Exxon Valdez Oil Spill
Restoration Project Annual Report

Traditional Ecological Knowledge

Restoration Project 99052B
Annual Report

This annual report has been prepared for peer review as part of the Exxon Valdez Oil Spill Trustee Council restoration program for the purpose of assessing project progress. Peer review comments have not been addressed in this annual report.

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Study History: The Traditional Ecological Knowledge project was partially separated from the Community Involvement/Traditional Ecological Knowledge project (-052) funded in FY96. It was designed to facilitate the inclusion of traditional and local knowledge of spill area residents in the overall restoration program and to increase the interactions between researchers and area residents concerning ongoing research and dissemination of results from such research. Traditional Ecological Knowledge was added to the title of the Community Involvement Project, and specific tasks were added to bring TEK into the EVOS process. The following year, TEK was made into a separate project. This report covers the third year of the Traditional Ecological Knowledge project on its own.

Abstract: The goal of this project is to facilitate the inclusion of traditional ecological knowledge in research projects funded by the *Exxon Valdez* Oil Spill Trustee Council and in the overall EVOS Restoration Program. The project involves assisting researchers in the collection and interpretation of traditional ecological knowledge, assisting communities in participating in such efforts, and developing products to support both activities. The goal is to make appropriate use of traditional ecological knowledge within the context of the EVOS Restoration Program and consistent with community interests.

Key Words: Chugach Regional Resources Commission (CRRC), community facilitators, community involvement, Kenai Peninsula, Prince William Sound, TEK, TEK specialists, traditional ecological knowledge.

Project Data: All available data are incorporated in this report.

Citation:

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INTRODUCTION

The *Exxon Valdez* oil spill caused severe disruption to the lives of many people living in the spill impact area. The spill also caused residents of the area to be concerned about the safety of their wild food sources and the integrity of the surrounding natural environment. While scientific studies aimed at restoring the resources and services damaged by the oil spill occurred throughout the spill area, most of the researchers worked for agencies or institutions based outside the spill area itself. Residents of the spill area felt that they were not adequately involved in the restoration process, either through regular communication with the researchers and the Trustee Council, or through participation in restoration activities, including the use of traditional ecological knowledge (TEK) of the region. At the same time, restoration researchers recognized that spill area residents have extensive traditional knowledge that could help them answer questions and interpret their findings in ways not possible through conventional scientific means or with existing documented data. This project was intended to enhance efforts made under Restoration Project 96052 (Community Involvement/Traditional Ecological Knowledge) to turn the common interest in traditional knowledge into a substantive contribution to the Restoration Program.

Background

The initial call for involving traditional ecological knowledge was made by a community representative in 1994, as described in the previous annual report on Restoration Project 96052. While the Community Involvement/Traditional Ecological Knowledge project had been underway for two years, many people involved in the project felt that it was making little progress to the goal of increasing the role of traditional ecological knowledge in the Restoration Program. The 1996 Restoration Workshop included traditional ecological knowledge as its theme, and one outcome was the recognition of the need for a set of protocols to guide the appropriate use of traditional ecological knowledge for restoration researchers. In April 1996, a workshop was held in Anchorage with the community facilitators and representatives of Trustee Council agencies, facilitated by Henry Huntington. This workshop developed draft protocols, which were then revised by the agencies and approved by the Trustee Council in December 1996.

A second outcome of the 1996 Restoration Workshop and of the protocols workshop was the idea to separate the traditional ecological knowledge component of project –052 from the community involvement component, and to hire a traditional ecological knowledge (TEK) specialist to carry out the work of the project. This approach was approved for FY97, to be done by the Chugach Regional Resources Commission with the assistance of the Alaska Department of Fish and Game, Division of Subsistence, with the Alaska Department of Fish and Game as lead trustee agency. The project's previous years, FY97 and FY98, were described in previous annual reports.

OBJECTIVES

The objective of the project is to facilitate the appropriate use of traditional ecological knowledge to help achieve the goals of the EVOS Restoration Program.

METHODS

This project was coordinated by the Chugach Regional Resources Commission through a cooperative agreement with the Alaska Department of Fish and Game. CRRC contracted with a TEK Specialist, Dr. Henry P. Huntington, to provide assistance to communities and to researchers in using traditional ecological knowledge appropriately in the course of restoration research activities, to help share the results of research with communities through information workshops, and to assist in the planning and conduct of workshops on related topics.

