Science and Environmental Education Programs in South Central Alaska

Forging a New Alliance

Summary Report of the Oil Spill Recovery Institute Educator’s Workshop August 23-25, 2001 UAA Business and Education Building Room 207
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Summary
On August 2001, the Oil Spill Recovery Institute (OSRI), convened a group of educators from south central Alaska to discuss ways to improve education in the region. The group gathered at the University of Alaska Anchorage to share information about their existing programs, identify long-term goals for science and environmental education in the region, identify both overlaps and gaps in existing programs, and discuss and plan future potential collaborations. The group of educators included representatives from federal agencies, state agencies, non-profit organizations, tribal organizations, and one school district, and represented much of the geographic area affected by the 1989 Exxon Valdez oil spill. Over the course of the workshop the group generated potential collaboration ideas as well as concrete steps for immediate action.

This report provides a summary of the information shared and ideas generated at the workshop. The Oil Spill Recovery Institute hopes this report will serve as a useful public informational resource as well as a catalyst for further collaborative efforts.
Background Information

The Oil Spill Recovery Institute was established through Congressional legislation (Oil Pollution Act of 1990 and 1996 amendments) as a result of the 1989 Exxon Valdez oil spill. Its purpose is to improve prevention and response capabilities for oil pollution issues in the Arctic and sub-Arctic regions of the United States.

Policies and programs of the Institute are determined by an Advisory Board comprised of six federal and state representatives and eight representatives from the public and industry. OSRI’s research and development (R&D) program has three components: applied technology, predictive ecology and public education and outreach.

The applied technology projects are focused on the engineering and application of new products and technologies. The predictive ecology program focuses on the acquisition of knowledge and the identification of gaps in scientific knowledge that may be limiting the development of practical applications of technology. The public education and outreach component of the OSRI program includes sponsorship of workshops like this one, as well as fellowships, internships and other education projects. Its focus is to improve public and professional understanding and knowledge of both technology and ecology R&D efforts.

OSRI sponsored this workshop for several reasons. First, it has an interest in knowing what programs are in place and what kind of materials and information is already being disseminated in the South Central region. The Institute wants to encourage more collaboration among existing programs and better networking among educators in the region. OSRI also wanted to introduce itself to these educators. Finally, OSRI wanted to encourage oil pollution education curricula to be included in programs already in existence.

The Alaska Natural Resource and Outdoor Educators Association (ANROE) responded to a request for proposals issued by OSRI to organize this workshop. ANROE was awarded a contract after a peer-review proposal review process was completed. ANROE’s proposal included a subcontract to Green Fire, Inc. as workshop facilitators and primary authors of the workshop report.
Workshop Report

WORKSHOP GOALS
Four goals were identified for the workshop:
- To review the status of environmental and science education programs in south central Alaska.
- To identify the gaps and overlaps in regional programs.
- To identify opportunities for coordination and partnerships.
- To plan and begin implementation of a regional education program that will enhance citizens’ appreciation for the ecosystems around them and will include a focus on oil pollution issues.

These goals were explained to participants when they were contacted to find out their interest in the workshop, were specified on the workshop agenda circulated to all participants before the workshop, and were reviewed at the beginning of the workshop.

PRE-WORKSHOP SURVEY
In advance of the workshop, a survey was circulated to all invited participants to gather contact information for their agency or organization, to find out about their existing science and environmental education programs, and to determine both their perceived gaps in education programs in the region and their hoped-for outcomes for the workshop. (A copy of this survey is included in Appendix 1.) Responses to the survey were assembled in a pre-workshop compilation that was distributed to all participants before the workshop. (A copy of this compilation is included in Appendix 2.)

LONG-TERM GOALS
The first task the workshop participants faced was to identify long-term goals for science and environmental education programs in the south central region. The group was divided into four smaller groups, each of which included participants from the diverse geographic area represented at the meeting. Each group was asked to address the following question: What is your vision for science/environmental education for south central Alaska? To address this question, participants were asked to:
- List 2 goals that a regional science/environmental education program would have.
- List 3-5 essential components that a successful program would have.

Common goals and essential components for a regional science/environmental education program that emerged from the groups included:
- sustained funding for education
- programs that reach a full range of audiences
- increased involvement of people in science and stewardship activities
- incorporation of scientific research and Native knowledge into programs
After each group had had a chance to present their responses to the tasks, a discussion emerged about incorporating standards into education programs and about expanding adult education programs. Although no groups had included standards in the goals and essential components they identified, most groups had talked about standards. There was a general feeling in the group it would be a good thing to tie programs to standards. Comments were made that it might not take much to push programs so that they fully addressed standards and that ANROE’s *Targeting Excellence* publication is a good reference to use to see how to tie programs to state standards and national environmental education standards developed by the North American Association for Environmental Education (NAAEE).

In the discussion about the need for adult education, real estate developers and other business owners, as well as vacationing adults were identified as potential audiences for education programs. In addition, comments were made about the need to get business and government behind education efforts. It was suggested that educators might need to identify and use new terms to make education efforts less threatening and to get businesses and government to buy into these efforts, and that having a strong network would help businesses see that education efforts will affect broad audiences.

**EXISTING PROGRAMS**

Participants were able to report about their programs through a pre-workshop survey (see Appendix 1). Results of this survey were distributed to workshop participants before the workshop so that they could read about others’ programs beforehand. (See Appendix 2 for a copy of the pre-workshop survey compilation.) During the meeting, participants were also given the opportunity to talk more about their programs and to answer questions from the rest of the group. This portion of the workshop ended up taking much more time than had been allocated in the agenda, and the major criticism about the workshop that day was that this portion had run-on so long. At the same time, many people cited the fact that they’d had the opportunity to hear about each other’s programs as one of the highlights of the day.
IDENTIFYING OVERLAPS AND GAPS IN EXISTING PROGRAMS

After being divided into smaller groups made up of people with mixed levels of experience in science and environmental education in the region, participants were asked to work in their groups to identify overlaps in existing programs and, afterwards, to identify gaps in existing programs.

Specifically, groups were asked to complete the following tasks/answer the following questions related to overlaps.

- List the goals and types of programs that several groups have in common.
- Do any of these overlaps have regional appeal?
- To what extent are these overlaps
  a) duplicative efforts?
  b) fertile ground for collaboration?

Then they were asked to complete the following tasks/answer the following questions related to gaps.

- List the gaps that appear in existing programs, especially as they relate to vision goals.
- What are some of the constraints that make these gaps difficult to fill?
- What are some creative ways to overcome these constraints?

In the discussions of overlaps, a lot of fertile ground for collaboration was identified. Among these potential areas for collaboration were the following:

- training
- integrating Native knowledge
- incorporating scientific research information
- involving people in collecting data/monitoring work

(For a full accounting of the information generated by each group, see Appendix 4.)

In the discussions of gaps, the most frequently mentioned gaps were:

- Audiences not being reached (particularly high school students, adults, and young children)
- Communication
- Lack of knowledge of how best to incorporate Native knowledge
- Funding

The most frequently mentioned constraint—mentioned by every group—was a lack of funding.

The creative solutions suggested by the groups included:

- Promote family learning situations.
- Develop a regional network among environmental educators.
- Partner regionally to search for money. Look for bigger projects.
- Trade environmental education services to different communities in south central Alaska.
- Develop a “Traveler’s Guide to the Nature of Alaska” as a collaborative project.
- Develop a thematic approach.
- Learn how to “play the game” and “schmooze” to bridge the gap between formal and non-formal arenas.
- Use Elders and senior citizens in youth education efforts.

(For a full accounting of the information generated by each group, see Appendix 4.)

**POSSIBILITIES FOR COLLABORATION**

The entire group brainstormed the following list of possibilities for collaborative efforts:

- Team effort in implementing environmental education/environmental monitoring.
- Develop an information network to find resources we need/find out what others are doing.
- System for delivering these resources.
- Funding sources—way to let them know we exist—and as a network/sustainable entity.
- Better incorporate Native knowledge and Native culture.
- Cross-training (including training of trainers, professional development, and monitoring methods)
- Regional framework for content (e.g., oil pollution issues).
- Integrating research.

Afterward, the group prioritized the potential collaborative efforts. They chose three potential collaborative efforts to develop more fully:

- Communication
- Funding Sources and Marketing
- Integrating Research (scientific and traditional knowledge)

The group then brainstormed a series of questions for each of these potential collaborative efforts. Finally, the group divided into three smaller teams with each team taking one of the potential collaborative efforts and series of questions to discuss.

**Communications**

The team recognized the need for improved communication among people doing environmental education/environmental programs—“internal” communications—as well as the need to improve communications between people in this group and those outside it—“external communications.”

The team came up with a number of ways to improve both “internal” and “external” communications. Among the suggestions for improved “internal” communications were the possibilities of:

- Using the ANROE website
- Using the ANROE listserve
- Using the ANROE newsletter
- Using the National Marine Educators Association listserve
Establishing a separate listserv for south central Alaska educators
Maintaining an updated contact list of participants at this workshop
Circulating a report from this workshop to participants and also posting it on the Web
Establishing links between represented organizations and resources such as the EPA website and NAAEE website. (See Appendix 4 for a full list of all the possibilities generated by the team.)

Members of the larger group suggested that there should also be an article in the ANROE newsletter about this workshop.

To improve “external” communications the team suggested tapping into the CIIMMS website, which is a forum for statewide scientific information exchange. The team also proposed the possibility of making presentations at conferences, such as the Alaska Forum on the Environment, and looking into potentially networking with environmental organizations, such as the National Wildlife Federation and Sierra Club, as well as the Alaska Women’s Environmental Network, Alaska Conservation Alliance, and Alaska Conservation Foundation.

Funding Sources and Marketing
This team was asked to summarize all of the potential funding sources that had been mentioned during the course of the workshop. They were also asked to discuss the best way to approach funding sources, to flesh out what a “Map to the Nature of Alaska” might look like and what audiences it might serve, and to discuss what a regional framework for content might look like.

One of the key elements this team identified was creating a visible network. Some of the ideas they had to accomplish this were to develop a unifying project and sustainable funding and to develop some sort of “branding” so that no matter which educational institution people visited in the network they would see it was part of some larger entity. The team also suggested creating something akin to the Alaska Humanities Forum that would sponsor exchanges between universities, scientists, environmental educators, and teachers and would integrate Native knowledge into its programs. Such an undertaking might also generate interest among potential donors. The working name the team suggested for this project was the “Alaska Science Forum.” Much discussion followed about what would be an appropriate name for such an entity and whether “science” would be a good or a disadvantageous term to use in the name. Members of the group also suggested other roles such an entity could play, including sponsoring local science conferences in particular south central communities as well as providing curriculum materials.

In fleshing out the nature map concepts, the team identified a number of potential funding sources for the project, including The Nature Conservancy, CIRI, oil companies, AMHS, Division of Tourism, AWRTA, visitor associations, and Chambers of Commerce. The team also identified potential items that could be included in such a map, including places to visit, descriptions of places and organizations, contact information for particular organizations, ecosystem descriptions, and field trip suggestions for teachers. The team felt that such a map ought to be developed by a group made up of representatives from each community and that the south central network ought to generate some sort of statement of support for
the project. Members of the larger group noted that the National Park Service has already done an Alaska ecosystem map that might be helpful and that The Nature Conservancy has identified hot spots that might be worth including on such a map.

**Integrating Research**

The Integrating Research team focused on the integration of both scientific research and Native knowledge into programs. The team was charged with discussing how to approach researchers, how to approach Native communities, who the potential audiences are, what the best way to get information out would be, and how to provide incentives to participate in the process.

The team generated separate lists of important criteria for incorporating research and Native knowledge into programs (see Appendix 4). During their presentation, team members noted that there were a number of criteria that cut across both categories, including correct information. They noted that there would need to be a quality control process to ensure that information—whether from research or Native knowledge—is used correctly and that information would need to be communicated in a way that’s accessible to people. The team also noted the importance for compromise on all sides.

The team was unable to answer the questions of how to provide incentives and how to involve people in the first place. But the team did think it important that before any scientific research gets funded, both education and Native knowledge should be part of the research proposal. They noted that the Ocean Alaska Science and Learning Center (OASLC) is set up this way and that the National Science Foundation (NSF) is already starting to think this way.

