RESTORATION TECHNICAL SUPPORT PROJECT NUMBER 3

Project Title: Development of Potential Feasibility Studies for 1991

Lead Agency: ADF&G and EPA

Cooperating Agencies: DNR, DEC, DOA, DOI, DOC

INTRODUCTION

A variety of potential restoration feasibility studies need to be undertaken before recommendations can be made in the Restoration Plan. Due to funding and timing constraints in 1990, it was possible to carry out only a limited number of such studies in the current season. There is much that can and needs to be done, however, to develop the substance of feasibility study proposals for possible implementation in 1991. A number of specific areas have been identified for development of study plans. These include (A) Monitoring "Natural" Recoveries, (B) Pink Salmon Stock Identification, (C) Herring Stock Identification/Spawning Site Inventory, (D) Artificial Reefs for Fish and Shellfish, (E) Alternative Recreation Sites and Facilities, (F) Historic Sites and Artifacts, and (G) Availability of Forage Fish. In addition, as new information becomes available through the NRDA process, public comments, and technical consultations, the RPWG expects to identify additional restoration ideas and areas of concern for which feasibility studies may be appropriate.

Objectives:

A. To identify restoration ideas and areas of concern for which feasibility studies may be necessary and appropriate.

B. To develop feasibility study plans and proposals which may be considered for implementation in 1991 and beyond.

Relationships with Other Studies:

This project relates directly to Restoration Technical Services Project Number 1, implementation of a peer reviewer process, as well as the entire NRDA and Restoration Planning Project.

Methods:

Based on public comments, NRDA results, and consultations with technical experts, the RPWG anticipates that candidate restoration projects will be identified on an on-going basis. In order to fully evaluate some of these suggestions, it will be necessary to carry out feasibility studies. The RPWG then needs to convene ad hoc committees consisting of combinations of agency personnel, peer reviewers, and outside experts to more fully develop the

study plans and proposals. Support is needed to convene meetings, particularly involving travel by outside experts. In some cases, site visits will be needed to examine particular problem areas related to the oil spill or successful restoration projects which have been implemented elsewhere.

BUDGET:

Salaries	$ 5.0
Travel	77.5
Contractual Services	40.0
Supplies	11.0
Equipment	3.0
TOTAL	136.5

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Pilot Project 1990 -- Bird Studies

LITIGATION SENSITIVE ATTORNEY - CLIENT PRIVILEGED

TITLE: Marbled Murrelet Breeding Habitat Identification

OBJECTIVES: Determine breeding habitat requirements for marbled murrelets in the Prince William Sound area, specifically to determine if they nest in trees and, if so, whether they are dependent upon old-growth forest habitat or can utilize second growth timber.

BACKGROUND: Marbled murrelets are noncolonial seabirds that breed along the west coast from Northern California to Alaska. In the lower latitudes, the birds are known to nest in trees and have a strong preference for hold-growth habitat (i.e., large trees with an open understory). However, in Alaska, it is not known wether these birds have the same requirements for nesting habitat or if they may utilize other resources such as smaller timber or ground nesting areas. The numbers of marvelled murrelets has been decreasing in the Sound since the early 1970s with only 40% of the numbers found in 1989 as were present in 1972. These birds depend upon the fisheries resource in the Sound which probably was damaged by the 1989 oil spill, further contributing to the stress on the population and potentially accelerating the rate of decline. Preservation of breeding habitat would contribute to support of the population and maintenance of a viable population.

PROPOSAL: A study would be conducted in the summer of 1990 along the shores and islands of Prince William Sound to determine the breeding habitat of marvelled murrelets. Visual observation of birds would be made and location of nests would be attempted. Additionally, a small number of birds would be captured during foraging flights in the Sound and equipped with radio-tracking devices. These birds would be located by helicopter or fixed-winged aircraft to identify nesting sites. Ideally, at least 50 nest will be located to determine how many are in trees and which are in old-growth versus second growth timber areas.

This project has a high probability of success as experienced personnel are on-site (USFWS) that could mount such a study on short notice. Information gained from this study is necessary for long-term preservation of the Prince William Sound population by identifying critical terrestrial sites that need protection in the near future (i.e., restriction of logging activities). Additionally, the results from this small study may have ramifications on management decisions throughout the range of the marvelled murrelet. v

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Estimated Budget

Salaries		
	GS-9/ 2 pay periods (analysis and write-up)	$ 2800
	Volunteer expenses	2000
Travel	extra transport arrangements for volunteer(s)	1200
Contract		
	(Aerial photo analysis)	3000
Equipment		
	misc. extra equipment & supplies	1000
Total		$ 10,000

Literature Cited

Dwyer, T.J., P. Isleib, D.A. Davenport, J.L. Haddock. 1975. Marine Bird Populations in Prince William Sound, Alaska. Unpubl. Rep., U.S. Fish and Wildlife Service. Anchorage, AK.

Mendenhall, V.M. 1988. Distribution, breeding records and conservation problems of the marbled murrelet in Alaska. Unpubl. Rep., USFWS, Anchorage, AK.

Piatt, J.F., C.J. Lensink, W. Butler and M. Kendziorek. 1989. Marine birds killed in the 'Exxon Valdez' oil spill: An interim report. Unpubl. report. U.S. Fish and Wildlife Research Center, Anchorage, AK.