RESULTS

Project Assistance

TEK Specialist Henry Huntington assisted Jody Seitz in her research on local and traditional knowledge of juvenile herring and feed fish in Prince William Sound and the lower Kenai Peninsula (-320T). Huntington traveled to Cordova and Tatitlek (February 1999 and August 1999) to assist Seitz with data review, analysis, and preparation of a manuscript to be submitted to a scientific journal. Seitz's project is a notable advance in the use of traditional knowledge in fisheries research.

Information Workshops

Three Information Workshops were held to help disseminate information from researchers to the communities, provide an opportunity for community members to discuss research methods and conclusions with researchers, and to explore the possibility of collaboration on future research projects. A fourth workshop was prevented by bad weather, as described below. The first and second workshops were held in Nanwalek and Seldovia in January 1999. Dan Rosenberg, PI of Project -427 on harlequin ducks and Project -273 on scoters, described his research, discussed his findings on harlequins and his plans for scoters. Local residents were able to provide advice on areas to catch scoters for tagging as well as observations on changes over time in their region.

The third workshop was held in Tatitlek in August. Evelyn Brown of the University of Alaska Fairbanks discussed her research on herring as part of the Sound Ecosystem Assessment (SEA) program. Evelyn's presentation was well received, and several ideas were discussed concerning future cooperative activities, especially ideas for monitoring in the area.

A fourth workshop was planned for Chignik Lake in August, to discuss harbor seals. Bob Small and Vicki Vanek of the Alaska Department of Fish and Game traveled with Hugh

Short and Henry Huntington to the Alaska Peninsula, but strong winds and bad turbulence forced the plane to turn back before reaching the village. Schedule conflicts prevented us from holding the meeting later in the fiscal year.

Related Workshops

In conjunction with the Community Involvement Project (99052A), the TEK project held two workshops on tribal management programs. The first was held in Anchorage in February 1999. We had excellent participation from the spill-area communities. We also benefited from the participation of local researchers such as Violet Yeaton from Port Graham, who spoke about her research on traditional knowledge of king crabs in Old Harbor, and Tom Evans of Nanwalek, who spoke about the village's work on watershed management. During the workshop, we developed ideas for community stewardship to try out in the FY00 Community Involvement Project.

As a result of the ideas discussed at the first workshop, we held a second workshop in September and October 1999 in Lac du Flambeau, Wisconsin, an Indian Reservation with a strong tribal resource program. The workshop included field trips to the hatcheries, program offices, and harvesting areas, as well as talks from tribal leaders, a tribal judge, and tribal resource managers on the history of their program and the way it has been organized and run. Like the first workshop, this one helped generate ideas for community roles in management and monitoring.

CONCLUSIONS

This project is making progress in involving spill area residents and their knowledge in the EVOS Restoration Program. While concerns remain about the ways in which traditional ecological knowledge is used, there is strong support for the overall aims of the project in both the communities and among the researchers who have been involved. The FY99 project provided us with further experience to use in designing a more effective program for FY00 and beyond, especially in the area of tribal resource management, including monitoring activities. As a result of the close connection between this project and the Community Involvement Project, we decided to make them again one project in FY00. The support of the communities and the researchers, as well as the Trustee Council and their staff, has been crucial to the success of the project. We are pleased at the progress being made, and look forward to continuing this important project.

ACKNOWLEDGMENTS

The authors acknowledge the contributions of spill area residents to this project and its activities. In particular, several individuals have given a great deal of time and energy to support our efforts:

Virginia Aleck, Edgar Blatchford, Lillian Elvsaas, Gail Evanoff, Bob Henrichs, Charlie Hughey, Pete Kompkoff, Gary Kompkoff, Walter Meganack Jr., Nancy Yeaton, Violet

Yeaton, Tom Evans, Ken Anderson, Dan Rosenberg, Jody Seitz, Evelyn Brown, Bob Small, Vicki Vanek, Rita Miraglia, Jim Fall, Stan Senner, Bruce Wright, Kate Wynne, and the Chugach Regional Resources Commission Board of Directors.

BIBLIOGRAPHY

Miraglia, Rita. 1998. Traditional ecological knowledge handbook: a training manual and reference guide for designing, conducting, and participating in research projects using traditional ecological knowledge. Anchorage, Alaska: Alaska Department of Fish and Game, Division of Subsistence.