The team also recognized the need for multiple perspectives of Native knowledge to be expressed and that information being noted by researchers as “Native knowledge” should be reviewed by the Native council or governing tribe to make sure it is accurate. The team believed that there would have to be some procedure for contacting local tribes to be sure to reach the proper “authority” (the best person/people to provide local knowledge). The team thought that this process would need to be straightforward so that researchers can work on the questions they’re trying to answer while also incorporating the elements of education and Native knowledge into their work. There was also some discussion about the best way to get information out about this process, including a course, radio clips, a compact disc, and presentations at conferences. And the team recognized that the Alaska Native Heritage Center has grappled with many of these same issues and has developed a review committee that might serve as a model for this process.

Potential audiences identified by the team included the following:

- Alaska visitors
- Residents
- School children
- National audience
- International audience
- Congress/politicians at the national level
- Industry officials
- State and local officials
• Land use managers
• Resource users

Two questions they raised about these audiences were how to decide which research is appropriate and what is appropriate for each age group/audience.

**NEXT STEPS**
A series of next steps were generated by the group and people volunteered to work on each one. Here is a list of those next steps with the names of the people who are associated with each one listed in italics.

• Pitch “South Central Organization” to ANROE. Board Members present at this meeting will put together a proposal and circulate it to this group. Then they will present it at the November ANROE Board meeting. *Marilyn, Rick*

• Form a committee of people who want to work on the “South Central Organization.” *Marilyn, Stacey, Aaron, Leslie, Elaine (to a lesser extent)*

• Get hold of protocols for contacting Native communities (contact Violet, ANKN, others?) *Rick, Sabrina*

• Gather guidelines for working with researchers (Research Reserve Protocols, ARCUS, etc) *Rick, Rich, Sabrina, Lisa, Nancy, Elaine (to a lesser extent)*

• Establish a listserve for this group. *Nathan*

• Link websites between groups represented here as well as CIIMMS. *Nancy*

• Get report of this workshop out to workshop participants. *Nancy*

• Committee to pull together follow-up meeting at the Alaska Forum on the Environment Conference. *Nancy, Marilyn, Kim, Nathan*

• Article for next ANROE newsletter. *Not decided. Perhaps Nancy or Eric?*
**Final Evaluation**

At the end of the workshop, participants were asked to complete a one-page evaluation of the workshop. Overall, participants ranked the workshop in general, and its particulars, favorably. Almost everyone ranked each component of the workshop as either “good,” “very good,” or “excellent.” In addition, most people found the compilation of pre-workshop surveys “extremely helpful” and said that meeting and discussing the issues brought up in the workshop had been “very useful.” Every participant said that his or her knowledge about what’s going on in science and environmental education in south central Alaska had “greatly improved.” Several people cited the opportunity to get together with other environmental educators and discuss and brainstorm as their favorite part of the workshop.
Appendix 1

Pre-Workshop Survey
The Prince William Sound Oil Spill Recovery Institute’s Educator Workshop for South Central Alaska, August 23-25, 2001
Pre-Workshop Survey

Thank you for expressing interest in attending the Educator Workshop sponsored by the Oil Spill Recovery Institute. This workshop is being designed to bring together representatives from informal and formal education projects in rural south central Alaska to give them an opportunity to meet, become more aware of existing programs, and discuss potential projects or ways to work together on areas of common interest.

To help us all prepare for the workshop, please take time to completely fill out this survey and return it to greenfire@sprynet.com no later than July 31, 2001. The results of the survey will be compiled and mailed out to all participants in early August in order that we can read about each other’s educational programs in advance of the workshop.

Participant name(s)/Title(s):

Organization(s):

Contact person/Title (if different than participant):

Address:

Phone number: Fax number:

Email:

1. What is the mission of your institution?

2. What are your institution’s goals that are tied to science and/or environmental education?

3. Please describe the programs of your institution that are related to science and/or environmental education. Please include the geographic scope of your programs, as well as issues and themes that your programs address.
4. Please describe the audiences targeted by your education programs.

5. What, if any, other organizations do you partner with in delivering your education programs?

6. What gaps do you see in environmental education in the south central region?

7. What do you hope to get out of the workshop or hope will happen as a result of this workshop?
Appendix 2

Compilation of Pre-Workshop Surveys
A Word about this Compilation

This following is a compilation of all the results we received as of September 7, 2001 from the pre-workshop survey we sent out in early July. Several organizations’ results were not included in the original compilation that was mailed to all participants in advance of the workshop because they were not submitted in time. These organizations, included here, are: Bureau of Land Management, Glennallen Field Office; Chugachmiut; Division of Wildlife Conservation, Alaska Department of Fish and Game; and Pratt Museum/Homer Society of Natural History.

The compilation is organized in alphabetical order by organization or agency name. As you will see, we reformatted the information gathered by the survey, converting questions from the survey into statements for this document. In general, we merely copied exactly what respondents had written for each category and pasted it under the new headings. In a few cases, we added bullets to help standardize the format.

For most organizations and agencies, the survey respondent, workshop participant, and key contact were the same person. In the few cases in which there was a different contact person noted on the survey, this person’s name has been included in the “Contact Information” section for the organization or agency.

A couple of organizations included detailed program information, including the costs and duration of different programs. To keep the entries more consistent, we left out this specific cost and duration information.

If any information is missing from an organization or agency, it is because no information was provided to us for that heading.
Alaska SeaLife Center

Workshop Participant
Rich Capitan, Program Specialist

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Mission
The Alaska SeaLife Center is dedicated to understanding and maintaining the integrity of the marine ecosystem of Alaska through research, rehabilitation, and public education.

Institutional Goals Tied to Science and/or Environmental Education
Our goal is to connect students and the general public with ongoing marine research, and to help them understand the value of studying the marine environment, with an emphasis on how resulting data can help resource managers make better-informed decisions.

The focus is almost exclusively on the pelagic marine environment, with an organism-based approach to charting environmental changes. Most research centers on Steller sea lions, but there are ongoing research and education projects on sea ducks, rehabilitated pinnipeds, and use of telemetry to track marine vertebrates.

Description of Programs Related to Science and/or Environmental Education
The SeaLife Center (ASLC) offers a range of programs for students, tour groups, and Elderhostel participants. All are focused on ALSC research, exhibits, or animals, and concentrate on the Alaskan marine ecosystem (not on global marine science). Hands-on educational programs for school groups present components from ASLC research projects, methods for gathering and interpreting scientific data, and investigations of how Alaskan marine animals have adapted to their environment. [See bulleted list below.] In the popular “Nocturne” programs, groups sleep overnight at ASLC and participate in activities that teach topics ranging from bioluminescence to marine mammal adaptations. Daytime programs focus on seabirds, cephalopods, pinnipeds, and marine research methods.
- Self-Guided Adventures (any age group): Experience a dynamic environment, the Gulf of Alaska! Your class is invited to journey through the ASLC’s naturalistic habitats and exhibits. Trained interpretive docents and staff will be available to
answer questions and assist your group. Guided tours can be arranged (September–April only).

- **Cephalopods: “The Jet Set”** (grades 6 and above): This lab includes a squid dissection and lecture focusing on the tentacled members in the Phylum Mollusca. Once students have learned the ins and outs of squid anatomy, we will cook them up calamari style. This is a program that invites students to use all of their senses!

- **Marine Mammal Adaptations** (grades K-6): What is a Pinniped? What are the differences between Steller sea lions and harbor seals? Discovery Education instructors invite students to learn about marine mammal morphology and adaptations through the creation of a clay harbor seal or a Steller sea lion, sometimes while being observed by the seals and sea lions themselves. Appropriate for all classes.

- **Animals After Dark** (any age group): How do animals navigate, interact and communicate beyond the reaches of light? What is bioluminescence? Join Alaska SeaLife Center staff in exploring the darkest depths of the ocean and its creatures through a series of tactile, sound, and night light activities.

- **Birdbrains** (grades K-6): These avian activities focus on age-appropriate alcid (diving seabird) studies designed to make real birdbrains out of every participant! Experiment with feathers. Learn alcid morphology and adaptations through the creation of a clay Tufted Puffin. Gather seabird behavioral data, or avoid losing your egg in our predator/prey activity!

- **Pinniped Picnic/Training Game** (any age group): What is a calorie? Who burn calories faster – human students or Woody, our male Steller sea lion? Why? By comparing what students eat for dinner (a Subway meal) with what animals eat here at the SeaLife Center, students will discuss how humans derive energy from their food and how marine mammals utilize their diets. This program revolves around the topics of ongoing research projects at the SeaLife Center, and the techniques used to train marine mammals.

- **Real Time Research** (any age group): Allow students to become research scientist for the evening! This program introduces students to some of ASLC’s research and husbandry techniques. Students will work in teams and put the scientific method to the test. Students can investigate the structure and morphology of sea stars, observe Steller sea lions real-time through a live connection to Chiswell Island (a sea lion rookery), or prepare their own cellular slides.

- **Nocturne Programs**: Join in the overnight escapades at ASLC. Tour the Center and spend an evening honing observation skills and participating in hands-on marine science programs, then bed down between the seabird, Steller sea lion and harbor seal habitats! Each nocturne program includes your choice of two of the programs listed above, as well as plenty of time to explore the SeaLife Center.

A grant from the M.J. Murdock Charitable Trust has also allowed us to develop a web-based distance learning program called Project MASTER: Marine Animals and Satellite Telemetry for Education and Research. Students (and others) will be able to track the location and dive behavior of rehabilitated marine mammals that carry satellite telemetry tags. The web site should be up and running by fall 2001. Contact person is Tammy Breard at 224-6306.
This year, the SeaLife Center hopes to expand outreach to schools by developing programs that we can present off-site, especially during the winter months. This development may be facilitated by funding from the Ocean Alaska Science and Learning Center (OASLC), a partnership between the ASLC and Kenai Fords National Park that’s designed to promote research and education projects.

Besides student-focused programs, ASLC educators conduct programs for Elderhostel participants (including coordinating lectures by scientists and husbandry staff) and tour groups that visit. Interpretive programs at the exhibits and research displays during summer months help educate the general public.

**Audiences Targeted by Education Programs**
School groups (most groups are in the 3rd through 8th grade range), Elderhostel groups (55 and older), general public.

**Other Partner Organizations**
We have partnered with World Wildlife Fund in presenting a Steller sea lion day, with Susitna Valley Girl Scouts in developing a badge program, and participate in the Coastal America program as a Coastal Ecosystem Learning Center. The most formal partnership is with the National Park Service, as noted above.

**Gaps in Environmental Education in the South Central Region**
High quality outreach and distance learning programs, especially in-school programs that feature live animals.

**Hoped For Workshop Outcomes**
I hope we’ll be able to learn where our programs might overlap, get ideas for specific projects that we might work on with other organizations (as opposed to general ideas about what to do), and find out how various non-federal programs are supported.
Bureau of Land Management, Glennallen Field Office

Workshop Participants
No one will be able to attend.

Contact Information
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Mission
Multiple use resource management of public lands.

Institutional Goals Tied to Science and/or Environmental Education
BLM strives to realize healthier and more productive public lands through better informed citizens who are willing to participate and assist in solving complex environmental problems.

Description of Programs Related to Science and/or Environmental Education
Web sites, fairs, publications related to science, EE, and interpretation of various natural and cultural resources.

Audiences Targeted by Education Programs
All public land users, but with special emphasis on programs aimed at commercial users and impressionable youth.

Other Partner Organizations
Tread Lightly
**Mission**

The mission of the Center for Alaskan Coastal Studies is to foster responsible interactions with our natural surroundings and to generate knowledge of the marine and coastal ecosystems of Kachemak Bay through environmental education and research programs.

**Institutional Goals Tied to Science and/or Environmental Education**

1. Provide effective experience-based field science instruction to Alaska residents and visitors, with youth as the primary audience.
2. Provide the public and decision-makers with science-based information on critical environmental issues.
3. Serve as a model of land management and environmental education that balances human uses with protection of coastal environments.
4. Inspire citizens to make decisions and take actions that promote the health and integrity of ecosystems.

**Description of Programs Related to Science and/or Environmental Education**

- **Alaska Coastal Ecology (spring)** – Residential field program for grades 4-12 with participation with majority of participating schools from Kenai Peninsula, Mat-Su, and Fairbanks School Districts plus Anchorage private and charter schools. Themes: intertidal and coastal forest biodiversity and interrelationships. Issues: Beach etiquette to reduce impact on intertidal communities, human responses to a spruce bark beetle epidemic.


