

EVOS ANNUAL PROJECT REPORT

Project Number: 04012

Project Title: Monitoring of Killer Whales in Prince William Sound and Kenai Fjords, Alaska

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Time Period Covered by Report: October 2003-August 2004

Date of Report: 25 September 2004

1. **Work Performed:** During summer 2004, a total of twelve field days dedicated to photoidentification of AB pod, other major resident pods, and the AT1 transient group have been completed. The AB17 and AB10 subpods were thoroughly photographed and there were no new mortalities. The AB25 subpod, however, was not observed or photographed. The AB25 was part of AB pod prior to the oil spill, but has travelled with AJ pod following the spill, although the AB25 whales have maintained their AB pod vocal dialect. In 2003 the AB25 subpod was not travelling with AJ pod during repeated encounters with that pod and AJ pod was not photographed in 2004. In 2003 the AB25s were encountered once and not thoroughly photographed, but it appeared there were at least two whales missing from the group. At this time it appears that the AB17 and AB10 subpod are functioning as a pod, and that the AB25 subpod has permanently split with AB pod. The lack of sightings of the AB25 subpod over the past two seasons raises a red flag. The loss of this subpod or of many of the individuals within it would be an unexpected long-term effect of the *Exxon Valdez* oil spill. We believe that deaths of important matriarchs following the oil spill caused the initial splitting of ABpod and this may have reduced the viability of the AB25 subpod.

We have not analyzed all the 2004 photographic data, but the data on individuals within major resident pods has been updated through 2003 and is presented graphically in Figure 1. AB25 subpod has not been split from AB pod in this representation for the purposes of consistency with previous years, it is assumed in this figure that the AB 25 animals are still alive. Overall numbers in Prince William Sound and southeastern Alaska resident pods continue to increase and only AB pod has declined since 1988 (pre spill counts).

We had 12 encounters with members of the AT1 population in 2004 (tourboats reported them on several other occasions). A total of 7 AT1 whales were repeatedly encountered in various groupings. The AT2,3, and 4 subgroup and the AT9,10, and 18 subgroup were encountered both separately and together. On 3 occasions the male AT6 was also photographed, once alone (contributed photo) and twice with the other subgroups. Three males that were last sighted in 2001 (AT 13 and AT17) and one last sighted in 2002 (AT14) were missing again in 2004 (Table 1). From mtDNA analysis an AT1 whale was identified dead and stranded on Latouche Island in spring 2003 and another was identified dead and stranded on Hinchinbrook Island in 2002. Pending nuclear DNA analysis should determine the individual identities of the stranded whales. In any event, two of these three missing males are apparently dead leaving a maximum of 8 whales in the AT1 group. We are increasingly concerned that all three males (AT14, 13, and 17) may be dead.

In 2004 AT1 whales were observed preying on Dall's porpoise and a probable harbor seal (genetics pending) and one harbour seal predation was also reported by the tourboats. Harbor seals and Dall's porpoise were previously identified as important prey items (Saulitis 2000), however, a new item was added to the list of known prey when they were observed attacking and consuming a northern fur seal on the outer coast between Kenai Fjords and Prince William

Sound. Northern fur seals are infrequently sighted in the region. Again, there was no evidence of predation on Steller sea lions by AT1 whales.

Nearly all the encounters with the AT1 whales were in the Kenai Fjords area, which is not the historical pattern; historically most encounters have been in Prince William Sound. This situation may be due to the possible upturn in abundance of harbor seals in the Kenai Fjords region (at least lack of further decline) in areas being monitored by the Alaska Sea Life Center while counts in the central Prince William Sound continue to decline. It might also reflect an increasing dependence on Dalls porpoise and increased foraging in offshore areas adjacent to the Kenai Fjords. We will be working with Anne Hoover Miller at the ASLC to investigate movements of harbour seal in relation to killer whale activity.

A side effect of the repeated presence of the AT1 whales in Kenai Fjords is their repeated exposure to tourboat traffic. Unfortunately now that the tourboat fleet is aware of their status as depleted, there is considerable effort made to view these rare whales, and the extended viewing times may impact the ability of these whales to hunt. Strict viewing guidelines in regard these whales should be considered. A meeting to discuss status and management/research options for the AT1 population (sponsored by the NMFS) is scheduled for November 10, 2004.

Fig. 1. The number of resident killer whales in AB pod, in seven other Prince William Sound pods, and in three Southeastern Alaska pods. 1984-2002

