

**Alaska Department of Fish and Game  
State Wildlife Grant  
ANNUAL INTERIM PERFORMANCE REPORT**

**Grant Number:** T-1 **Segment Number:** 6  
**Project Number:** 4  
**Project Title:** Cooperative acoustic monitoring of Pacific Right Whales  
**Project Duration:** July 1, 2003 – June 30, 2006  
**Report Period:** July 1, 2004 – June 30, 2005  
**Report Due Date:** September 30, 2005

**Objectives** (*as submitted in grant project statement*):

1. Construct and deploy two High-frequency Acoustic Recording Packages (HARPs) to acquire information on population abundance and trend, important habitats, and spatial and temporal geographic distribution of the North Pacific Right Whale; project will include data on other cetaceans, including humpback, fin, and killer whales.
2. Increase the spatial extent of the current acoustic monitoring program across the historical summer range of the right whale with two new HARPs.
3. Analyze data and conduct analyses of seasonality.

**Summary of Accomplishments** (*Describe accomplishments related to the work that was proposed to be done during this same period in the Project Description and work schedule*):

The following accomplishments are related to Objectives 1 and 2.

1. One ADF&F funded HARP that had been deployed at mooring site M2 during April 2004 was successfully recovered using the NOAA Ship *Miller Freeman* in September 2004. This instrument recorded acoustic data continuously at 80 kHz between April 2004 and July 2004. These data are currently being processed to detect and classify whale calls.
2. Two ADF&G funded HARPs were deployed at mooring sites M2 and M4 during September 2004 using the NOAA Ship *Miller Freeman*. These two HARPs were successfully recovered in April-May 2005, aboard the *Miller Freeman*. These instruments were programmed to continuously record acoustic data at 32 kHz.
3. One ADF&G funded HARP was deployed at site M2, in April 2005 and plans are to recover this instrument during October 2005 using the *Miller Freeman*.

The following accomplishment is related to Objective 3.

4. Data downloaded from the recovered HARPs are being processed by graduate student Lisa Munger for her doctoral dissertation. Processing techniques include using Matlab-based software (*Triton* and *Neptune*, Wiggins 2003<sup>1</sup>) to manually browse spectrograms for marine mammal calls, and using automated call detection software

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<sup>1</sup> Wiggins, S. 2003. Autonomous Acoustic Recording Packages (ARPs) for Long-Term Monitoring of Whale Sounds. *Marine Technical Science Journal*, 37: 13-22.

(*Ishmael*, Mellinger 2001<sup>2</sup>) to specifically screen for right whale and fin whale calls. A manuscript is being prepared on right whale seasonality.

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**Significant Deviations** (*if any, and explain the reasons for these*):

1. Only one ADF&G funded HARP was deployed in April 2005, rather than two, owing to instrument problems. We plan to deploy two ADF&G funded HARPs during the October 2005 *Miller Freeman* trip.

**Actual Costs during this Report Period** (*personnel plus all operating expense totals*):

Federal (from ADF&G):	Partner (nonfederal share):
\$88,215.34	\$29,405.11

**Project Leader** (*or Report Contact Person*): J Hildebrand

**Additional Information:** (*Not required. Add any additional detail, if desired, related to the progress of the project*):

1. In April-May 2004, three NOAA-funded autonomous Acoustic Recording Packages (ARPs) were deployed along the Bering Sea shelf break between Dutch Harbor and the Pribilof Islands
2. One of the shelf-break ARPs was trawled off the seafloor in June 2004 by a fishing vessel and recovered by SIO. We redeployed this ARP in August 2004.
3. Data were downloaded from the recovered ARPs, and are being processed by graduate student Lisa Munger.

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<sup>2</sup> Mellinger, D.K. 2001. *Ishmael 1.0 User's Guide*. NOAA Technical Report OAR-PMEL-120, Seattle, WA. 26 pp. Available online at <http://cetusrp.pmel.noaa.gov/cgi-bin/MobySoft.pl>.