- **Peterson Bay Field Station Natural History Tours (summer)** – Kachemak Bay communities and visitors to Homer from all over the world. Themes and issues
similar to Alaska Coastal Ecology with more in-depth focus on processes of environmental change in relation to human activities and plant ecology and human uses.

- **Wynn Nature Center** – Guided hikes and special naturalist, children’s, and family programs during summer for Homer community and visitors to Homer from all over the world. Winter lecture series, children’s programs, and outreach to schools and youth programs in Homer area. Themes: plant and forest ecology, forest stewardship, winter ecology. Issues: Human responses to spruce bark beetle epidemic, habitat conservation for moose and other wildlife.

- **Junior Naturalist/Junior Ranger Programs** – Summer youth camps for southern Kenai Peninsula communities and Anchorage area. Themes: same as those for Peterson Bay Field Station and Wynn Nature Center summer programs.

- **Kachemak Bay Coastwalk/Coastweeks** – Annual fall citizen science event for Kachemak Bay communities to survey Kachemak Bay beaches, sometimes combined with organized clean-up. Being coordinated as Coastweeks in 2001 with a celebration of National Estuary Day and National Wildlife Refuge Week and a triennial Kachemak Bay Science Conference. Theme: Environmental change and human impacts Issue: stewardship.

- **Kachemak Currents**– Weekly public radio program for Kachemak Bay communities on various environmental themes and issues.

**Audiences Targeted by Education Programs**
Pre-school, Grades 4-12 (teachers and students), Kachemak Bay and southern Kenai communities, general public (Alaska resident and out-of-state visitors), also adult life-long learners (volunteer program, Elderhostel)

**Other Partner Organizations**

**Gaps in Environmental Education in the South Central Region**
- A coordinated effort to make educators and the public aware of field trip and outreach opportunities.
- A cohesive curriculum on Alaska’s coastal ecosystems and environmental issues (middle school/high school update to SeaWeek aligned with state science and social studies content standards and national environmental education standards)
- A communications network for center and programs with strong linkages to ecosystem-scale scientific research and environmental monitoring programs (e.g., EVOS/GEM).

**Hoped For Workshop Outcomes**
- The beginnings of an on-going communications network for southcentral environmental educators.
- Consensus on priorities for partnership/network tasks and projects.
- Concrete “next steps” to continue coordination and accomplish tasks and projects.
Chugachmiut

Workshop Participant
Christine Celentano, Environmental Program Manager

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Mission
To build tribal capacity to maintain and sustain a locally operated environmental management program in each community we serve.

Institutional Goals Tied to Science and/or Environmental Education
Environmental education has been the cornerstone to building awareness of environmental issues and how to face modern day challenges within Chugach Region tribal communities. Environmental concerns/issues as well as sound stewardship has been evident from time immemorial in the region. Traditional Ecological Knowledge is an important resource in each community and has been integrated into many “scientific” endeavors.

Description of Programs Related to Science and/or Environmental Education
The Environmental Program has done everything from creating culturally relevant educational materials on various aspects of environmental management to the development of training materials for tribes within the region and throughout Alaska. A few of the efforts included: A locally staffed Environmental Health Promoter and Tribal Environmental Specialist program; educational campaigns and training on household hazardous waste, indoor air quality, water quality, pollution prevention, wetlands, drinking and wastewater issues, resource contaminant issues and NEPA and NPDES; provided oversight and staff to the production of Seven Generations- A Community Environmental Assessment tool.

Audiences Targeted by Education Programs
Most of the programs were/are targeted for Chugach Region tribal communities, however there were two that were focused on tribes throughout the State of Alaska, the Seven Generations manual and the Wetland Educational Curriculum. All ages are and have been covered in past efforts.
Other Partner Organizations

Gaps in Environmental Education in the South Central Region
- Missing a South Central distribution system of information describing opportunities to participate in workshops, projects, field work being done close to or within village watersheds.
- Incorporation of traditional knowledge into science and environmental programs in village schools.
- Hands on science experiences for people of all ages in communities.
- More opportunities to Train trainers in local communities or villages.
- Long term and future based funding (endowment?) opportunities to allow ideally for partnerships and collaboration among south central Alaskan educators to develop and continue sustainable ecosystem based math, science and Alaska Native traditional knowledge educational programs.

Hoped For Workshop Outcomes
I envision this workshop as an opportunity to meet with folks from organizations with similar goals. Hopefully, the workshop will create an opportunity to better understand and identify existing resources and to provide the possibility for future coordination and collaboration whenever possible. Also, I would like to see work towards building a successful communication network which may facilitate a comprehensive scoping of potential partners, pre-project planning, cost sharing resources for implementation of EE projects, and enhancing a cross cultural education in South Central Alaska.
Cook Inlet Keeper

Workshop Participant
Joel Cooper

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Mission
Cook Inlet Keeper is a private nonprofit organization dedicated to protecting the Cook Inlet watershed and the life it sustains.

Institutional Goals Tied to Science and/or Environmental Education
Keeper’s programs unite individuals and groups through water quality monitoring, environmental education, and effective advocacy, to give citizens the tools they need to promote clean water in the 47,000 square mile Cook Inlet watershed.

The objectives of Keeper’s Citizens Environmental Monitoring Program are to:

- inventory baseline water quality in the waters of Cook Inlet Basin;
- detect and report significant changes and track water quality trends;
- raise public awareness of the importance of water quality through hands on involvement.

Description of Programs Related to Science and/or Environmental Education

- Keeper’s Watershed Action Program: Focuses on two fronts: promoting good public policies which enhance, protect and restore habitat and water quality; and ensuring that individuals, businesses and agencies are accountable for and responsive to water quality and habitat issues in Cook Inlet.
- Watershed Watch Project: Keeper has created an “eyes and ears” network of citizens who report incidents of pollution and habitat destruction to Keeper’s toll free hotline. Keeper responds to reports by recording them in a pollution tracking database; reporting the incidents to relevant government regulators; and assuring agency response to each event.
- Beluga Watch Project: The Cook Inlet beluga whale’s population has declined over 50% in the past four years, and best estimates suggest 350 or fewer whales remain in Cook Inlet. Regulators have identified hunting as a primary cause of the decline, although oil & gas development, seismic research, urban sprawl, shipping, commercial fishing and other activities may also play a role in the population’s collapse. Keeper’s Beluga Watch Project works to restore Cook Inlet’s declining beluga whale populations by gathering information to better understand beluga whale behaviors and locations, and developing broad-based public support for beluga whale
conservation policies. In 1999, Keeper created a series of colorful glossy posters depicting beluga whales which encourage people to report any sighting of beluga whales to Keeper or the Center for Marine Conservation. Keeper is using this information, along with educational materials and advocacy, to ensure that Cook Inlet’s beluga populations are protected and sustained from further decline.

- **STOP: Stop Toxic Oil Pollution Campaign**: Keeper has litigated state oil & gas lease sales and weak Clean Water Act permits in Cook Inlet, and has organized events with hundreds of citizens to oppose indiscriminate oil & gas leasing. Now Cook Inlet Keeper is capitalizing on these accomplishments in its Stop Toxic Oil Pollution project which follows a three-tiered strategy to: 1) eliminate and/or alter state and federal oil and gas lease sales to protect water quality and sensitive habitat; 2) eliminate toxic discharges from Cook Inlet’s offshore oil and gas facilities; and 3) hold oil and gas facilities, shipping operations and pipeline operators accountable under state and federal environmental laws.

- **Cook Inlet Caring for Cook Inlet Program**: Caring for Cook Inlet Program strives to foster responsible stewardship in Cook Inlet residents, and to empower citizens with the legal, scientific and policy tools needed to protect the health of communities which rely on clean water in Cook Inlet. Education activities include:
  1. **Cook Inlet Watershed Network**: Watershed consciousness is on the rise among a broad range of Alaskans, and Cook Inlet groups are coming together in a unified Watershed Network to protect the quality of life in their communities. To strengthen this Network, Cook Inlet Keeper provides community-lead initiatives with the information, resources and services they need to improve the quality of life in their communities.
  2. **Clean Boating In Cook Inlet**: Heavy boating traffic in Cook Inlet includes tankers and barges, cruise ships, ferries, private recreational
boats, commercial fishing vessels, a result of high boat traffic, the Inlet faces environmental degradation from boat pollution such as oil and fuel, batteries, paint, sewage, fish waste, and marine debris. In April 2000, Cook Inlet Keeper produced a Clean Boating Guide and 2000 Tide Tables booklet which includes information on how to reduce and eliminate boating pollution from oil and fuel, antifreeze, batteries, solvents and paints, trash, and sewage. Keeper has distributed 5,000 of the Clean Boating Guides at marine supply stores and harbor masters throughout the Cook Inlet watershed.

Audiences Targeted by Education Programs
Keeper’s programs unite individuals and groups through water quality monitoring, environmental education, and effective advocacy, to give citizens the tools they need to promote clean water in the 47,000 square mile Cook Inlet watershed.

Other Partner Organizations
Current Citizens Environmental Monitoring Program partners include:
- Homer Soil and Water Conservation District
- Kenai Watershed Forum
- Anchorage Waterways Council
- Mat-Su Borough Planning Department
- Wasilla Soil and Conservation District
- UAA- Environment and Natural Resources Institute
- Cook Inlet Keeper
- Alaska Department of Conservation
- U. S. Environmental Protection Agency
- U. S. Geological Survey
- Kachemak Bay Research Reserve

Gaps in Environmental Education in the South Central Region
Coordination and collaboration which leads to the sharing of information.
Division of Wildlife Conservation, Alaska Department of Fish and Game

Workshop Participant
Robin Dublin, Project WILD Coordinator

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Mission
To conserve and enhance Alaska’s wildlife for Conserve and enhance Alaska’s wildlife and habitats and provide for a wide range of public uses and benefits.

Institutional Goals Tied to Science and/or Environmental Education
To provide useful and effective information, materials, and training opportunities that encourage learning about:
- the complexity of wildlife issues,
- the need for accurate information in discussion and decision-making, and
- an understanding that different values relating to wildlife exist and are part of the decision process.

Description of Programs Related to Science and/or Environmental Education
- Project WILD and Project WILD Aquatic workshops and materials
- Alaska Wildlife Curriculum
  1. Alaska’s Tundra and Wildlife
  2. Alaska’s Forests and Wildlife
  3. Alaska’s Ecology
  4. Alaska’s Wildlife for the Future
  5. Alaska’s Ecology Cards
- The Alaska Wildlife Notebook Series
- Teacher Resources web page with pertinent links throughout the Alaska Department of Fish and Game web site
- Several videos and teaching kits

Audiences Targeted by Education Programs
Formal and non-formal educators interested in wildlife conservation (primarily K-12). Hope to expand materials to Pre-K and biology and ecology majors @ universities in Alaska.
Other Partner Organizations

- Project Learning Tree *(The Division of Forestry, Alaska Department of Natural Resources)*
- ANROE
- USFWS
- Campbell Creek Science Center
- ANKN/AKRSI
- School Districts statewide
- Alaska Department of Education and Early Development

Gaps in Environmental Education in the South Central Region

Consolidated effort to coordinate in EE. (OK but needs further structure, ideally by ANROE.)

Also, I’d like us to survey all and find out what’s missing. Perhaps something to deal with noise pollution (the long-forgotten kind of pollution from the 70s) and perhaps something on issues-based investigations (invite Ted Munsch @ APU to talk about the curriculum he has—it needs a wider visibility in Alaska).

Hoped For Workshop Outcomes

I’d like to see what’s old and still being used, what’s new and what’s being created. I have newly updated materials to show and want to talk about kits in existence, kit development, etc. to avoid reinventing wheels and to see what’s needed. I’d also like to talk to folks about a new idea related to early childhood development.
Environment and Natural Resources Institute (ENRI)—University of Alaska

Workshop Participant
Elaine Major, Research Associate, Environmental Science

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Mission
The mission of ENRI is to collect, synthesize, and use natural science knowledge and data in examining and addressing natural resource and environmental issues important to Alaska and other northern regions; to coordinate its research and service activities with public and private agencies whose actions directly affect natural resources or the environment; to inform the public and decision makers of the environmental and ecological consequences of natural resources-related policy choices; and to participate fully in the programs of the University of Alaska Anchorage.