Additional Notes and Recommendations

Regarding the disadvantages of the Naked Island site, a good alternative site for studying the nesting habitat of both species of murrelets would be Kachemak Bay. The bay has large populations of both species, with the Kittlitz's fairly restricted in distribution. A variety of habitats are accessible by road, well defined hiking trails or by easy boat access from the Alaska Maritime National Wildlife Refuge in Homer. A large pool of volunteers could be accessed and accommodated, which is important in the labor-intensive work of documenting murrelet presence in-land. A study incorporating the Kittlitz's murrelet would address two concerns: 1) It would improve the data on marbled murrelets. 2) It would address the criticisms of the public reviewers regarding the exclusion of the Kittlitz's murrelet in the 1989 damage assessment study. The Kittlitz's murrelet, which did experience mortality from the oil spill, is completely restricted to Alaska, is less abundant than the marbled murrelet, and has even less known about its life history.

Kathy Kuletz

4/27/90

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1. Identifying marbled murrelet nesting habitat.

Murrelets visit their nests from May through August, but peak activity is in July. They can be heard and seen flying inland at dawn, and to a lesser extent, sunset. During the 90 min. activity period a stationary observer uses a tape recorder to record murrelet numbers, direction, height and behavior. Bird height (relative to canopy) and behavior is an indication of the observation site being a flight corridor to nesting sites further inland, or a nesting grove itself. Habitat features (distance to ocean and fresh water drainage, slope, aspect, elevation, vegetation layers, tree species and tree size) can be assessed on-site and analyzed from aerial photos. By establishing a sampling grid on Naked Island, it should be possible to test for correlations between habitat type and murrelet use, and to locate potential nesting groves in the process.

2. Locating tree nests by ground search technique.

Sites with high murrelet activity will be staked out for an intensive ground search to locate specific trees used by murrelets. This method was used successfully in 1989 (Naslund et al. 1990). The technique is based on known attributes of tree types and daily peak murrelet activity periods. Multiple observers are stationed around specific trees from dawn through the late morning chick feeding. In addition, mist-netting can be attempted in locations where murrelets are observed flying below tree-top. This could provide experience and information on capturing murrelets for future radio-tagging efforts.

Study site advantages

Naked Island is advantageous for this pilot study because 1) It will already be serving as a base camp, avoiding the costs and logistical arrangements of establishing a new site. 2) Murrelets have been censused at-sea around the island over four summers. The field camp supervisor, Kathy Kuletz, is familiar with the local marine and terrestrial conditions, and with the dawn detection technique. 3) Naked Island has a diversity of forest types, often interspersed with open meadows. This patchiness makes more timber groves accessible and increases detection efficacy. 4) There are no bears to hinder observers.

There are two aspects of the Naked Island site which are advantageous for the pilot study, but inappropriate for a definitive study of marbled murrelet nesting habitat : 1) There is no dry alpine tundra habitat. Thus, ground-nesting by marbled murrelets can not be studied. An important component of future nesting-habitat studies should be the relative use or preference for ground vs. tree nests where both habitats occur. 2) There are no Kittlitz's murrelets around Naked Island. This closely related species is a source of misidentification where the two species co-exist, as they do at locations throughout the spill zone. Usually, the two species are lumped into a Brachyramphus category. Since Kittlitz's nest on the ground, their nesting habitat may overlap with the marbled's. It will eventually be necessary to address this potential source of error, and identify the species' differences.

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Memorandum To: Stan Senner and Restoration Team

From: Kathy Kuletz, Migratory Bird Management, USFWS

Subject: Proposal for a pilot study towards restoration of a seabird

Proposal Title: Identifying the nesting habitat of the Marbled Murrelet (Brachyramphus marmoratus) in southcentral Alaska as a step in the Restoration Process

Justification

The Marbled murrelet population in Prince William Sound has declined 60%, from 104,000 in August of 1972 (Dwyer 1975) to 41,000 in August 1989 (Klosiewski, pers com.). The south Kenai Peninsula shows a similar percentage drop. While the reasons for this decline are unknown, the 1989 oil spill likely contributed to or aggravated environmental conditions leading to it. At the time of the Exxon Valdez Oil Spill, the murrelet population in the Sound was low, but for the spill area as a whole the proportion of dead marbled murrelets recovered was higher than the population at risk (Piatt et al. 1989).

Alaska harbors an estimated 95% of the total marbled murrelet population in U.S. waters (Mendenhall 1988), making the decline in Prince William Sound a potentially serious set-back for the species. Given the lack of information on the murrelet's basic biology, the best mitigation would be to protect murrelet nesting habitat. This could be accomplished via the Restoration process by purchasing timber rights to critical areas in southcentral Alaska.

The problem with protecting marbled murrelet nesting habitat, however, is the lack of documented evidence of tree nesting by murrelets or the types of trees they use in southcentral Alaska. Although there are numerous qualitative accounts of marbled murrelets using trees in southcentral Alaska, the three documented nests have been ground nests. Therefore, before timber acquisition is recommended or acted on, it will be necessary to 1) identify nesting habitat characteristics, 2) document the existence of tree nesting in this area and 3) determine the extent of tree-nesting vs ground nesting in southcentral Alaska.

Eventually it may be necessary to identify specific timber stands as marbled murrelet nesting sites. However, given the size and remoteness of the spill area, it would be advantageous to implement pilot studies in the 1990 field season, to test methodologies and improve the design of a full-scale effort. In Washington, Oregon and California, techniques have been developed to map and identify murrelet nesting habitat. These methods depend on an extensive road system, large numbers of volunteers and minimal logistical complications. Similar techniques need to be tested in and adapted for Alaskan conditions.

Study Site and Methods

During the 1990 field season, Migratory Bird Management, U.S.F.W.S. will have a camp on Naked Island in Prince William Sound to follow up on breeding studies of pigeon guillemots and at-sea censuses of marbled murrelets from the 1989 damage assessment studies. With extra support from Restoration funds, Naked Island could provide a base to conduct pilot studies to address the first two information needs mentioned above. A brief outline of methods and schedule follows: