Summary of collaborative photographic identification of gray whales from California to Alaska for 2007

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A collaborative effort involving multiple research groups to examine the occurrence and abundance of gray whales primarily in Summer and Fall from California to SE Alaska began in 1998 with the support of the National Marine Mammal Laboratory (NMML). Previous reports have summarized the results of this work through 2006 (Calambokidis et al. 2002, 2004, Calambokidis 2008). The purpose of this report is to summarize results of the matching of identification photographs for the 2007 field season and compare these results with those reported previously. This collaborative research effort has focused on the gray whales that feed through the summer and fall in the Pacific Northwest, a group that has been referred to as "seasonal residents" or the Pacific Coast Feeding Aggregation (PCFA). While the collaborative effort reported here began in 1998, there had been indications of the existence of such a group much earlier; photographic identification tracking of individuals began in the 1970s off Vancouver Island (Darling 1984).

Identification photographs of gray whales were taken by different research groups working from California to southeastern Alaska in 2007 (Table 1). Ten different groups contributed significant numbers of identification photographs of gray whales during the period. Some of these were done with support from NMML, but effort was also conducted outside or beyond the level of effort that was contracted.

Table 1. Summary of photo-IDs of gray whales by year and contributor through 2007.

Research Group	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
Brian Gisborne	373	343	779	586	435	875	326	429	527	117	4,790
Coast. Ecos. Res. Found.	101	150	251	466	295	180	781	11	42	11	2,288
Cascadia Research	170	234	118	79	135	112	183	33	62	102	1228
Nat Marine Mammal Lab	132	194	135	128	88	76		133	92	39	1,017
Univ. Vict.	351	159	128		121					1	760
Humboldt State Univ.	21	89	60	75	71						316
Makah Tribe							44	60	142	79	325
Wendy Szaniszlo								127	44	48	219
Volker Deecke	39	42	28	11		7			50		177
Jim Darling	50			35	14						99
Carrie Newell									13	73	86
Other	4	12	1	1	0	7	0	1	30	49	105
Total	1,241	1,223	1,500	1,381	1,159	1,257	1,334	794	1,002	519	11,410
Unique IDs	156	248	178	198	254	178	198	206	180	157	891
Unique >1 June NCA-SEAK	135	157	139	175	206	161	182	139	131	123	501

Effort was distributed over a broad area and time period overall (Table 2). Some effort was undertaken early in the season in several areas, especially the Puget Sound and Grays Harbor areas of Washington (by Cascadia Research) and along the S and W sides of Vancouver Island (by Brian Gisborne, Volker Deecke, and Wendy Szaniszlo). These early-season efforts were important for looking at the identity of some of the animals that break off from the migration early in the season to feed in specific areas. These identifications were not included in the overall mark-recapture estimates or other elements of the analysis of PCFA animals that have generally only included animals seen after 1 June to avoid overlap with the migration.

Table 2. Summary of month and region for identifications made by all contributors in 2007.

	Month												
Region	**1**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**	**Unique**
SE AK					1	3						4	3
N Brit Col.							10	1				11	5
W Vanc. Is.		40	2		8	9	15	18				92	41
S Vanc. Is.		12	1	3	7	25	24	4				76	44
N Puget Sound		7	21	1								29	6
Puget Sound				2								2	1
Str Juan de Fuca					2	12	28	26	5	7	11	91	18
N Wash.						6	15	2				23	12
Grays Harbor area	2		1		16			27				46	41
N Oregon				3	4	40	30	9	20			106	39
S Oregon						8		19				27	23
N California								2				2	1
C California			1	9								10	5
Total	2	59	26	18	38	103	122	108	25	7	11	519	
Unique	2	36	9	9	31	53	41	64	14	7	8		157

A total of 519 identifications were made (157 unique individuals) in 2007. Of these identifications, 414 were made after 1 June 2007 representing 123 unique individuals. Of the 157 individuals identified, 42 (27%) were new to the Cascadia catalog and 115 (73%) were already known from past years. A higher proportion of these new whales were from the identifications made either before 1 June or in areas outside the core region (Oregon to British Columbia) where PCFA whales are known to occur. For the 34 whales identified only prior to 1 June, only 15 (44%) were known from past years (most of these from the N Puget Sound Region) and for the 123 whales seen at least once after 1 June, 100 (81%) had been identified previously.