Institutional Goals Tied to Science and/or Environmental Education
As an information and applied research institute focused on Alaska’s environment and natural resources that was established by the Alaska State Legislature in 1972, the Institute’s chief goal is to provide sound scientific data and analyses for use in natural resource and environmental decision making. ENRI fulfills its mission through the research, teaching, and service activities of its multidisciplinary faculty and staff; public dissemination of its research results; provision of applied science outreach services; and coordination of its activities with other northern science institutes and repositories of technical information. Assigned to the College of Arts and Sciences, the Institute strives to include students and scientists from throughout the University of Alaska system in its research activities.

Description of Programs Related to Science and/or Environmental Education
All programs are statewide.

*The Alaska Natural Heritage Program* documents the distribution and abundance of ecologically significant plant and animal species, ecological communities, and natural features. It provides scientific information useful in planning, permitting, and environmental and endangered species reviews.

*The Alaska State Climate Center* provides public access to climate data on Alaska through a cooperative agreement with the U.S. National Weather Service. It is one of the
nation’s fifty state climate centers, and an ENRI scientist serves as the Alaska State Climatologist.

*The Arctic Environmental Information and Data Center* identifies and makes available information for use in scientific studies and environmental decision making. It is a founding and contributing member of the Alaska Resources Library and Information Services, a consortium library specializing in natural resources information and data on Alaska.

*Resource Solutions* fosters innovative and cooperative approaches for building agreement on public policy issues, especially those related to Alaska’s environment and natural resources. It provides information and workshops, process design, facilitation, strategic planning, and mediation services.

*Water Quality Monitoring Program.* ENRI is entering the fifth year of its rapid bioassessment program for cost-effectively gaging the health of the state’s flowing waters. Results to date include development of standardized sampling and assessment methods and creation of the Alaska Stream Condition Index – a tool that integrates biological, physical, and chemical information to evaluate stream water quality. To ensure the broadest possible application and consequent benefit, the methods have been adapted for use by professional biologists, citizens, and educators. ENRI has expanded outreach efforts to provide watershed education and training to citizens, educators, and tribes to promote environmental education and stewardship statewide. Outreach efforts consist of technical training workshops for tribes, professional development workshops for teachers, and providing demonstrations or presentations for the classrooms and the public.

**Audiences Targeted by Education Programs**
Teachers, students, public officials, professional biologists, and government agency representatives.

**Other Partner Organizations**

**Gaps in Environmental Education in the South Central Region**
Long-term funding for consistent delivery of information and technical support.

**Hoped For Workshop Outcomes**
Increased awareness about who is doing what so we can increase cooperative efforts and decrease duplicative efforts.
Kachemak Bay Research Reserve (National Estuarine Research Reserve)

Workshop Participant
Rick Foster, Education Coordinator

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Mission
To develop and implement research and educational programs that enhance our understanding of Kachemak Bay and its watershed and thus ensure that this estuary remain healthy and productive for Alaskans, the nation, and the diverse species that thrive there.

Institutional Goals Tied to Science and/or Environmental Education
- Serving as a regional education center and clearing house, in partnership with local education institutions, to promote excellence in environmental education, interpretation, and outreach of marine, estuarine, and watershed ecology.

- To design and implement an education program based on research science, that will promote stewardship of Kachemak Bay.

- To conduct education programs to interpret and instruct the public on the purpose, process, results, and context of research projects conducted in the region.

- To conduct educational workshops to ensure that the most current and relevant information is conveyed to the public in the most effective way.

- To address concerns of the community, by reviewing and interpreting to the public, the scientific literature on issues and interests relating to the Region.

- To coordinate with existing education programs to support, develop and maintain a high standard of marine and estuarine based environmental education.

Description of Programs Related to Science and/or Environmental Education
Kachemak Bay Research Reserve is involved in seven core educational programs. All but one, the Coastal Training Initiative (CTI) focuses exclusively on the Kachemak Bay region (i.e., southern Kenai Peninsula).
1. **Regional Education Alliance.** KBRR is taking the role of facilitating and sustaining a coalition of regional environmental education organizations known as the Kachemak Bay Environmental Education Alliance (KBEEA). Educational organizations and establishments offering some form of education, interpretation, and outreach related to marine or coastal topics are welcome to participate. KBEEA’s goal is to educate and inspire education and stewardship of Kachemak Bay, with a mission to be united in efforts to educate and inspire individuals and the Kachemak Bay community to actively participate in environmental stewardship as integral elements of a healthy sustainable Ecosystem. KBRR began with surveying existing programs, their audiences, venues, and plans. We are developing a matrix to provide a tracking system for improving the education, outreach, and interpretive activities in the Kachemak Bay watershed. With this information, KBEEA members can better plan and develop their programs to fulfill identified gaps and needs and build a comprehensive educational experience for visitors and residents alike.

2. **School Program Field Ecology (estuarine, wetland, and intertidal ecology).** KBRR provides various field ecology programs for local and visiting elementary and middle school groups. Programs are currently two-three hours in duration and occur in the spring. Future programs may be extended to include lab classroom activities provided in fall or with labs, throughout the year. In addition, potential improvements will be developing grade specific programs aligned with district and state standards, providing pre and post lessons, identified learning objectives, assorted learner-centered activities, and observational evaluation procedures. Teacher-training lab workshops will become a component of this exciting and evolving program.
3. **High School Mentor Program.** KBRR will provide opportunities for high school
and college biology students to work with KBRR scientists and educators to
participate in research projects and undertake scientific investigations. KBRR will
provide students a mentor and education adviser to aid them in developing and
implementing independent, research-based activities, at field sites and KBRR
laboratories. Project may lead to participation in Alaska Statewide High School
Science Symposium, National Ocean Bowl, Science Fair, or regional Science
Symposium. Students may receive class-time and science credits. The mentor
program will be administered by State of Alaska credentialed teaching staff who will
act as advisors to coordinate with students’ specific needs and coursework requirements.

4. **Regional Coastal Science Network.** KBRR created a Kachemak Bay regional
school-site coastal monitoring network as a vehicle to supply effective teaching
techniques with regional scientific information to educators. In addition, we support
their involvement in environmental monitoring as a “sense-of-place” and
“stewardship-building” activity. The network represents schools and community
educational organizations and three village Tribal Councils. Initial funding was part
of a climate change education grant enabling KBRR to train teachers in an
Alaskanized versions of The Potential Consequences of Climate Variability and
Change activities and GLOBE (Global Change and Observations to Benefit the
Environment) protocols. As a result, KBRR has been identified as a Alaska GLOBE
Regional Center for South Central Alaska on the Kenia Peninsula.

5. **Community Outreach, and Interpretation.** This is the most diverse and evolving of
KBRR’s education programs. The public is becoming informed of KBRR activities
and aware of fascinating aspects of Kachemak Bay’s ecosystems through such venues
as KBRR webpage, Bay Science Homer News articles, feature news stories,
interpretive displays, slide shows and lectures, and natural history hikes. A vital
component of the program is its capacity for two-way communication with the
communities enabling KBRR staff to keep abreast of relevant issues important to the
public. KBRR will collaborate with villages on the south-side of Kachemak Bay
(Port Graham, Seldovia, and Nanwalek) as well as with Homer and regional
communities along the road system.

6. **Kachemak Bay Research Network.** This network will enable the KBRR to provide
outreach and education programs to help the Kachemak Bay community to stay
abreast of on-going research projects as well as allow regional and visiting
researchers to remain well-informed of past and current research endeavors. Most
important it will assist researchers in providing outreach to the community about the
purpose, process, and application of the results of their research studies. A component
of this program is the Kachemak Science Seminar, a weekly “brown-bag” luncheon
lecture series.

7. **Coastal Training Initiative.** As part of a new National Estuarine Research Reserve
System (NERRS) program called Coastal Training Initiative, KBRR offers “Decision
Maker Workshops” (DMW) to provide technical information on current research and
best management practices related to resource uses in Kachemak Bay, the coastal regions of the state. Our target audiences include resource managers, planners, city council, tribal leaders, eco-tourism guides, K-12 teachers, commercial and recreation fishers, or others. Workshop topics focus on identified coastal management issues and topics such as beach habitat protection and restoration, GIS mapping technologies for resource management and planning, ecotourism standards for ethical marine wildlife viewing, fishery impacts of marine protection areas, and application of findings related to shoreline larval recruitment monitoring.

**Audiences Targeted by Education Programs**
- **General Public:** informal outreach and interpretive services, and clinics
- **Formal education:**
  - A. general academic programs—K-12 students,
  - B. advanced placement high school students,
  - C. higher education,
  - D. seniors education,
  - E. K-12 teachers.
- **Specialized educational workshops** for specific audiences such as:
  - L. citizen policy & decision makers,
  - M. professional resource managers,
  - N. sport-fish guides,
  - O. aquaculturists/mariculturists,
  - P. eco-tourism operators,
  - Q. others as determined by CTI market analysis and needs assessment research.

The KBRR Education Program is comprised of the following four program definitions:
- **A. Environmental Education** is an essential component of KBRR’s programs—each is designed with opportunities to promote:
  - awareness and appreciation of Kachemak Bay;
  - understanding of the Bay’s systems, processes, and related ecological research
  - skills in scientific inquiry, ecological monitoring, issue analysis, planning and decision-making;
  - stewardship.
  - L. **Education** when used to describe a specific program or activity,
  - refers to a process that focuses on knowledge and skills,
  - incorporates detailed learning objectives to be addressed,
  - includes nested evaluations,
  - is targeted to specific audiences (academic or specialized adult audience).
  - L. **Interpretation** refers to a process that:
  - usually focuses on awareness,
  - incorporates exhibits or field experiences targeted to a general audience,
  - may have limited evaluation components.
  - e.g., museum display, public lecture, lab lesson, a trail or intertidal walk.
  - L. **Outreach** refers to a process that:
  - focuses on awareness and appreciation,
may not be targeted to a specific audience,
- includes no tracking or evaluation component
e.g., a web page or newsletter.

**Other Partner Organizations**
- USFWS—Alaska National Maritime Wildlife Refuge
- Center for Alaska Coastal Studies
- Cook Inlet Keeper
- University of Alaska Anchorage: Kachemak Bay Campus, Kenai Peninsula College
- Sea Grant Marine Advisory Program (University of Alaska Fairbanks)

**Gaps in Environmental Education in the South Central Region**
- Coordinated field experiences to regional sites for visiting school groups and summer visitors with corresponding environmental education program (awareness to action).
- Focus on environmental education vs. environmentalist education from advocacy groups OR resource development education from mineral extraction and similar industry interests. How to identify the difference (e.g., distinguishing facts from values) of both provided information and curricula and of the educational programs.
- Residential outdoor education opportunities (4-5 day) for 5th – 6th graders; for high school researchers.
- Activities and learning opportunities for families with young children.
- Need learner-centered lessons, teaching techniques used—not instructor-centered (gather around and hear what I know about…).

**Hoped For Workshop Outcomes**
Meet with kindred spirits, coordinate with them, and fill in the gaps they and I have identified.
Kenai Fjords National Park/Ocean Alaska Science and Learning Center

Workshop Participant
Lisa Matlock, Education and Outreach Coordinator

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Mission
Kenai Fjords National Park’s mission is to protect the Harding Icefield, its outflowing glaciers, and the scenery and wildlife within the Park’s boundaries for all Americans and their future descendants.

The Ocean Alaska Science and Learning Center (OASLC) is a partnership dedicated to understanding and preserving the marine ecosystem connecting Alaska’s National Parks through research and education.

Institutional Goals Tied to Science and/or Environmental Education
Both institutions, but especially the OASLC, are focused on doing research to understand more about marine resources in this and other National Parks in Alaska followed by creating and presenting education programs about this research and the importance of research and science-based decision making in our Parks.

Description of Programs Related to Science and/or Environmental Education
The OASLC was established this year, so programs are in the development stage.