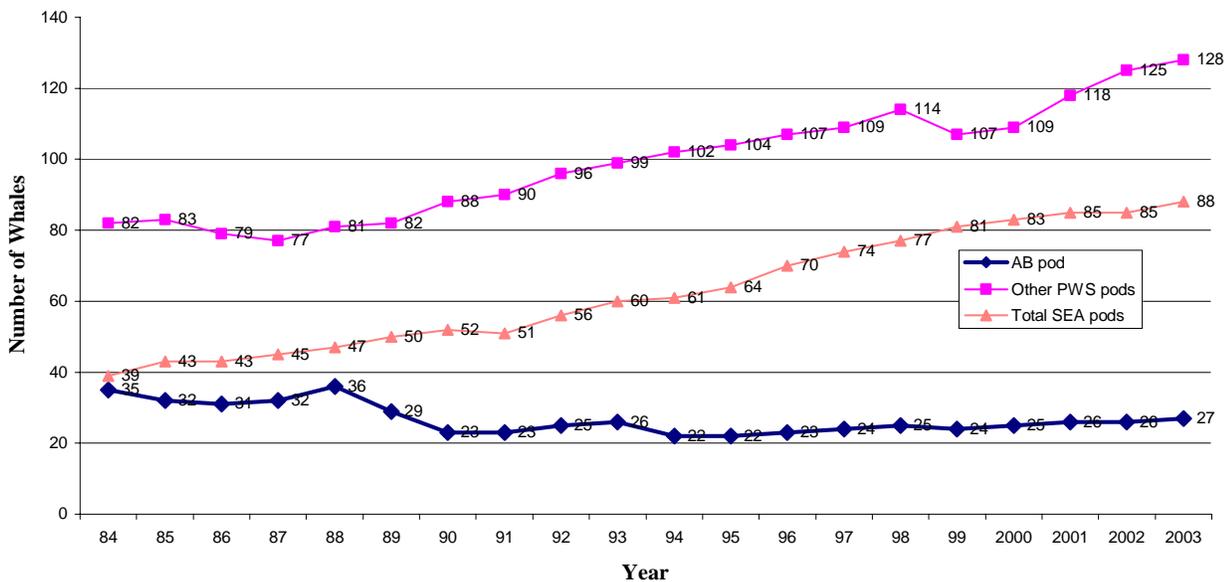


Table 1. Sighting histories for all AT1 transient whales for years with effort greater than 40 days.

<u>YEAR</u>	<u>AT1</u>	<u>AT2</u>	<u>AT3</u>	<u>AT4</u>	<u>AT5</u>	<u>AT6</u>	<u>AT7</u>	<u>AT8</u>	<u>AT9</u>	<u>AT10</u>	<u>AT11</u>	<u>AT12</u>	<u>AT13</u>	<u>AT14</u>	<u>AT15</u>	<u>AT16</u>	<u>AT17</u>	<u>AT18</u>	<u>AT19</u>	<u>AT20</u>	<u>AT21</u>	<u>AT22</u>	
84	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
85	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
86	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	
88	X	X	X	X				X	X	X	X	X	X	X	X		X	X		X	X	X	
89	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
90	X	X	X	X	-	X	-	-	X	X	X	X	X	X	-	-	X	X	O	-	-	-	
91	X	X	X	X	-	X	-	-	X	X	-	X	X	X	-	-	X	X	O	-	-	-	
92	X	X	X	X	-	X	-	-	X	X	-	-	X	X	-	-	X	X	O	-	-	-	
93		X	X	X	-	X	-	-	X	X	-	-			-	-	X	X	O	-	-	-	
94	X				-		-	-	X	X	-	-		X	-	-		X	O	-	-	-	
95	X	X	X	X	-	X	-	-	X	X	-	-	X	X	-	-	X	X	O	-	-	-	
96	X	X	X	X	-	X	-	-	X	X	-	-		X	-	-		X	O	-	-	-	
97	X	X	X	X	-		-	-			-	-	X		-	-	X		O	-	-	-	
98	X				-	X	-	-	X	X	-	-	X	X	-	-	X	X	O	-	-	-	
99		X	X	X	-	X	-	-	X	X	-	-			-	-		X	O	-	-	-	
2000	O				-		-	-			-	-	X	X	-	-	X		O	-	-	-	
2001	O	X	X	X	-	X	-	-	X		-	-	X		-	-	X	X	O	-	-	-	
2002	O	X	X	X	-		-	-	-		-	-		X	-	-			O	-	-	-	
2003	O	X	X	X	-	X	-	-	X	X	-	-			-	-		X	O	-	-	-	
2004	O	X	X	X	-	X	-	-	X	X	-	-			-	-		X	O	-	-	-	

X whale present

- whale missing, believed dead

O whale known dead

2. Future Work:

Fieldwork through 2004 has been completed and results will be incorporated into a report to the Alaska Sea Life Center due in the winter 2004-2005. The annual EVOS workshop will be attended in January 2004 . Limited monitoring will continue through 2007 as part of the GEM program

3. Coordination/Collaboration:

We are collaborating with Steller sea lion research projects (examining predation by killer whales) as well as with killer whale projects extending into Kodiak and the Aleutian Islands to assess the killer whale populations and aid in interpretation of genetic data. We are also collaborating with Jim Bodkin (sea otter program) to assess any potential changes in predatory behaviour of killer whales toward sea otters and with Anne Hoover Miller and Gail Blundell to examine changes in numbers and behaviours of killer whales in regard harbour seal numbers and distribution.

4. Community Involvement/TEK & Resource Management Applications:

We participated in Youth Area Watch Program in May 2003 taking young students to participate in field work. We held workshops in Seward in May 2004 for tourboat operators and others detailing the latest research findings and providing guidelines for behaviour when observing marine mammals. Popular presentations were made in Anchorage, Sitka, and Homer during winter and spring 2004.

5. Information Transfer:

a. Publications produced

K.Heise, L.G. Barrett-Lennard, E. Saulitis, D. Bain, C.O. Matkin. In press Examining evidence for killer whale predation on Steller sea lions. *Marine Mammal Science*.

Matkin, C.O. Olesiuk, P. , G. Ellis, and E. Saulitis. Population dynamics of resident killer whales in southern Alaska. In prep. *Marine Mammal Science*.

Saulitis, E.L., C. O. Matkin, F.H. Fay submitted. Vocal repertoire and acoustic behavior of the isolated AT1 Killer Whale (*Orcinus orca*) subpopulation in southern Alaska

b. Conferences attended

Paper presented at the joint EVOS/SSLRI symposium in Anchorage, Alaska in January 2004.
Two papers to be presented at the Marine Mammals of the Holarctic Conference in the Ukraine
November 2004

c. Data/information products

Updates to our website are made on a regular basis. Popular public presentations are given at regular intervals in various towns in Alaska

6. Budget:

Budget is on schedule and project total costs will fall within budget

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Project Web Site Address: <http://www.whalesalaska.org>