Even though effort in most regions was similar to past years, there were shifts in the number of sightings by region reflecting changes in gray whale distribution in 2007. The numbers of identifications at all sites from N Washington north through British Columbia were dramatically lower than in other recent years. This was most dramatic off southern Vancouver Island where the daily effort by Brian Gisborne covering one of the areas of highest gray whale density has generally contributed close to 50% of the identifications from all contributors. Only 76 identifications of 44 individuals were made in this region in 2007 that contrasts with 2006 when

472 identifications (close to 50% of all the identifications that year) were made of 70 individuals. Both the number of individuals identified and the number of times each individual was seen were down despite similar effort showing that fewer animals used this area in 2007 and those that did spent less time there. Similarly, the number of identifications made in the Cape Caution area of northern British Columbia (mostly by CERF) also dropped from 23 individuals identified in 2006 to just 5 in 2007.

In contrast to the lower numbers of gray whales seen at study areas to the north, more whales were identified at some of the southern study areas in 2007 compared to previous years (where there was consistent effort). Both off of Grays Harbor in southern Washington and in Oregon, higher numbers of whales were identified than in most past years. One of the most dramatic changes was the 41 individuals identified in just a couple of days of effort offshore of Grays Harbor in 2007 and this is discussed in more detail in a later section. Of the 86 whales identified off Grays Harbor and Oregon in 2007, 46 or 53% of them had been identified in previous years off southern Vancouver Island.

Whales identified in 2007 matched to those seen in past years going back to at least 1998 when broader scale effort began. Between 29% and 58% of the whales identified each year since 1998 were also seen in 2007 (Table 3). This proportion as highest for 2005 and 2006 where 50% and 58% of the whales identified matched to 2007. The proportion was slightly lower for 1998 to 2004 (29% to 43%) but was fairly steady within that period.

Table 3. Number of gray whales identified from N California to SE Alaska (excluding Puget Sound area) after 1 June by year and the proportion that matched whales identified in 2007.

Year	Unique IDs	Match to 2007	% match
1998	135	46	34%
1999	157	46	29%
2000	139	52	37%
2001	175	56	32%
2002	206	75	36%
2003	161	70	43%
2004	182	71	39%
2005	139	69	50%
2006	131	76	58%
2007	123	123	100%

For the 10 years of fairly consistent effort at least for the core area of Oregon to northern British Columbia, a total of 428 whales have been identified after 1 June. Almost half of these (198 or 46%) were whales seen only one year and most of these (107) were seen only one time in that year. There was a clear relationship between the number of times per year a whale was seen and how many years it was seen (Figure 1). While only 19% of the identified whales were seen seven or more of the 10 years from 1998 to 2007, these whales accounted for 65% of the sightings of gray whales, both reflecting the high number of times they were seen each year and the large number of years they were seen.