Kenai Fjords National Park offers school programs at the Exit Glacier area in the spring and fall for students from all over Alaska, although most of them come from the Kenai Peninsula, Anchorage area, and Mat-Su Valley. These programs focus on glacier and wildlife studies and Leave No Trace ethics. We offer intertidal walks, through a partnership with Alaska State Parks, at Lowell Point State Recreation Site in the spring. We partner with Kenai Fjords Tours to provide part of the Marine Science Explorers education program aboard the M/V Fjordland. We also provide classroom visits on many subjects throughout the southcentral Alaska area. Throughout the summer, we provide educational programs for many Elderhostel programs both at Exit Glacier and with Kenai Fjords Tours aboard the M/V Fjordland. We sometimes receive occasional requests for other education programs for other adult groups such as college field courses and the like which we provide appropriate staff for whenever possible.
Audiences Targeted by Education Programs
- Students K-12
- Students at the college and graduate school levels
- Elderhostel participants
- Scout groups
- Students and the general public from all over the world (eventually through web-based and other distance education projects, particularly)

Other Partner Organizations
- The Alaska SeaLife Center is our major partner in the OASLC and a partner in other programs
- Kenai Fjords Tours
- University of Alaska Fairbanks, Institute of Marine Sciences
- Elderhostel programs from Moose Pass, Sitka, Fairbanks, and Anchorage
- Local School Districts
- Alaska State Parks
- Other Universities (in process)

Gaps in Environmental Education in the South Central Region
We do not, generally, reach enough of the older students, high school to college. We also need to do much more in terms of web-based and other distance education about marine issues. Winter programs are limited due to travel during this season.

Hoped For Workshop Outcomes
Networking with other educators as we and the Alaska SeaLife Center begin our OASLC endeavor and a sense of what other programs already exist so we can complement existing programs and fill gaps in useful ways.
Kenai Fjords Tours’ Marine Science Explorer Program

Workshop Participant
Leslie Hines

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Mission
It is our goal to inspire understanding and appreciation of the Resurrection Bay ecosystem and to spur an interest in marine science.

Description of Programs Related to Science and/or Environmental Education
The Marine Science Explorer Program began as a notion: How could you turn a ninety-foot aluminum whale watching boat into a place where kids and adults could explore the marine environment? With some extra equipment, a bit of creativity, and a lot of hard work the M/V Fjordland was transformed from a sightseeing vessel into a floating laboratory/classroom. Passengers became active observers and explorers, inquiring into what makes Resurrection Bay a unique place. Now, merely six years later, over fifteen thousand students and adults have boarded the M/V Fjordland as Marine Science Explorers.

Materials presented focus on:
- Chemical and physical composition of sea water
- Adaptations of seabirds and marine mammals to their subarctic marine environment
- Resurrection Bay as a fjord and estuary ecosystem

Students will:
- Board the M/V Fjordland in Seward. (passenger capacity = 149)
- Collect seawater samples.
- Use thermometers and hydrometers to determine temperature, density and salinity of water samples.
- Use a Secchi disk to determine the turbidity of water samples.
- Use plankton nets to collect samples for examination under microscopes.
- Observe a controlled salt water environment in the intertidal aquarium.
- View mammals and sea birds in their natural habitat.
- Examine mounts of common Alaskan sea birds and discuss visible adaptations.
Audiences Targeted by Education Programs
We target students of all ages. In the spring and fall we primarily target grades 3-12. In the summer we work with Elder Hostel and some out of state High School and College groups, Boy and Girl Scouts and others.

Other Partner Organizations
We work directly with Kenai Fjords National Park Rangers. One of the on-board instructors each day is a Park Ranger. We also work with the SeaLife Center staff, complete NMFS surveys with older groups, and receive permits from Fish and Wildlife for our intertidal and plankton collections.

Gaps in Environmental Education in the South Central Region
We are interested in starting an on-board field trip program in Whittier in the spring of 2002. I will brainstorm for ideas and would definitely be interested in any ideas that I can get from others.
Native Village of Eyak

Workshop Participants
- Altana Olsen, Tribal Environmental Outreach Assistant (½ time)
- Stacey Graham, Tribal Environmental Outreach Assistant (½ time)

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Mission
The Native Village of Eyak is a federally recognized tribe located in Cordova. We provide environmental, natural resource, health and social service, housing and facility management, and cultural and education programs for our tribal members.

Institutional Goals Tied to Science and/or Environmental Education
The environmental department has expanded to include an education component to set up and implement environmental education in the Cordova Public School district.

Description of Programs Related to Science and/or Environmental Education
An environmental committee was established in November 2000 to solicit input from members on environmental themes to be implemented in the Cordova Public Schools. The themes include: subsistence, water, birds, past and future resources, wetlands, and recycling. These themes will teach the history to bridge the gap between youth and elders.

Audiences Targeted by Education Programs
The audience targeted for our environmental program includes the Cordova Jr.-Sr. High School and the Mt. Eccles Elementary School to implement the units into classroom studies.

Other Partner Organizations
The organizations we partner with include the Prince William Sound Science Center Discovery Room, Cordova Public Schools (elementary and high school), Chugach Regional Resource Commission, and Copper River/Prince William Sound Native Fisherman’s Association.

Gaps in Environmental Education in the South Central Region
The gaps we see in environmental education include lack of traditional Native knowledge and written history.
Hoped For Workshop Outcomes
Information to help enhance our education component and a network to work with.
Port Graham Village Council

Workshop Participant
Violet Yeaton, Environmental Planner

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Mission
The Port Graham Village Council is a federally recognized tribal government that was organized in 1961 to govern the Native Village of Port Graham. The Village Council provides its tribal members with economic, social, medical, and environmental services. The Council’s mission is to preserve the Village character, to provide opportunities to enhance the quality of life in the Village, and to protect the environment and subsistence based culture.

Institutional Goals Tied to Science and/or Environmental Education
As a result of the Exxon Valdez Oil Spill, the community has been actively participating in the EVOS Trustee Council in potential projects. The Exxon Valdez Oilspill impacted the Traditional Way of life as we once knew. We are addressing issues such as documenting Traditional Knowledge and preserving this knowledge which sustained our people for generations.

Description of Programs Related to Science and/or Environmental Education
The programs in the Village of Port Graham that relate to science or environmental education are:

- The Port Graham/Nanwalek Watershed Council is about gathering information through water quality monitoring, wetland function assessment, various data bases, and local/traditional knowledge that can be used to make informed management recommendations and decisions about wetland resources.

- The Port Graham Environmental Program is about building awareness about protecting our environment, being responsible for actions and actively participating in decisions that may impact our environment. We hope to educate our children in our traditional ways to instill our values of taking care our environment. There is also Environmental Health Committee in the community that meets monthly. The other environmental organization that Port Graham is involved in is a regional environmental committee, Nunagpet. Nunagpet was very active when it was originally funded by EPA, they were able to form its own board members, policy’s, memorandum of agreements with EPA, DEC agencies. Unfortunately, Nunagpet has been somewhat inactive because of lack of funding.
Audiences Targeted by Education Programs
The Port Graham Village Council Environmental program works with all ages in our community.

Other Partner Organizations
The Port Graham Village Council has worked with Federal and State agency organizations, non-profits surrounding our geographical area; (EPA, DEC, MMS, Kenai Peninsula Borough, Cook Inlet Keeper, NRCS). We also partnered with other Native organizations.

Gaps in Environmental Education in the South Central Region
Acknowledging or identifying the traditional ways of the Native people that teach people our ways of protecting the environment and sustaining it’s resources.

Hoped For Workshop Outcomes
To learn more about what research and projects are being done in our area. Also, how we can be more actively participants in research projects and learn what other communities are doing. Information and knowledge is empowering our communities.
Pratt Museum/Homer Society of Natural History

Workshop Participant
Gale Parsons, Education and Exhibition Director

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Mission
The Pratt Museum is dedicated to the process of education by exploring the natural environment and human experience relative to the Kachemak Bay region of Alaska and its place in the world. The Museum seeks to inspire self-reflection and dialogue in its community and visitors through exhibitions, programs, and collections in the arts, sciences, and humanities.

Institutional Goals Tied to Science and/or Environmental Education
- Stimulate life-long wonderment and curiosity through relevant, creative, and interactive educational programs and exhibitions.
- Encourage stewardship for the well-being of our cultural and natural resources.
- Share information and ideas with honesty and respect for diverse viewpoints to encouraged a more informed and responsible citizenry.
- Foster trust, responsiveness, and a spirit of cooperation between the Museum and our community.
- Promote institutional integrity, high professional standards, and fiscal responsibility through collaborative teamwork in all Museum endeavors.

Description of Programs Related to Science and/or Environmental Education
- A wide variety of programs and changing exhibits that relate to our mission and values.
- Long range exhibits about:
  1. Stewardship
     - Brown Bears of McNeil and the Kenai with remote visitor controlled live feed from McNeil River
     - Spruce Bark Beetle
     - Darkened Waters: Profile of an Oil Spill (Exxon Valdez Oil Spill)
     - Interactive biodiversity mural
  2. Fishing and Marine Harvesting
  3. Marine Mammals
  4. Crab species of Kachemak Bay and Gulf of Alaska
  5. Seabirds of Gull Island with remote visitor controlled live feed from the Island
  6. Aquaria with marine animals from Kachemak Bay
Interactive murals

- On-going programming with scientists, tradition bearers, and naturalists from Alaska and beyond, i.e. Richard Merrick (NOAA), Kate Wynn, Riki Ott, John Schoen.
- Scheduled tours for groups designed for the specific group, i.e. schools, oil company interns, elder hostel, eco-tourists

Audiences Targeted by Education Programs
Community members and visitors from around the world of all ages from 3 to eternity.

Other Partner Organizations

Hoped For Workshop Outcomes
Collaborative and funding ideas.
PWS Regional Citizens' Advisory Council

Workshop Participant
Linda Robinson, Community Liaison

Contact Information
PWS Regional Citizen’s Advisory Council, 3709 Spenard Rd., Anchorage, AK 99503
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Email: robinson@pwsrCAC.org

Mission
Citizens’ promoting environmentally safe operation of the Alyeska terminal and associated tankers.

Institutional Goals Tied to Science and/or Environmental Education
To educate citizens regarding affects of oil transportation and solicit citizen input.

Description of Programs Related to Science and/or Environmental Education
- Non-indigenous species in tanker ballast water discharge in Prince William Sound
- Long-term environmental monitoring to monitor the impacts of terminal facilities and crude oil tankers in PWS and the Gulf of Alaska.
- Community Impacts Planning, to provide a plan for communities experiencing technological disasters
- Dispersants effectiveness in our region.

Audiences Targeted by Education Programs
Citizens of communities affected by the EVOS.

Other Partner Organizations
- Community Impacts Planning – OSRI & CIRCAC
- Non-indigenous species – Smithsonian, USF&W

Gaps in Environmental Education in the South Central Region
Being new to this position – I can’t answer this yet.

Hoped For Workshop Outcomes
I hope to get an idea of what’s happening in this area and make connections with other people in this area of interest. Thanks.
Prince William Sound Science Center

Workshop Participants
- Nancy Bird, Vice President
- Aaron Lang, Education Coordinator
- Katie Olson, Education Assistant

Contact Information
Prince William Sound Science Center, P.O. Box 705, Cordova, AK 99574
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Mission
The mission of the Prince William Sound Science Center, an independent research and education institution, is threefold:
- To contribute to the comprehensive description, sustained monitoring and ecological understanding of Prince William Sound, the Copper River, and Gulf of Alaska.
- A commitment to maintain self-regulating and long-term biodiversity, productivity and sustainable use of renewable resources.
- To educate and inform the youth and the general public about the critical interdependence of the biology and regional economies of Alaska.

Institutional Goals Tied to Science and/or Environmental Education
The goals of the “Science of the Sound,” the education program at the Science Center, are to:
- Spark curiosity about the natural world
- Increase science and ecological literacy
- Foster stewardship

Description of Programs Related to Science and/or Environmental Education
“Science of the Sound” is comprised of several programs:
- The Discovery Room Program is a monthly science and environmental education program for elementary students in Cordova, Alaska. Each month students from Cordova’s elementary school come to learn about a different science or ecology theme.
- Outreach Discovery takes a modified version of the Discovery Room program to isolated villages in Prince William Sound.
- The Forest to the Sea summer camps offer residential ecology programs for 7-15 year olds. Camps is located on the Copper River Delta and students explore and study the many unique ecosystems of the area.
Throughout the year we offer Community Education Programs consisting of field trips, lectures, and citizen science projects for adults and families in the region.

**Audiences Targeted by Education Programs**

See above question.

**Other Partner Organizations**

- USFS Cordova Ranger District
- ADF&G
- Prince William Sound Community College
- 4H
- Cordova School District
- Chugach School District

**Gaps in Environmental Education in the South Central Region**

There is a need for more consistent programming in the isolated villages in the region. Efforts are limited by travel logistics and funding.

