

## ***EVOSTC ANNUAL PROJECT REPORT***

Recipients of funds from the *Exxon Valdez* Oil Spill Trustee Council must submit an annual project report in the following format by **Sept. 1** of each fiscal year for which project funding is received (with the exception of the final funding year in which a final report must be submitted). Please help ensure that continued support for your project will not be delayed by submitting your report by **Sept. 1**. Timely receipt of your report allows more time for court notice and transfer, report review and timely release of the following year's funds.

Satisfactory review of the annual report is necessary for continuation of multi-year projects. Failure to submit an annual report by **Sept. 1** of each year, or unsatisfactory review of an annual report, will result in withholding of additional project funds and may result in cancellation of the project or denial of funding for future projects. **PLEASE NOTE:** Significant changes in a project's objectives, methods, schedule, or budget require submittal of a new proposal that will be subject to the standard process of proposal submittal, technical review, and Trustee Council approval.

***Project Number:*** ..... 090759

***Project Title:*** Harlequin Duck Population Dynamics in Prince William  
Sound: Measuring Recovery from the *Exxon Valdez* Oil Spill

***PI Name:*** ..... Dan Rosenberg

***Time period covered:*** ..... October 1, 2008 to September 30, 2009

***Date of Report:*** ..... October 6, 2009

***Report prepared by:*** ..... Dan Rosenberg

***Project website (if applicable):*** ..... NA

### **Work Performed:**

This study is attempting to improve our assessment of the recovery status of harlequin ducks in oiled areas of PWS by comparing changes in abundance (densities) and structure (sex and age ratios) between oiled and unoiled areas (treatments) at smaller spatial scales than previously analyzed. In 2008 we began a pilot study to 1) develop a sampling protocol to improve estimates of within year transect variability for oiled and unoiled treatments; 2) determine the spatial scales suitable for trend and composition estimates relevant to oil history; and 3) develop a new survey protocol to improve our ability to estimate changes in the number of harlequin ducks at smaller spatial scales

In 2009 we completed the pilot study begun in 2008. We conducted winter boat surveys from late-February to early April 2009. We conducted from 5-8 replicate surveys of 6 oiled transects in western PWS and one unoiled transect on Montague Island to assess transect variability in abundance and sex and age composition. Replicate transects were selected from areas where harlequin ducks were known to exhibit elevated levels of CYP1A, an indication of oil exposure. Montague Island served as an unoiled reference site.

Due to time and weather constraints we were not able to conduct sufficient replicate surveys, analyze the data, and test new survey protocols all in the same year. Therefore, we focused on completing replicate surveys. We reduced the number of transects we surveyed for long-term comparisons (1997-2008) but still surveyed enough transect to compare long-term trends. We chose transects that were representative of the trends and composition we had detected in our prior surveys and eliminated

transects that had no significant effect on our previous results. New survey protocols will be presented in the final report.

In addition, we surveyed 13 transects in oiled areas and 7 transects in unoiled areas to compare differences with winter surveys conducted in 1972 and 1973 and the present. This was a continuation of work we began in 2007, however we reduced the number of transects in 2009 due to time and weather constraints.

We have begun preliminary analytical work to 1) compare changes in density between treatments (oiled and unoiled survey areas) and population structure (immature males, adult males, and females) from 1997 through 2009; 2) compare annual changes in density and population structure within oiled and unoiled treatments and 3) Compare changes in densities of harlequin ducks from winter surveys of 1972 and 1973 with winter surveys from 2007, 2008, and 2009 (based on oiling history), and 4) analyze within-year transect variability. Preliminary evaluation of survey data does not indicate any marked differences from prior year values for changes in densities or population structure for oiled or unoiled areas. We are near completion in developing a GIS for all years of surveys.

#### **Future Work:**

No work is funded for the upcoming year. We are preparing a final report for April 2010.

#### **Coordination/Collaboration:**

Replicate transects and additional transects were chosen in collaboration with Ballachey et al. (project 0774), lingering oil studies (Rice, project 0620 and Michel project 0801). Transects to compare historic surveys (1972-1973) with current surveys were conducted in cooperation with Irons (project 0751). Additional collaboration and coordination will not occur until we are further along in preparation of a final report or we receive data requests.

#### **Community Involvement/TEK & Resource Management Applications:**

Not applicable for this reporting period.

#### **Information Transfer:**

Attended Marine Sciences Workshop, Anchorage, AK. Prepared quarterly reports.

**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. *NOTE: Any request for an increased or supplemental budget must be submitted as a new proposal that will be subject to the standard process of proposal submittal, technical review, and Trustee Council approval.*

We can accept your annual report as a digital file (Microsoft Word or WordPerfect), with all figures and tables embedded. Acrobat Portable Document Format (PDF) files (version 4.x or later) are also acceptable; please do not lock PDF files or include digital signatures.

Please submit reports electronically in [ProjectView](#) or by email to [mandy.migura@alaska.gov](mailto:mandy.migura@alaska.gov). Also, please be sure to post your annual report on your own website, if you have one.

Submit this report via e-mail to [mandy.migura@alaska.gov](mailto:mandy.migura@alaska.gov) . Thank you!



*We appreciate your prompt submission of your annual report  
and thank you for your participation.*

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