveys, and drogue drifters, and those data serve to calibrate/verify the models themselves. A large body of data, gathered by colleagues under support from related programs (e.g. GLOBEC, SSLI, SEBSCC) presently exists for the Gulf of Alaska. We will extend our ability of the modeling effort to bring together data from ongoing programs observational programs. Following the development of the circulation models and model-data validation, model intercomparison and sensitivity studies will be conducted.

STAC Recommendation:
The state-of-the-art modeling effort described in the proposal is eventually certain to be useful to GEM, however the proposal is not responsive to the invitation call for developing an infrastructure supportive of developing the GEM model. There is little in this proposal that addresses infrastructure. Rather this is a proposal for basic science to nest a high-spatial resolution model inside existing circulation models for the North Pacific, which is well ahead of the current GEM needs. What exactly is to be learned from the progression of nested physical models in an ecosystem context is not well specified. Further the proposal does not address the need for “interdisciplinary cooperation and partnerships...etc.” as the proposed team is not well balanced from an interdisciplinary stand point, as it is heavily physical and only lightly biological. Do not fund.

Executive Director’s Recommendation:
The proposal did not provide a compelling response to the need to establish a process for building the GEM Model as identified in the Invitation for Proposals. Do not fund.
Project: Weingartner-FY04-Alaska Coastal Current

Project Title: Long-Term Monitoring of the Alaska Coastal Current

Location: Gulf of Alaska Shelf offshore of Resurrection Bay

Proposer: Thomas Weingartner  
Proposer Affiliation: Alaskan University

Lead Agency: NOAA

Funding Recommendations:
FY04: $69,249.00  
FY05: $69,249.00  
FY06: $69,249.00

Abstract:
This proposal is for monitoring temperatures, salinities, and spring bloom characteristics of the Alaska Coastal Current (ACC) from a mooring and monthly sampling at station GAK 1 near Seward. The project builds upon the 33-year record at this station. These data can predict ACC (baroclinic) transport anomalies so this variable is obtained indirectly. The results will be examined with respect to variations in terrestrial runoff and atmospheric heat fluxes. We will provide daily maps of satellite scatterometer-derived winds, make theses available to the public via a website, and archive them for future analyses. All variables affect biological production at higher trophic levels. The results have value for: interpreting continuous plankton recorder data to be obtained from ferries under GEM sponsorship, evaluating performance of numerical ocean circulation models, and conducting retrospective analyses of biological productivity. Logistics costs are shared with the NSF-NOAA funded GLOBEC program.

STAC Recommendation:
Weingartner proposes to continue the 33 year hydrographic time series, maintain a mooring and provide daily wind estimates for the northern Gulf of Alaska. He will also measure fluorescence and light transmission to estimate the primary production. He suggests that it will only be the spring bloom estimates rather than the entire year due to potential biological fouling of the instruments. The GAK1 measurements are vital for the determination of ocean climate conditions. The proposal is well written and Weingartner is productive. The basic work should be funded. The inclusion of the daily wind field processing is questionable. Why would mariners be interested in today’s (prior) winds rather than the predictions that are provided by the NWS? Providing real time winds is not a primary function of this program or an academic institution. Also, why are nitrate sensors not included in the mooring? These should prove to be more valuable than quasi-real-time winds. The leverage provided for this project is excellent and the requested costs are modest. Why isn’t the request for multiple years rather than just one year? Recommend continued funding this project. This project has repeatedly proved its value to the scientific community in the Northern Gulf of Alaska. Recommend funding at this level for FY04, FY05 and FY06.

Executive Director’s Recommendation:
The project has proven to be a cost effective partnership to enhance the value of one of the oldest time series of marine environmental data in the North Pacific. Proposal is to be funded at this level with these objectives for three years, FY 2004 - 2006. Fund.
Project: Willette-FY04-Monitoring ACC Dynamics

Project Title: Monitoring Dynamics of the Alaska Coastal Current and Development of Applications for Management of Cook Inlet Salmon

Location: Cook Inlet

Proposer: Mark Willette

Proposer Affiliation: ADFG

Lead Agency: ADFG

Funding Recommendations:

FY04: $89,800.00  FY05: $68,000.00  FY06: $27,900.00

Abstract:

This project will use a vessel of opportunity to collect physical oceanographic and fisheries data along a transect, across lower Cook Inlet from Anchor Point to the Red River delta. Logistical support for the field sampling will be provided in part by the Alaska Department of Fish and Game which has chartered a vessel annually to fish along this transect each day during July providing in season projections of the size of salmon runs returning to the inlet. The work proposed here is for long-term monitoring of oceanographic conditions in Cook Inlet as part of these ongoing fisheries surveys. Investigators will also use physical oceanographic data collected by the project to improve management of Cook Inlet salmon through improved in season salmon run projections. Several hypotheses regarding effects of changing oceanographic conditions on salmon migratory behavior will be tested. The oceanographic data collected by the project will also provide for valuable validation of remote sensing products, improved understanding of ocean dynamics in lower Cook Inlet, and a highly powerful statistical evaluation of the oil spill risk analysis models.

STAC Recommendation:

Contributions to the central GEM goal, recurring ecosystem status evaluations, will be continuation of the salmon stock data series for Cook Inlet. ADCP results will be collected on a schedule that is not necessarily coordinated with the tidal periodicities of flow in the Inlet. No scheme for “de-tiding” the data is proposed, but even if one is found, the weak, low-frequency signals of ACC flow may be difficult to extract from the transect series. CTD data may help to define water sources, however an explicit scheme for doing that needs to be laid out. Coordination with inlet CODAR (shore-based radars measuring nearsurface currents) programs is proposed, but availability of CODAR systems in '04-'06 is stated to be quite uncertain. Willette, a fisheries biologist for ADFG, and Pegau, a physical oceanographer at Kachemak Reserve, are competent and will get what can be gotten from the data. A proposal to run more transects for just physical data in some other months (October, January, April?) would give the data set some comparisons, a basis for writing up the results.

The important component of this proposal is testing hypotheses of the effect of the physical oceanography on the salmon fisheries of Cook Inlet. It remains to be established if the Anchor Point July transect is where long-term monitoring for GEM is desired. However, while this evaluation is occurring, the project should provide some short-term payoﬀ by directly relating real-time physical oceanographic conditions and movement of fish for management purposes. Continuous fixed-point measurements of physical data are needed to go with the observations proposed to be collected in this proposal. These continuous physical data should assist with de-tidings data. Funding half of the vessel charter is a signiﬁcant funding policy question. Is this a

normal agency expense that should be paid for as part of this project? Fund contingent on addressing STAC technical concerns and resolution of policy issue on funding transect.

Executive Director's Recommendation:
The proposal builds physical data collection into a long established (1979) fishing transect at Anchor Point in Cook Inlet. Anchor Point is at the biologically critical juncture of Gulf marine waters and glacially silted freshwater runoff. Proposal also provides an important link between salmon fishery management and physical oceanography that is expected to provide substantial benefits to economic development and enhanced recreational fishing opportunities in the oil spill affected areas of Cook Inlet. Funding a portion of the transect expenses is a fair distribution of responsibilities in our partnership with ADF&G which changes the uses and configuration of the vessel from a fishing charter to a joint fishing and oceanography charter. A revised proposal addressing STAC technical concerns is needed for this project to move forward. Fund contingent.