**Hoped For Workshop Outcomes**

I would like to know what similar programs are going on in the region. This should give us insight and ideas on how our programs can be improved. I would like to explore partnering possibilities especially in the isolated communities, as it is difficult for one entity to give consistent programming in these communities. Maybe efforts can be coordinated on a regional level.
Seldovia Village Tribe

Workshop Participant
Sabrina J. Volstad, Tribal Environmental Office Coordinator

Contact Information
Seldovia Village Tribe, Drawer L, Seldovia, AK, 99663
Crystal Collier, Executive Director
Phone: 907-234-7898
Fax: 907-234-7637
Email: svolstad@tribalnet.org

Mission
The EPA IGAP supports our Tribal Environmental Office. We wish to provide educational opportunities for our Tribal Members while incorporating traditional knowledge with scientific knowledge in order to assist with the changing environment.

Institutional Goals Tied to Science and/or Environmental Education
To develop programs that use knowledge to assist Tribal Members, young and old to preserve our culture and move us forward in our world.

Description of Programs Related to Science and/or Environmental Education
- The GLOBE program is a program that our institution endorses and has the ability through training to use. See the GLOBE website for more information on GLOBE at http://www.GLOBE.gov. This program is far-reaching into an international scope of involvement.
- The Environmental Office Coordinator received training on the GIS program that is available through ESRI. We have a the Kachemak Bay Ecological Characterization prototype CD in the Tribal Environmental Office for research purposes. However, we have not obtained the funding to place a computer buy the GIS program. This program deals with the Kachemak Bay Area.

Audiences Targeted by Education Programs
Audiences currently being addressed are the Elementary-12th Grade students in cooperation with Susan B. English School and the Seldovia Boys and Girls Club using the http://www.GLOBE.gov website and program. The EPA IGAP allows activities that include Tribal Member and Community concerns through acquiring information, studies and surveys regarding subsistence resources testing and results.

Other Partner Organizations
- Susan B. English School (Science Teacher-Janet Shepard for GLOBE)
- Seldovia Boys and Girls Club (Mark Janes- Area Director for GLOBE and other educational programs.)
Gaps in Environmental Education in the South Central Region

Programs seem to be in infancy; not widely available, especially in expandable languages. We need programs geared more towards the needs of the future—our children.

Hoped For Workshop Outcomes

It is our intention to bring programs to Seldovia through knowledge and expanded understanding of what is available and how to obtain help/information in getting programs available to Seldovia.
USFWS Alaska Maritime National Wildlife Refuge

Workshop Participant
No one from the refuge will be able to attend.

Contact Information
AK Maritime National Wildlife Refuge, 451 Sterling Hwy, Suite 2, Homer, AK 99603
Melonie Shipman, Environmental Education Coordinator (survey respondent)
Poppy Benson
Phone: 235-6961
Fax: 235-7469
Email: Melonie_Shipman@fws.gov

Mission
The mission of the USFWS is to provide leadership to achieve national net gain of fish and wildlife and the natural systems that support them. Focus of Alaska Maritime is seabird colonies.

Institutional Goals Tied to Science and/or Environmental Education
- Conducts fundamental research on seabirds and their habitats to provide better management and produce healthier and more vigorous animals. Also protects seabirds from dislocation and destruction of their habitats.
- Communicates information essential for public awareness and understanding of the importance of fish and wildlife resources, and changes reflecting environmental degradation that ultimately affect the welfare of human beings.

Description of Programs Related to Science and/or Environmental Education
- Environmental Education Programs in the Refuge:
  1. **Underwear for the Birds** (K-12): Discuss how man has used feathers and how birds use feathers. Identify the main types of feathers and their purposes. Use hand lenses to examine how feathers react to different substances. Act out a poem about the “lifespan” of feathers. (local)
  2. **Seabirds and their Amazing Adaptations** (grades 4-6): Meet the seabirds of the AMNWR and why they are important to protect. Learn about their special adaptations through an entertaining slideshow. Put the new-found knowledge to work as students assist in “building” a seabird. (throughout Alaska)
  3. **“Club Mud” Shorebird Field Trip** (grades 3-7): Flock to Mud Bay with the migrating shorebirds and learn to identify them with a variety of field guides, binoculars, and spotting scopes. Additional stations may cover their marvelous mudflat meals, resource partitioning, or banding as an aid to migration studies. (local)
  4. **Ecology of the Spit** (grades 3-7): Take a field trip to the Homer Spit and observe, with binoculars and spotting scopes, marine mammals and seabirds. Learn about the special adaptations of each for life at sea. Collect and discuss the impact of marine debris. (local)
5. **Wonderful Waterfowl** (grades 3-7): Visit Mariner’s Lagoon and observe the many species of waterfowl that visit the Homer area. Learn how banding programs allow researchers to track the migration patterns of waterfowl. (local)

6. **Intertidal Life** (grades 3-7): Start with a brief overview video which includes outstanding underwater footage of intertidal creatures in action. Visit Bishop’s Beach and investigate the types, location, and adaptation of the intertidal life. (local)

7. **Marine Debris** (grades 5-6): Experience the difficulties marine life faces when dealing with entanglement, plastic ingestion, habitat loss, and pollution through a variety of activities. A slide show and brainstorming discussion focuses on proactive remedies. (worldwide)

8. **Personalized Classroom Programs** focusing on seabirds, shorebirds, eagles, waterfowl, and their habitats, refuge elements (e.g., volcanoes, Pribilof Islands, Aleutian Islands), or marine mammals.
   - Stewardship Camps in St. Paul, St. George, Sand Point, and Unalaska during which similar topics are covered (area children grades 2-12).
   - Whale Fest in Kodiak. Gray whale migration, whale adoptions, and classifying (grades 9-12).

**Audiences Targeted by Education Programs**
See previous question.

**Other Partner Organizations**
Kodiak Whale Fest—Kodiak National Wildlife Refuge
Stewardship Camps—area Tribal Councils, school districts, corporations

**Gaps in Environmental Education in the South Central Region**
Proactive approach (e.g., pre cycling) marine debris.

**Hoped For Workshop Outcomes**
Greater sense of oil spill impact, refocusing away from one event 10-plus years ago to current issues with a preventative stance.
U.S. Fish and Wildlife Service

Workshop Participant
Maureen de Zeeuw, Fish and Wildlife Biologist and Office Outreach Specialist

Contact Information
USFWS, Ecological Services Anchorage Field Office, 605 W. 4th Ave, Room 61, Anchorage, AK 99501
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Mission
To conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.

Description of Programs Related to Science and/or Environmental Education
Numerous programs and products, both national and statewide, are available. These include curricula such as Learn About Seabirds, Arctic-Nesting Shorebirds, Teach About Geese, and a Wildfire curriculum. Classroom kits (trunks) are available for seabirds, shorebirds, songbirds and other subject matter. Annual live satellite field trips called “Wild Things” are produced nationally on an annual basis. For a listing of other programs, please contact me or the local USFWS External Affairs office, and see our website.

One program I particularly wanted to highlight here is the **Shorebird Sister Schools Program**, a large-scale, rapidly-growing, international, internet-based education program for schools and educators. The program includes a K-12 curriculum (Arctic-nesting Shorebirds), a website (soon to be completely re-vamped), and a moderated listserv by which students, teachers, research scientists, birders, and land/resource managers communicate with each other about their research and fieldtrip experiences with shorebirds and other wildlife and habitat issues. For instance, as the shorebird migration waves move north and south across the globe, students post their fieldtrip data from field observations of the migrations. The program began in Homer, AK, and now students and others are in touch with each other around the U.S., and with Canada, Mexico, Russia, numerous South American countries, Australia, and other countries. Students can learn about shorebird conservation and learn a variety of important academic skills through this program, as well as make foreign and domestic penpals and broaden their world view.

Audiences Targeted by Education Programs
The above-described programs target school-age youth (K-12), but there are some other programs, particularly nationally, that may focus on adult audiences.
Other Partner Organizations
We partner with a variety of local, state, and federal groups, and hope to increase our partnerships.
US Forest Service—Cordova Ranger District

Workshop Participant
Kim E. Kiml, Information Assistant, Interpretation & Education

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Mission
“Caring for the Land and Serving the People”

Institutional Goals Tied to Science and/or Environmental Education
National statements and directive:
• “We connect people to the land with by providing them the with the tools they need to take informed actions relate to sustaining natural and cultural resources.”
• “Sustainability of cultural and natural resources in forest, grassland, and aquatic ecosystems.”
• “Awareness and understanding of interrelationships in natural systems and between people and the land.”

Description of Programs Related to Science and/or Environmental Education
Each school year we partner with the Prince William Science Center and operate the “Discovery Room.” The Discovery Room is a “hands on” approach to teach science/environmental education for the Mt. Eccles Elementary School. There are 6 different themes during the year, trying not to repeat any one theme more than once on a 4-year cycle. We try to apply as much as possible the theme to our area (wetland, oceans, rainforest).

Audiences Targeted by Education Programs
• The Discovery Room is for the elementary school children.
• Shorebird Festival is for general audiences.
• Our hikes are also for general audiences.
• Summer Fun (Valdez) safety/hiking/minimum impact camping is for school age children.
• Elderhostel (Valdez) nature walks are for retired people.
• Evening Programs (Valdez) are for general audiences.

Other Partner Organizations
• Prince William Sound Science Center
• Valdez Museum,
• Valdez Parks and Recreation
Youth Area Watch

Workshop Participant
Randy Fleharty, YAW Coordinator/Technology Coordinator

Contact Information
Youth Area Watch, Chugach School District, 9312 Vanguard Drive, Suite 100, Anchorage, AK 99507
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Mission
Education. I am a teacher for Chugach School District. We have a program called Youth Area Watch (YAW) that integrates scientific research conducted in South Central Alaska with the schools in the area.

Institutional Goals Tied to Science and/or Environmental Education
YAW has students conduct research alongside and for the scientists. We also have a restoration portion that involves the local communities and their environment and ecology.

Description of Programs Related to Science and/or Environmental Education
YAW is a program run by the Chugach School District and funded by a grant from the Exxon Valdez Oil Spill Trustee Council. The program is designed to involve students in researching the effects of the Exxon Valdez oil spill. The program goals include:

- Give students "hands on" experiences with scientists and enabling students to make meaningful contributions to science projects occurring in Prince William Sound.
- Help increase communication between the scientists and the communities affected by the oil spill.
- Undertake research/restoration projects within oil spill affected communities.

Students from schools in the Chugach School District as well as students from Cordova, Seward, Valdez, Nanwalek, Seldovia and Port Graham can participate in YAW. A teacher from each school site acts as a site coordinator helping the students to gain training and understanding of the research projects.

Students will have the opportunity to be involved in a number of projects including: harbor seal biological sampling, blue mussel collecting and killer whale studies. Students will also undertake a local restoration project of their choosing.
Audiences Targeted by Education Programs
The students range from 6th to 12th grade. Limited space on research vessels and limited funds for transportation allows us to select around 25-30 students. Interested students must complete an application and will be selected based on the quality of that application.

Other Partner Organizations
Exxon Valdez Oil Spill Trusty Council, Alaska Department of Fish and Game, Alaska Native Harbor Seal Commission, Alaska SeaLife Center, PWS Science Center, Auk Bay Laboratory.

Gaps in Environmental Education in the South Central Region
Most of the students that I work with were either infants or not even born when the oil spill occurred. We need to educate them about the environment and help them to learn from the past. The recent oil spill that occurred should remind us of the importance of education and preparation.

Hoped For Workshop Outcomes
I want to network with people and learn of more potential resources and opportunities.
Appendix 3

Workshop Agenda
Oil Spill Recovery Institute Educator’s Workshop
AGENDA
August 23-25, 2001
UAA Campus, Business Education Building, Room 207

**Thursday, August 23**
5:30    Welcome/Introductions
5:50    Workshop Overview
6:10    OSRI Overview
6:30    Identifying Long-Term Goals for Science/Environmental Education in South Central Alaska
7:15    Dinner

**Friday, August 24**
8:00    Continental Breakfast
8:30    Review Agenda
8:40    Oil Education Materials
9:10    Existing Science and Environmental Education Programs in South Central Alaska
        Each group represented will have five minutes to elaborate on their programs.
10:45   Break
11:00   Identifying Gaps in Existing Programs
11:45   Identifying Areas of Overlap in Existing Programs
12:15   Lunch
1:15    Identifying Areas of Overlap in Existing Programs Concludes, Afternoon Introduction
1:30    Possibilities for Collaboration
3:00    Break
3:15    Begin Designing Collaborations
4:30    Wrap-up and Evaluation
4:45    Creek Habitat and Bioassessment Primer (outside, requires short walk)
6:30  Adjourn—Dinner on your own.

