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2010 WESTERN GRAY WHALE PRE-TAGGING STUDY

Contract Report for the International Whaling Commission

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Introduction

During September and early October 2010, a team of Russian and American scientists collaborated to satellite tag western gray whales off northeastern Sakhalin Island, Russia, in the Okhotsk Sea, in an area referred to as the Piltun feeding ground. The objective of the tagging project was to determine the migratory corridor(s) and wintering destination(s) of individuals in this critically endangered population. As outlined in various International Whaling Commission (IWC) Scientific Committee documents and reports of the International Union for Conservation of Nature Western Gray Whale Advisory Panel (WGWAP) (e.g., Weller et al. 2009, WGWAP 2010), one of the safeguards of the tagging project was to tag only known males that were identified real-time (i.e., in the field while tagging was being attempted) from previous photo-identification and genetic studies conducted by the Russia-U.S. western gray whale research program from 1997 to 2009 (e.g., Burdin et al. 2010). This in-field individual recognition required the participation of Amanda Bradford (University of Washington), a long-term collaborator in the Russia-U.S. program, who has the ability to recognize individual western gray whales by sight. However, Bradford was not in the field during the 2008 and 2009 field seasons. Thus, a pre-tagging study was implemented with the goal of allowing Bradford to spend time on the water regaining efficiency and confidence in her ability to identify individual whales. This pre-tagging effort was encouraged by the IWC Scientific Steering Committee for western gray whale satellite tagging (Weller et al. 2009).

Pre-tagging Study

The pre-tagging study was conducted from 5-28 August 2010, and involved the collection of photo-identification images of individual whales from a small vessel. The surveys used identical methodology to previous efforts by the Russia-U.S. western gray whale research program (see Weller et al. 1999 for specific details). The research team assembled at the shore-based field camp at the mouth of Piltun Lagoon on 9 August and readied the survey equipment the following day. However, poor weather conditions

(predominantly rain) precluded surveying until 18 August. In total, four pre-tagging surveys were conducted, which averaged 7.8 hrs in length with an average of 17 whales identified per survey (Table 1). Although the distribution of whales in the study area was not quantified, individuals were readily encountered in close proximity to the lagoon mouth. Overall, 43 individual whales were identified. Candidate males were encountered on each trip, as were known reproductive females, with a total of 17 and nine identified, respectively. The consistent presence of reproductive females emphasizes the importance of the Piltun feeding area to the productivity of the population. Four calves were identified during the pre-tagging surveys. One calf was still associated with its mom (a known reproductive female) on each of the three occasions it was sighted (19, 23-24 August), while the three other calves were already independent upon first sighting. Five additional young (≤ 4 yrs) whales were sighted, three of those individuals were yearlings. One sighting of interest was a male first identified as a calf in 2003 that had not been observed in the study area since that year. The number of whales, calves, and new non-calves identified during the pre-tagging surveys is compared to previous results of the Russia-U.S. program in Table 2.

An agreement was made between the Kamchatka Branch of the Pacific Institute of Geography and the Severtsov Institute of Ecology and Evolution to collect biopsy samples during the pre-tagging study. Although sampling effort was initiated during 23 groups (note that some group sampling attempts were directed at more than one whale), only nine biopsies of eight whales were collected. Of these eight whales, five (three females, two males) were previously sampled by the Russia-U.S. western gray whale research program. The remaining three biopsied whales consisted of a yearling and two calves. While missed sampling shots did occur, the most common reason for aborting sampling effort was boat avoidance behavior by targeted whales. In fact, boat avoidance was the most common behavioral state exhibited by whale groups during the pre-tagging study. Although the following observation cannot be quantified, it was the perception of the research team that both the degree and extent of boat avoidance were more pronounced than in previous years.

Table 1. Summary of effort and whales identified during western gray whale pre-tagging surveys off northeastern Sakhalin Island, Russia, in 2010.

Survey Date	Survey Length (hrs)	Whales Identified	Candidates Identified	Reproductive Females Identified	Yearlings Identified	Calves Identified
<i>Pre-tagging</i>						
08/18/2010	12.28	29	10	7	3	0
08/19/2010	11.22	19	4	6	1	3
08/23/2010	3.00	9	4	2	0	1
08/24/2010	4.57	10	4	1	0	3
Total	31.07	43	17	9	3	4

Table 2. A comparison of the 2010 pre-tagging surveys to annual survey effort, sighting trends, and resighting percentages resulting from the Russia-U.S. western gray whale research program from 1997-2009 (along with a 1995 pilot study).

Year	Sampling Period	Number of Surveys	Whales Identified	Calves Identified	New Non-calves	% Non-calves Previously Identified
1995	08/15-08/19	5	28	2	26	0.0%
1997	07/09-09/08	22	47	2	25	44.4%
1998	07/06-09/29	35	54	8	5	89.1%
1999	06/29-10/13	56	69	3	12	81.8%
2000	06/25-09/16	40	58	3	3	94.5%
2001	06/25-09/25	49	72	6	6	90.9%
2002	07/01-09/25	36	76	9	3	95.5%
2003	07/15-09/13	22	75	11	2	96.9%
2004	07/29-09/12	21	94	9	3	96.5%
2005	07/04-09/09	20	93	6	4	95.4%
2006	07/23-08/25	10	79	4	3	96.0%
2007	07/26-09/09	20	83	9	2	97.3%
2008	07/08-08/21	12	45	3	0	100.0%
2009	06/24-08/26	17	84	7	2	97.4%
2010	08/18-08/24	4	43	4	1	97.4%
Total		369	186 ¹	86		

¹The number of whales identified annually includes resightings of individuals from previous years. The number of whales identified does not correspond to the size of the population.

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