An extensive bibliography of TEK literature is included in the handbook.

APPENDIX A.

List of EVOS Projects that Incorporate TEK

95279: Subsistence Restoration Project: Resource Abnormalities Study (Miraglia)
97009: Survey of Octopuses in the Intertidal in Prince William Sound, Alaska (Scheel)
97427: Status of Harlequin Ducks in Prince William Sound, Alaska after the *Exxon Valdez* oil spill, 1995-1997 (Rosenberg)
98274 Documentary film on the subsistence use of herring and herring spawn and resources in the nearshore ecosystem in PWS (Kompkoff/Simenone)
99210: Youth Area Watch (Childress)
99245: Community-based harbor seal management and biological sampling (Vanek/Riedel)
99247: Kametolook River Coho Salmon Subsistence Project (Scarbrough/McCullough)
99273: Scoter & Goldeneye Life History & Ecology: Linking Satellite Technology with TEK (Rosenberg)
99320T Supplement: Ecology of herring and other forage fish as recorded by resource users of Prince William Sound and Lower Cook Inlet (Seitz)
00610 Kodiak Youth Area Watch (Brown-Schwalenberg)
01481 Documentary film on the oil spill impacts on subsistence use of intertidal resources (Kompkoff/Simeone)

APPENDIX B.

Trip Reports

Trip Report 1

To: Patty Brown-Schwalenberg, Chugach Regional Resources Commission
From: Henry P. Huntington, TEK Specialist
Date: January 21, 1999
Subject: Trip Report: Nanwalek and Seldovia, January 18-20, 1999

On January 18, 1999, I flew to Nanwalek with Dan Rosenberg of the Alaska Department of Fish and Game and Hugh Short, Community Involvement Coordinator for CRRC. On January 19, we flew to Seldovia. Hugh came back to Anchorage that day, while Dan and I returned on the 20th. The purpose of the trip was to hold Information Workshops in each community to discuss Dan's research on scoters ("black ducks"), including the results of his work last year and his plans for this spring. These were the first information workshops for the TEK Project in FY99.

Upon arrival in Nanwalek, we met with Nancy Yeaton, the Community Facilitator. The community was finishing their Christmas and New Year's celebrations, with church services during the day. Nancy had arranged for several of the hunters in Nanwalek to meet with us. We talked with six persons in some detail, and with a few more in passing. We also met with Vincent Kvasnikoff Sr., the Chief of the village. In all, it was an informative visit. Dan gathered some of the local observations of scoters and changes that have been occurring in the area's marine environment. He also shared his findings from implanting satellite tags in scoters in Prince William Sound last summer, which were of great interest to the hunters. Dan plans to implant more satellite transmitters this spring, both in Prince William Sound and in the Kachemak Bay area. We discussed with the hunters where and how scoters could best be caught in Kachemak Bay, and this was helpful information for Dan as he plans his spring field work. Overall, it was a successful visit.

In Seldovia the next day, Lillian Elvsaas, the Community Facilitator, arranged an afternoon meeting with several of the local hunters. We met at the Seldovia Native Association building. Six hunters took part, and we had a lengthy discussion about sea ducks, the marine environment, and other matters similar to those we discussed in Nanwalek. The atmosphere of the meeting was very good. The hunters were very interested in the results of last year's tagging and in Dan's plans for this spring. They were helpful in suggesting places to work and ways to catch the scoters. As in Nanwalek, it was a successful visit and a good start to Dan's work in the region. His ability to communicate information to village residents and to listen to them in return is a solid foundation for future cooperative work and information sharing.

cc: Dan Rosenberg
Hugh Short
Nancy Yeaton
Lillian Elvsaas

Trip Report 2

To: Patty Brown-Schwalenberg, Chugach Regional Resources Commission
From: Henry P. Huntington, TEK Specialist
Date: February 12, 1999
Subject: Trip Report: Tatitlek, February 9-10, 1999

On February 9, 1999, I traveled to Tatitlek to assist Jody Seitz in the community review of her study on traditional ecological knowledge of herring. Jody made a presentation to the Tatitlek Tribal Council and to high school students at the school. She described her study, the reasons for doing it, the process and method she used, and the results and their significance. There was general interest in the project, and in the fact that her results documented for the first time areas of herring spawn in western Prince William Sound. Jody is in the process of analyzing her data and drawing more detailed conclusions regarding spawning locations and the ecology of juvenile herring in Prince William Sound and the outer Kenai Peninsula. She will present her findings at the EVOS Symposium in March.