**Saturday, August 25**

8:00  Continental Breakfast

8:30  Review Agenda

8:40  Groups continue to work on collaboration ideas.

10:30  Break

10:45  Next Steps

11:45  Wrap-up & Workshop Evaluation

12:00  Adjourn

**Workshop Goals**

- To review the status of environmental and science education programs in Southcentral Alaska.
- To identify the gaps and overlaps in regional programs.
- To identify opportunities for coordination and partnerships.
- To plan and begin implementation of a regional education program that will enhance citizens’ appreciation for the ecosystems around them and will include a focus on oil pollution issues.

**Organization**

This workshop was organized by Eric Wade, Alaska Natural Resources and Outdoor Education Association (ANROE), and Dan Bogan and Luise Woelflein, Green Fire, Inc.
Appendix 4

Flip Chart Copy from Workshop Tasks
IDENTIFYING LONG-TERM GOALS

The task was to answer the following question:
What is your vision for science/environmental education for South Central Alaska?

To answer the question, participants were asked to:
- List 2 goals that a regional science/environmental education program would have.
- List 3-5 essential components that a successful program would have.

The flip charts created, by group, were as follows. Comments added by the groups as they presented are recorded in smaller type.

**Group 1: Nancy, Lisa, Randy, Stacey**

**Goals**
- Locate regional funding.
- Long-term stewardship/appreciation for your environment regardless of your location.
  We want people to be able to transfer the learning process to wherever they live, wherever they have a decision-making role.
- Reaching a whole gamut of audiences for pre-K to adulthood.
- Incorporating an ecosystem view by learning about each component.
  In South Central Alaska there are a variety of ecosystems and we want everyone, through their education, to learn about all of them. Perhaps through this network people could be direct to here’s the best thing for K level, here’s the best for 3rd grade, etc. And by the time they’ve gone K-12 they’ve learned about everything.

**Essential Components**
- Coordinator
  Assists with money, keeps stuff like this workshop happening, also helps with communication (#2)
- Regular communication/consistency
- Incorporating Native knowledge
- Dovetail with actual research
- Long-term evaluation of programs and short-term assessments.
  Continually evaluate and revise.
- Environmental Education must be interdisciplinary.

**Group 2: Katie, Rich, Sabrina, Elaine**

**Goals**
- Consistent delivery of information
- Education tied to both scientific and Native knowledge

**Essential Components**
- Long-term funding
- Coordinate efforts
• Improve education delivery via technology (distance education via internet)

**Group 3: Aaron, Leslie, Rick, Altana, Walt**

**Goals**
• Use environmental education to help the population to make informed decisions in regards to managing natural resources and protecting environmental processes.

**Essential Components**
• Improve decision making.
• Integrate education with current research
• Involve residents in the science.
• Integrated classrooms program from awareness to action for all ages.

**Group 4: Eric, Kim, Violet, Linda, Marilyn**

Envision a network delivering science and environmental education. The component of this would be:
• Visible, Consistent
• Relevant
• Knows about organizations and who, what they are about
• Sustained education effort
• Maintain awareness
• Knowledge of ecosystems (Western science and TEK and life experience)  
  Want to incorporate knowledge from personal experience as well as scientific research.
• More people active in stewardship, protection
• Networking

**The core group:** Last item (networking)

**A network of groups:** First three items (visible, consistent, relevant; knows about organizations; sustained education effort)

**Outcome of participation:** Last three items (maintain awareness; knowledge of ecosystem; more people active in stewardship, protection)

**Questions and Comments after the Presentations**

After presentations by all the groups, the following questions emerged.

**Standards**
Was there any discussion of standards—state or national—in the visioning discussions?

**Comments from members of the group:**
• Most groups talked about standards.
• It is one component of quality education.
• It’s one way to make obvious ties to the curriculum.
• Really need to tie programs to the standards.
• Often it doesn’t take much more to push programs to meet standards.
• ANROE’s *Targeting Excellence* publication shows how to tie to meet state standards and national environmental education standards developed by NAAEE.
• Science standards aren’t currently required or tested for…but it’s coming!

**Adult Education**

• Real estate developers and other business owners—they need education too!
• There’s very little for adult environmental education—but they want it. Adults on Kenai Fjords park tours talk about how they wish they could do the stuff kids do.
• National Watershed meeting made Elaine Major aware of how much Alaska needs to do strategic planning. We need to get business and government behind us. Perhaps there are new terms we could use to make it less threatening/so they buy into it.
• One of keys to working with industry is to have a network. They want to see that programs affect a larger audience. They’re not so interested in programs that are going to affect only a small audience/group.
IDENTIFYING AREAS OF OVERLAP

Groups were asked to complete the following tasks/answer the following questions:

- List the goals and types of programs that several groups have in common.
- Do any of these overlaps have regional appeal?
- To what extent are these overlaps
  a) duplicative efforts?
  b) fertile ground for collaboration?

Group 1: Marilyn, Lisa, Steve Hackett, Leslie, Linda

Common Goals

- Training for environmental educators broadly defined (interns, volunteers, interpreters, tour guides, etc.)
- Integrating Native knowledge
- Real time research
- Promoting stewardship
- Some place based, some very broad (national in scope)
- Reaching a variety of audiences
- More outreach and more networking
- All want more money
- More classroom extensions

Common Types of Programs

- Focused on age-specific groups
- Overlap of ecosystem focus-issues bring some attention (e.g. marine intertidal)
- Alaska school programs
  Have AK schools involved.
- Involving people in collecting data/monitoring
- Under-funded, under-staffed
- Facility focused vs. field/experimental focus
- May be limited by capacity

Duplication

- Place-based, very broad in scope
- Alaska school programs
- Administration marketing

Fertile Ground

- Training for environmental educators broadly defined
- Integrating Native knowledge
- Real-time research (scientists??)
• More outreach
• More networking
• Overlap of ecosystem focus
• Involving people in collecting data/monitoring
• Underfunded, understaffed

What is good environmental ed.? Everyone could be better—maybe this could be ground for collaboration.

Questions and Answers after the Presentation
• Protocol for process? If everyone adapted one,
• Could ANROE endorse “good” curriculum?
  ANROE has gone around and around on that.
• Have to convince funders we’re doing environmental education. If ANROE said “xyz” is good environmental education, then when people went for funding they’d be able to say that they do “xyz”—and thereby increase their chances for funding.

Group 2: Stacey, Kim, Christine, Rick, Nancy, Randy

Overlaps
Overlap in common delivery of science programs, curriculums, research, reporting to public and decision makers.

Regional Appeal
Science camps, Youth Area Watch, water quality monitoring, incorporate native knowledge into curriculums and understanding.

Duplicative Effort
Ecosystem monitoring protocol
Curriculums

Fertile Ground
Coordination of science camp, water quality monitoring, effective techniques for distributing research information, education.

Reporting out:
• Saw lots of overlap in delivery systems. Everyone has different type—but similar.
• There are regional appeals. Camps, YAW, etc. These models could go to other regions.
• Identifying duplicate efforts—primarily ecosystem monitoring. Plus everyone is writing curriculums.
• Lots of ground for collaboration. (see list)
• People here have talked about similar plans for future—vying for same role/
Right now there’s fertile ground for collaboration.

**Group 3: Rich, Elaine, Aaron, Joel, Sabrina**

*Goals and Programs in Common*

- Information delivery
- Monitoring
- Technical training
- Educational resources
- Outreach
- Promoting stewardship
- Traditional/Native knowledge

*Overlaps*

CEMP/GLOBE

Using same protocol, just difference in a few things. This could become tough thing to deal with. Yes, it’s overlapping but also different. One program’s not going to lower its standards to meet another group.

*Collaborate*

Use each other for outreach and training. Provide resources to each other.

**Group 4: Gale, Violet, Robin, Eric, Altana**

*Goals and Programs in Common*

- On-going research-monitoring/data collection
- K-12 audience, adults, communities
- Center/facility-based and locally relevant
- Outreach
- Developed curriculum/materials/program
- Common goal: healthy natural world
- Committed and professional people implementing programs

*Overlaps with Regional Appeal*

- Research and monitoring
- Watershed approach. Integration water quality, ecosystems and interdisciplinary approach.
- Skills (scientific, personal) development (communication, problem solving, issues based)
- Existing regionally specific materials and programs and curricula
- All trying to be marketable—meeting standards used in school districts; practical
- Existing regionally specific materials, programs, and curricula.
• Yes, there is regional overlap (e.g., many organizations doing beach/intertidal programs)

• The need to integrate traditional and local knowledge with western scientific-based programs. (Separate issue: Need teams to do this well with right combo of people.)

**Overlaps Duplication and Collaborative Possibilities**

• Materials for common overlap (e.g., beachcombers guide, “controversy in the classroom” pamphlet—develop it once and everyone uses).

• Collaborate on kit development.
  Some are boxes with stuff in them, others are really teaching kits. If someone develops a really good kit, how can we replicate it and make it available statewide?

• Lot of opportunities to partner in training, conferences, etc.

• Alignment of standards.

• Field testing.
IDENTIFYING GAPS

Groups were asked to complete the following tasks, if the following questions:

- List the gaps that appear existing programs, especially as they relate to vision goals.
- What are some of the constraints that make these gaps difficult to fill?
- What are some creative ways to overcome these constraints?

Group 1: Marilyn, Lisa, Steve Hackett, Leslie, Linda

**Gaps**
- Older students and adults not being served
- Common education goals/frameworks (consistency)
- Regional networking between environmental educators
- Access to current research (ERS) and technical understanding and translation to public
- Regional networking/marketing to schools and public
- Access to technology
- Access to consistent money
- Close partnerships with Native peoples to deliver Native science/knowledge

**Constraints**
- Distances to students/public (travel difficulties)
- Time and seasonal constraints
- Money!
- Staff and time
- Teachers overloaded with other priorities and not enough money
- Mission constraints

**Creative Solutions**
- Distance delivery (traveling educators, web, TV, kits, etc.)
- A regional network between environmental educators
- Look to Native corporations for funding and access to Native knowledge and specialists
- Big sexy initiative in regional environmental education (packaging) (e.g. “Alaska environmental education forum” like the Alaska Humanities Forum or the UKE)
- Define ecological literacy (framework) for the region and market to public
- Partner regionally for money (grants and such).
- “Traveler’s Guide to the Nature of Alaska” (road and ferry) with map
- Trading off our environmental education services to different communities in South Central Alaska.

Comments after Presentation
Kathy: Important to bring Native people in from the beginning. It’s a relationship you’re developing, not just a product.
Group 2: Stacey, Kim, Christine, Rick, Nancy, Randy

_Gaps_
Existing high school programs
Documented traditional knowledge, integration of knowledge into present programs
Personnel resources
Sustainable mechanism for acquiring funding
Dovetailing education programs with current research

_Constraints_
- Compartmentalization of high schools
- Not documented adequately
- Cultural differences in communication gap
- Funding—hard to acquire volunteers
- Finding scientists willing to share research before publication; sophistication and technicalities of research tools/concepts

_Creative Ways to Overcome_
- Encourage paradigm shift (e.g., shift in Chugach school district to science theme vs. chemistry class)
- Thematic approach
- Collaboration of educators

Group 3: Rich, Elaine, Aaron, Joel, Sabrina

_Gap:_ communication
_Constraint:_ money
_Gap:_ visibility
_Constraint:_ lack of coordination
_Gap:_ Not maximizing the strengths of each organization’s mission
_Constraint:_ human resources
_Gap:_ the audiences reached (type, same audiences)
_Constraint:_ appeal to certain people (lack of concern/interest)
_Gap:_ Overarching coordinating unit (by State; region; location)
_Constraint:_ typical time and money, who?

_Solutions_
- Take advantage of systems already in place.
- Promote family learning situations and values (across generations).
- Use elders and senior citizens to educate youth.

Group 4: Gale, Violet, Robin, Eric, Altana

_Gaps_
- Younger age group (3-8yrs old) materials and programs
- Lack of family programs
Integrating two disciplines

$, $,$ and lots of it. $ for sustainability also staff to develop and implement.

