

EVOSTC ANNUAL PROJECT REPORT

Project Number: 040620-2-

Project Title: Lingering Oil and Sea Otters

PI Name: JL Bodkin & BE Ballachey

Time period covered by report: 9/2004-8/2005

Date of Report: 21 September 2005

Report prepared by: JL Bodkin

Project website address (if applicable):

Work Performed: Summarize work performed during the reporting period, including any results available to date and their relationship to the original project objectives. Explain deviations from the original project objectives, procedural or statistical methods, study area or schedule. Also describe any known problems or unusual developments, and whether and how they have been or can be overcome. Include any other significant information pertinent to the project.

Field work conducted under this project was completed on August 8 2005. Necessary sample shipment and data management tasks are underway. Following is a summary of the work performed in FY 2005.

1. Monitoring of sea otters instrumented with VHF radio transmitters and time-depth-recorders continued throughout the reporting period. Throughout the period, weekly relocation of each telemetered individual was attempted. Adverse weather frequently delayed relocation flights and actual relocation flight intervals averaged about 10-14 days. Beginning in April of 2005, a field camp was established at northern Knight Island and skiff and shore based relocations and direct dietary and behavioral observations commenced. Between 20 July and 7 August, an aerial survey of sea otter abundance in western Prince William Sound was conducted. During this same time period, three replicate surveys of sea otter abundance and distribution were conducted at study sites at northern Knight Island between Herring Bay and Bay of Isles, and at northeast Montague Island. Between 21 July and 8 August, we captured live sea otters from previously oiled portions of northern Knight Island (N=20) and unoiled Montague Island (N=17) to obtain tissue samples for cytochrome P4501A , health and age analysis. During this same time period, we recaptured and surgically removed 7 time-depth-recorders from sea otters that were implanted with these instruments in July of 2004.
2. Entry and management of data collected on relocations, diet, and behavior of telemetered individuals is in progress. Aerial survey data are entered and have undergone initial proofing and are ready for analysis. Tissue samples collected for health and biomarker analysis are being prepared for shipment to Purdue University, Quest Laboratories, and Matson Laboratories for their respective analyses.
3. No deviations from project objectives, procedures, methods or schedule are anticipated. Premature failure of radio transmitters will complicate survival analyses. Confirmation of radio failure through visual observations confirmed a minimum 66% premature radio failure rate. Of the 9 individuals instrumented in July 2004, 7 were known alive, (78%), and 2 were missing presumed dead (22%). Final survival analysis will incorporate 3 years of data on more than 45 individuals, monitored between 2002 and 2005.

Future Work: Summarize work to be performed during the upcoming year, if different from the original proposal. Describe any proposed changes in objectives, procedural or statistical methods, study area or schedule. *NOTE: Significant changes in a project's objectives, methods, schedule or budget require submittal of a new proposal subject to the standard process of proposal submittal, technical review and Trustee Council approval.*

1. Work to be conducted in FY 2006 is not anticipated to differ from that described in the study plan. Analysis of relocation (movements, home ranges, and survival) will commence in early FY 2006. Analysis of aerial survey data will commence in September 2005. Capture data will be entered in electronic data files and analysis of tissue samples collected will commence in September 2005, with statistical analysis of data to commence upon completion of laboratory analyses and receipt of data. No deviations in proposed objectives, methods, or schedule are anticipated.

Coordination/Collaboration: Describe efforts undertaken during the reporting period to achieve the coordination and collaboration provisions of the proposal, if applicable.

The work conducted was coordinated with the lingering oil work conducted in Prince William Sound by scientists of the NMFS Auke Bay Laboratory. The Alaska Science Center contributed approximately 25% to the total cost of the project. Collaborations with Purdue University on the biomarker component of the studies are continuing.

Community Involvement/TEK & Resource Management Applications: Describe efforts undertaken during the reporting period to achieve the community involvement/TEK and resource management application provisions of the proposal, if applicable.

Contracts were established and completed with small businesses operating in Prince William Sound. Visits to communities in Prince William Sound were made. Results of prior work conducted under this project and related studies were made available to interested parties and persons.

Information Transfer: List (a) publications produced during the reporting period, (b) conference and workshop presentations and attendance during the reporting period, and (c) data and/or information products developed during the reporting period.

Lowry, L.L. and J.L. Bodkin. 2005. Marine Mammals, in. Phillip R. Mundy (ed.). *The Gulf of Alaska: Biology and Oceanography*. Alaska Sea Grant College Program, University of Alaska Fairbanks. pp 99-116

Bodkin, J.L. 2004. Status of sea otter populations in south central and southeast Alaska, 2002-2003. Pages 12-13 *in* D. Maldini, D. Calkins, S. Atkinson, and R. Meehan, eds. *Alaska Sea Otter Workshop: Addressing the decline of the southwestern Alaska sea otter population*. Alaska Sea Grant College Program, University of Alaska, Fairbanks, AK, pp 12-13.

Ballachey, B.E., J.L. Bodkin, S. Howlin, A.M. Doroff, and A.H. Rebar. 2003. Correlates to survival of juvenile sea otters in Prince William Sound, Alaska. *Canadian J. Zoology* 81:1494-1510.

J.L. Bodkin, C.H. Peterson, S.D. Rice, J.W. Short, D.E. Esler, B.E. Ballachey, D.B. Irons. 2004. Long-term Ecosystem Responses to the Exxon Valdez oil spill. Norwegian Research Council, Norwegian Oil Research Programme (PROOF) Annual Meeting, Orkanger Norway, 12-14 October 2004. invited speaker.

Bodkin, J.L., B.E. Ballachey, and D.H. Monson. 2005. Restoration of Exxon Valdez oil contaminated habitats by sea otters in Prince William Sound: mechanisms and consequences. *Marine Science in Alaska*, 23-25 January, 2005, Anchorage, AK.

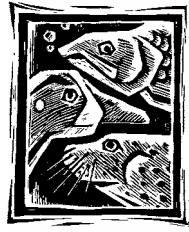
Ballachey, B.E., D. Esler, C.H. Peterson, J.L. Bodkin, D. Irons, S.D. Rice and J.W. Short. 2004. What happens to wildlife that are in the way: Lessons from the *Exxon Valdez* oil spill. Invited presentation at The Wildlife Society Annual Meeting, Calgary, Canada, September 2004.

Budget: Explain any differences and/or problems between actual and budgeted expenditures, including any substantial changes in the allocation of funds among line items on the budget form. Also provide any new information regarding matching funds or funds from non-EVOS sources for the project.

Work was conducted within budget and no modifications to the proposed budget are anticipated.

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Thank you!

*We appreciate your prompt submission of your annual report
and thank you for your participation in and contribution to EVOS-related research.
revised August 2005*