The course of Jody's research and her results suggest a number of things to me. First, although there has been much talk about the significance of TEK, we still need examples like this to show exactly what we are talking about and why it matters. We need to show this both to scientists who might collaborate with local experts and to area residents who may not be aware of how much they know and how valuable it is. Jody's experience adds to the work of Dave Scheel on octopus, but we obviously need more examples of how TEK can be used for the benefit of researchers and community residents. Jody's project is a big step in the right direction, but we need to follow it up.

Second, documentation projects such as this are a first step towards collaboration and productive interaction between researchers and community members. With some understanding of what each group knows and what they are interested in, both can benefit from continuing their discussion about observations of the environment and what those observations tell us. Furthermore, this can lead the way to longer-term monitoring efforts that make use of the expertise of people who spend a great deal of time on the waters and lands of the region.

Third, documentation can serve local needs by providing a record of their observations, expertise, and understanding. When it comes to making local rules about natural resources or advocating certain regulations with state or federal agencies, such records can help substantiate the points made in oral testimony. By focusing community thoughts on a particular topic, the process of documentation can also help a community determine what its needs are and they can best be achieved.

These points are not new ones, but I think they are pertinent especially in light of our plans for next week's workshop for community facilitators and natural resource specialists. Documentation projects are not the only option available to us, but they are a useful tool for community-based stewardship when directed appropriately and when the

community is fully involved. The question is how to go about putting these ideas into practice.

After Jody's presentations, we spent time visiting several people in the village. I returned to Anchorage on February 10.

cc: Jody Seitz
Gary Kompkoff
Hugh Short
Rita Miraglia

Trip Report 3

To: Patty Brown-Schwalenberg, Chugach Regional Resources Commission
From: Henry P. Huntington, TEK Specialist
Date: August 4, 1999
Subject: Trip Report: Cordova and Tatitlek, August 2-3, 1999

On August 2, I traveled to Cordova with Hugh Short and on to Tatitlek with Hugh and Evelyn Brown to hold an Information Workshop on herring. Evelyn is a PI in the Sound Ecosystem Assessment (SEA) project, and has done extensive aerial surveys of herring and other forage fishes in Prince William Sound. Evelyn has also helped Jody Seitz on Jody's project on traditional ecological knowledge (TEK) of herring.

It was a beautiful day in Tatitlek, so many people were outside enjoying the weather. Three people attended the workshop: Gary Kompkoff, Roy Totemoff, and Jerry Totemoff. Hugh gave a brief introduction to the workshop. Evelyn gave a presentation on her work, including aerial and underwater photographs and video that were stunning. She and the workshop participants talked about some of the changes in the Sound, including the decline in herring and possible causes such as zooplankton declines. The role of disease—in this case, viral hemorrhagic septicemia (VHS)—was also a concern, but unfortunately the results of the disease work and of the SEA work cannot be easily combined because the studies looked at different areas.

Later in the workshop, we also discussed the potential for community monitoring activities. Gary was particularly interested in monitoring and research on herring and plankton, since both are so crucial for the rest of the species in the Sound that are of interest to the communities. Evelyn had a number of ideas for community monitoring, such as zooplankton monitoring from the ferry dock or herring trawls in the area from a boat. From the workshop and from later discussions with Evelyn, it seems to me that there are a number of interesting and important monitoring programs that could be done in one or more villages that would add significantly to the science being done in the region. To set up and run such monitoring programs, however, will take time and effort, which in turn require money. Specifically, we need to be sure that we can provide adequate training for community monitors, that we can provide solid scientific guidance to the overall monitoring effort, that we can get and keep good monitors, and that we can hold review sessions on a regular basis.

Training: For community members to get involved in monitoring, they will need training in the tasks they are to undertake. For example, zooplankton trawls from the ferry dock will require the right kind of nets, training in the way the samples are taken, and training in identifying and counting what is caught. Some samples may also be saved for analysis in a lab somewhere else, and the techniques of preserving and documenting such samples must be taught. Gary suggested that some of these tasks could be carried out through the high school. Evelyn suggested that an annual training session could be held, if there was money to bring in the trainer.