High school programs (dealing with changing interests and needs for teens)
  What will “grab” teenagers interest???

Collaboration

Cultural gap—new teachers cultural/community orientation

Lack of knowledge/skill in integrating Native knowledge. How to (process) of getting participation.

Building sense of trust between cultures and educator/non-educator (getting materials an non-certified teachers into schools).

Bureaucracy: the gap between formal and informal

Constraints

Younger group may not be together.

Lack of intergenerational teaching. Maybe not as strong as it used to be.

No materials; less organized programs; disconnect

Lack of knowledge/skills integrating Native knowledge.

Money

Solutions

Money: Look for bigger projects. Partner with organizations, share costs, go after larger pots of money to get more done. Think big.

Bureaucracy: Learn the game. Schmooze. Know administration people and personalities; ask for forgiveness; creative negotiation of policy.

Building Sense of Trust between Cultures: protocols to ensure ownership, task clarity. Knowing who to talk to.

Come up with creative solutions to get around obstacles.

Comments after Presentation

Non-Native people feel uncomfortable representing Native knowledge. ANKN might be good group to hook up with.

Think Big! It takes the same amount of effort to write a grant for $50K as $5K. We tend to think poor. There is no reason why, if we get good partners, that we shouldn’t get $50,000!
COLLABORATIONS

The group brainstormed the following list of possibilities for collaborative efforts:

- Team effort in implementing environmental education/environmental monitoring.
- Information network defined resources we need/find out what others are doing.
- System for delivering these resources.
- Funding sources—way to let them know we exist—and as a network/sustainable entity.
  
  Resolution? Other document?
  Multimission?
- Better incorporate Native knowledge in Native culture
  
  develop protocol?
  coordinate with biosampling?
- Cross-Training
  
  Train Trainer
  Professional Development
  Monitoring Methods
- Regional framework for content
  
  e.g., oil pollution issues
- Integrating Research

Afterward, the group prioritized the potential collaborative efforts. They chose three potential collaborative efforts to develop more fully:

- Communication
- Funding Sources and Marketing
- Integrating Research

The group then brainstormed a series of questions for each of these potential collaborative efforts. Finally, the group divided into three smaller teams with each team taking one of the each potential collaborative efforts and series of questions to discuss.

COMMUNICATION

Team: Nathan, Kim, Eric, Elaine, Steve, Linda

Questions

Communication

- Communication to what end? (Improve quality of environmental education in the South Central Alaska.)
  
  —reaching out to broader audience
  —avoiding duplication
—internal communication among educators and environmental programs
make sure it’s easy for all of us to interface (e.g., listserve—ANROE?—that’s kept
up to date; CIIMMS; ANROE website where members can post things)
CIIMMS is one place to go to find out about environmental issues in Alaska; good
way to let others outside this group that what’s going on

Network
• Do we want a network?
• Who will work on it/make it happen?
• Who isn’t here and needs to be brought in?
Training

Report from Team
As part of the discussion, we talked about:
  Networking among ourselves
  Networking to the larger environmental education community (Alaska, national)
Did not move on to audiences.

1. Internal communications
What exists? What could we tap into/add onto?
• ANROE website
  “web” board
  categorized posting
  have calendar of events
  limiting factor: open to all ANROE members only
  Managed by Ben McLuckie in Hoonah. Has job postings, camps, materials, etc.
  Plan to have resource guide on there. Fairly dynamic.
• Listserve (WestEd/ANROE)
  Establish listserve for South Central environmental educators (i.e., this group)
  ANROE—open to members
  Note: WestEd maintains listserve for free. We could easily set up a listserve
  through WestEd.
• Updated Contact List
• Workshop Report (on website/listserve)
• Conferences/Follow-up
  Tie into conferences:
    Statewide conference (tentative)
    Alaska Native Health Board Environmental Conference (Oct 2001)
    Alaska Forum on the Environment Conference (Feb 2002)
  • ANROE Newsletter (good for internal communication—share what we’re
    working on)
  • ANROE resource guide (www.anroe.org)
    National and state curricula
  • EPA EE website/resources
    www.epa.gov/enviroed
- Points raised by larger group:
  - What form will the final report of this workshop take?
    Should be hard copy plus put in pdf file and put on ANROE/OSRI website
  - There should be an article on this meeting for the ANROE newsletter.
  - We should use a South Central environmental educators listserv to create list of all our websites that each of us could link to.

2. External Communications

- CIIMMS
  — statewide scientific information exchange website (DNR/DEC)
  — Could include EE projects/programs/
  — Calendar
- Conference Sessions
  Alaska Forum on the Environment 2002/Rural Educators
- Look at Networking with Environmental Organizations (NWF, Sierra Club, etc.)
  AK Conservation Alliance (ACA)
  AK Women’s Environmental Network (AWEN)
  Alaska Conservation Foundation (ACF)
- “What’s Up” Listserve

INTEGRATING RESEARCH (Western Science/Native Knowledge)
Team: Altana, Nancy, Kathy, Sabrina, Rick, Rich, Lisa

Questions
How to approach researchers?
How to approach Native communities?
Who are potential audiences? What’s the best way to get information out?
How do you provide incentives to participate in the process?

Report from Team

<table>
<thead>
<tr>
<th>Research</th>
<th>Native Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>r RFP process integrated</td>
<td>r Correct information communicated</td>
</tr>
<tr>
<td>educate funding sources about</td>
<td></td>
</tr>
<tr>
<td>integrating both</td>
<td></td>
</tr>
<tr>
<td>r Compromise on both sides</td>
<td>r Knowledge not lost</td>
</tr>
</tbody>
</table>
Points made by the team during their presentation of the above information:

- No answer on how to provide incentives OR how to involve people in the first place.
- Make sure that before research gets funded, education and Native knowledge incorporation are part of the research proposal. OASLC is set up this way. NSF is already starting to think this way.
- Some things go across both “Research” and “Native Knowledge.”
  - E.g., Correct information—correct scientific info/correct info about Native knowledge. Need quality control process to ensure information is used correctly.
  - Info needs to be communicated in way that’s accessible to people.
  - Need involvement of both in research.
- There has to be compromise on all sides.
- Native knowledge: multiple perspectives need to be expressed. Information makes its way to Council/governing tribe to make sure it fits with Native knowledge.
- Contacting local tribes to reach proper “authority” (the best person/people to provide that local knowledge)
- Research: once add Native knowledge, education, permit process—how do we de-complicate this process so researcher can get the work done but still have these additional sides to the research project (liaison?)
- Other issue discussed: So we have all this information (processes to get out)—to whom do we get it out, what’s the best venue to get the information out? (course, radio clips, CD, conference, etc)
- Alaska Native Heritage center has gone through these same issues. They have a consensus group—any issues that come up go through this entire committee.

Potential Audiences

Didn’t get into audiences. Identified the following:

- Alaska visitors
- Residents
- School children
- National audience
- International audience
- Congress/politicians at the national level
- Industry officials
- State and local officials
- Land use managers
Resource users

One other question the group came up with:
How do you decide which research is appropriate? What’s appropriate for which age
group/audience?
FUNDING SOURCES & MARKETING

Team: Leslie, Aaron, Stacey, Marilyn

Questions/Points for the Team to Discuss
- Map
  - Media piece to show people what’s available (educational experiences)
    - Audiences: schools—field trip sites; tourists
- Regional framework for content
- Summarize “new” funding sources (from workshop)
- How do we approach funding sources?

“New” Funding Sources
- OSRI (seed funding)
- OASLC—association with National Parks
- USFWS Coastal Program
- USFWS Cost-Share Program/Challenge Grants
- Imaginarium (outreach)
- Administration for Native Americans
- EPA/ICAP
- CIRI/
- State Money—mini CARA
- Oil Companies
- Alaska Conservation Foundation ??
- National Park Foundation
- Prince William Sound RCAC?

Note: EPA put together a funding guide for Region 10 (AK, OR, WA). People can get it from the EPA website or directly from Pam Emerson.

How do we create a visible network?
- Need a unifying project (data collection?) and sustainable operational funding
  - e.g., Texas Birding Trail concept; Track of the Glacier (Wisconsin); Indian Country Map (Southwest)
- Develop “branding.”
  For example, if you go to the Alaska SeaLife Center, you see they’re a member of “xxxx;” then if you go to the Center for Alaskan Coastal Studies you see they’re also a member of “xxxx;” and so on.
- One big question: Who gets to be on map?
  One potential solution: Use the map in training. If an organization’s staff gets trained, the institution gets to be on map! 😊
- What is the role of profit-making entities?
- What do we offer?
Who we reach—funder exposure
What we are promoting

- Big Idea: An Alaskan’s Science Forum (i.e., like Alaska Humanities Forum)
  *(the exchanges sponsored by this would need to integrate Native knowledge)*
  - Universities
  - Scientists
  - Environmental educators
  - Teachers
  - Interactive program
  - Operating grants

Comments from group:
- Work on Name. “Science” not good to use. “Alaskan’s Nature Forum” better? Or better to use science? (disagreement on this)
- Bring in ARCUS, Bering Sea ecoregion people, etc.
- Local science conferences (Homer, Seward, Cordova)
- One function could be to provide curriculum materials.

Map
“*The Nature of Coastal Alaska*”
- Might get funding from The Nature Conservancy, CIRI, oil companies, AMHS, Division of Tourism, AWRTA, Visitor Associations, Chambers of Commerce
- Would include:
  - Places to visit
  - Descriptions of places/organizations
  - Contact information
  - Ecosystem information
  - Field Trip Guide—for teachers (Homer, Seldovia, Seward)
- Need a committee with representatives from each community to work on collaborative funding projects/proposals
- Needs statement for the network

Comments from the group:
- National Park Service has already done an Alaska ecosystem map. (Regional Office of National Park Service—GIS lab)
- Show The Nature Conservancy hot spots?
Summary list of websites with oil spill information, curriculum and additional links

www.pwssc-osri.org
Prince William Sound Oil Spill Recovery Institute
   Description of programs in three areas – applied technology, predictive ecology and public education and outreach. Solicitation of proposals for projects in these program areas are posted at this website.

www.oilspill.state.ak.us
Exxon Valdez Oil Spill (EVOS) Trustee Council
   Information about projects funded since 1991 by the EVOS Trustee Council in the aftermath of the 1989 Exxon Valdez oil spill. Section targeted at students (K-12), college students and professionals.

www.arlis.org/resources/resources.asp
Alaska Resources Library and Information Services
   Consortium library based in Anchorage that is the primary holder of materials from the Exxon Valdez oil spill.

http://response.restoration.noaa.gov/
NOAA Office of Response and Restoration
   This web site offers information on response and mitigation. There is also a page for kids with answers to questions, experiments, help for writing reports and other student-related information.

http://octopus.gma.org/surfing/human/oilindex.html
NASA website with activities on oil consumption, spills, and tankers.

NASA website on oil pollution – This one is mostly information and links to other web sites.

www.pwsrcac.org
Prince William Sound Regional Citizens' Advisory Council

www.cutter.com/osir/
Oil Spill Intelligence Report, Arlington, Massachusetts.
   Contains a weekly report on oil spills around the world and Oil Spill Basics: A Primer for Students… a fact sheet written for students and the general public. A sample of the headings included in this primer are:
   a) Yearly spillage
   b) Why does all that oil spill?
   c) What is all that oil used for?
   d) How does it spill?
   e) What happens to oil when it spills?
   f) What are the environmental impacts?
   g) What about prevention?
   h) What can students do?

www.vims.edu/bridge/pollution.html
"Welcome to the Bridge, where teachers will find a selection of the best online resources for marine science education. Educators and scientists are building the Bridge." This site has a lot of information on many topics in marine sciences. The above URL is to their page on oil pollution which contains a good list of links to other sites.

www.cmc-ocean.org/mdio/curricula.php3
Center for Marine Conservation (now called the Ocean Conservancy)
   This web site offers four curricula kits on marine pollution and debris for $10 each. You can also access online sample activities from these kits for free.

www.etrc.louisiana.edu/projects/osage/
Oil Spill Awareness through Geoscience Education (OSAGE)
   Education CD-rom available through this website and a good list of links to other web sites.
Appendix 5 – pages 2-9 include sample pages from the *Alaska Oil Spill Curriculum*

Copies of this curriculum may be requested from the
Prince William Sound Science Center
P.O. Box 705
Cordova, AK 99574

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Appendix 6

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