Scientific guidance: As we have discussed before, community monitoring programs should not be set up separately from other research and monitoring in the region. There is no point in running a community program that produces data of little interest to anyone. Instead, the program should be set up to address topics of interest and importance to the community in a way that contributes directly to other research and monitoring. Likewise, the other research and monitoring efforts should be set up to address community interests and involvement as much as possible. One way of making that link stronger is to have a small group of researchers who can help set up local monitoring efforts, provide training, and work with the community monitors on a regular basis. Evelyn noted that data sets collected consistently over time, even in only one or two places, can be extremely valuable. There is a great deal of potential, but we need to design the program intelligently to get the most out of it, both for the communities and for the researchers.

Monitors: A community-based monitoring program depends on having people in the community to carry out the tasks reliably. One way to help do this is to pay them appropriately. The person or persons can be hired for the job, or can do these tasks as part of their other duties if they are already employed. Working with the school, as Gary suggested, is an excellent idea, so long as teacher turnover doesn't hinder the continuity of the project. Annual training and the continued involvement of some of the researchers would also help with continuity from year to year.

Reviews: Another key element in sustaining a community-based program is the interaction that stimulates the participants. If the community monitors are sending data forms off each week and get nothing in return, they are likely to loose interest. The communities have more to offer than that, and the researchers have more to gain if there is an opportunity for interactions on a regular basis. Some ideas are a monitoring workshop each year or two, community visits by some of the researchers, or visits by community monitors to some of the other research facilities. These are not cheap events, but I think they or similar events are essential for a long-term program to succeed. By giving the community monitors and the researchers a chance to meet, get to know each other, and work together over time, we can establish a strong, locally based and run monitoring program that will reflect community interests while contributing to the overall effort to better understand and manage the region and its resources.

After the workshop in Tatitlek, we returned to Cordova. Hugh flew back to Anchorage that evening, and I stayed overnight. In the morning, I worked with Jody and Evelyn on the manuscript from Jody's project. We had met briefly on the previous morning before going to Tatitlek, and carried on our discussions the second morning. Jody is planning to submit the paper to Alaska Fisheries Bulletin, and it will be a great addition to the published literature. Evelyn has done a great deal of work on the manuscript as well, and I have reviewed it and helped with some sections. The difficulty in writing up the results of a traditional ecological knowledge project is that it is a hybrid of social science methods and natural science results. Consequently, a lot more needs to be explained than in a paper that was within one academic discipline. Having Evelyn provide the perspective of a natural scientist and Jody provide the social sciences details makes for a much stronger paper than if only one person were to try to write it. I've been able to help,

having been through the process before with my papers on TEK of beluga whales. Jody and Evelyn were planning to spend some more time working on the paper together. They'll send me a copy to review soon, and we should be able to submit it before long, which will be a good feeling! There are likely to be some more revisions to make after we get review comments from the journal, and we will address those when the time comes.

I returned to Anchorage in the afternoon of August 3.

cc: Evelyn Brown
Jody Seitz
Gary Kompkoff
Hugh Short

Trip Report 4

To: Patty Brown-Schwalenberg, Chugach Regional Resources Commission
From: Henry P. Huntington, TEK Specialist
Date: August 12, 1999
Subject: Trip Report: Chignik Lake (attempted), August 11, 1999

I was already thinking I wanted to be somewhere else when my head hit the roof of the plane. After that jolt and amid continuing violent turbulence, we turned back from Chignik Lake, which was in sight about four miles ahead, and landed at Port Heiden. No one complained, and no one wanted to try again. So we returned to King Salmon and caught the evening flight back to Anchorage.

We had been trying to go to Chignik Lake to hold an information workshop on harbor seals. Bob Small and Vicki Vanek of the Alaska Department of Fish and Game accompanied Hugh Short and me. Bob and Vicki were to talk about their work with harbor seal research and biosampling, and to see what community members were interested in learning more about. Hugh and I were to facilitate the workshop and try to learn what community members might be interested in regarding long-term monitoring opportunities.

I spoke this morning with Virginia Aleck, the Community Facilitator in Chignik Lake and for the Peninsula communities. She suggested that we try to reschedule for the fall sometime, perhaps when the students are in school. Hugh and I can discuss that with Bob and Vicki and with Monica Riedel of the Alaska Native Harbor Seal Commission. For the moment, all of us are happy to be safely on the ground again.

cc: Hugh Short