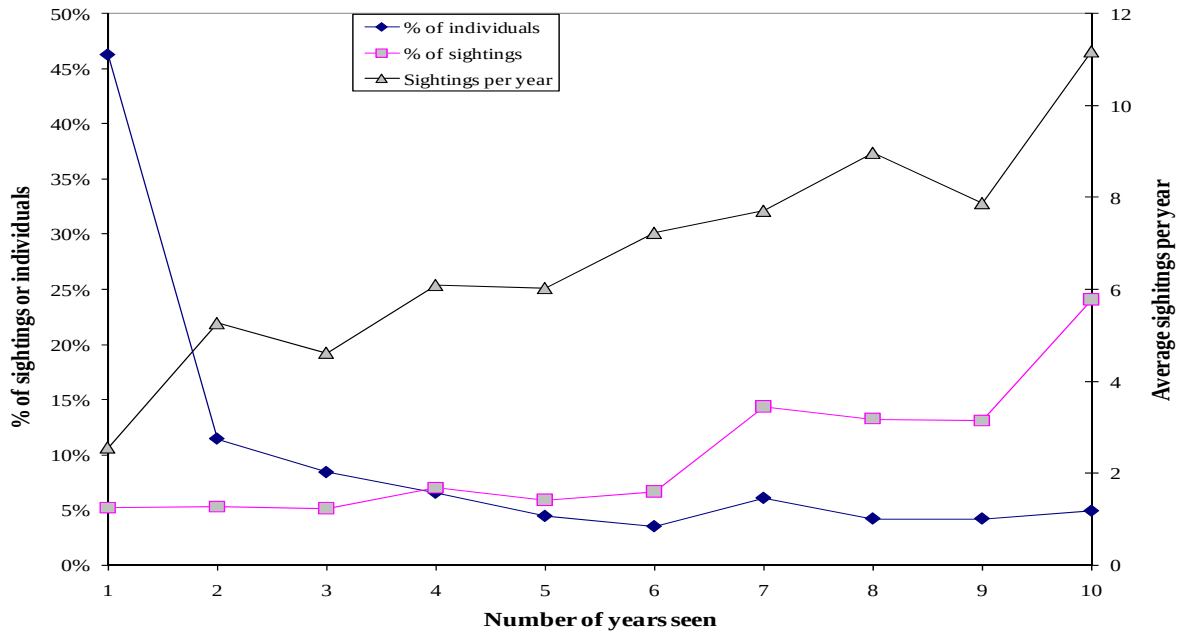

Figure 1. Relationship between number of years different whales were seen in the core region of Oregon to Northern British Columbia after 1 June for 1998 to 2007 and how many times per year they were seen and what percent of the individuals and sightings these whales represented.

A total of 171 gray whales have been identified in the regions that include the Makah Usual and Accustomed areas (N Washington and Strait of Juan de Fuca) after 1 June in any year (Table 4). The proportion of whales identified in other regions that match to this area decrease with distance from the Makah U&A (Table 4). The exception to this is that whales identified in Puget Sound generally did not match to this region. Other than Puget Sound, 40% or more of the whales identified from Oregon to northern Vancouver Island had been seen at least once in the Makah U&A. The proportion matching the Makah U&A dropped to intermediate rates (20 to 32%) for N California, N British Columbia, and SE Alaska, and to 1% or less for Kodiak and central and southern California.

Table 4. Number of gray whales identified after 1 June by region for all years and proportion matching the whales seen in the N Washington and Strait of Juan de Fuca (Makah U&A).

Region	IDs	Match NWA/SJF	% match
Kodiak	107	1	1%
SE AK	21	5	24%
N Brit Col.	114	37	32%
W Vanc. Is.	212	86	41%
S Vanc. Is.	250	104	42%
Puget Sound	33	3	9%
N Wash./Str. Juan de Fuca	171	171	100%
Grays Harbor area	50	20	40%
N Oregon	90	46	51%
S Oregon	72	32	44%
N California	128	25	20%
C and S California	13	0	0%
Total	675		

Sightings of gray whales in northern Puget Sound continued to reveal that this area is used as a springtime feeding area for a small regularly occurring group of gray whales (Table 5). Only six unique whales were identified from the 29 times good identification photographs were obtained in 2007 and all of these whales had been seen in past years. These whales were primarily identified from late March through May. All six of these whales had been identified in the region going back to at least 2000.

Table5. Sighting histories of gray whales identified in northern Puget Sound. Includes all individuals that have been sighted in this region since 2001. Numbers indicate times seen. Values for 2008 shown as X indicates animal has been sighted at least once in 2008.

ID	1990	1991	1992	1993	1994	1995	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
21	1	16	5	2		7	6	4	5			1	13	1	9	3	X
22	1	1	2	1		5	7	4	3			4		2	14		X
44		14	9	3		3		1	1	1		1	16	2		5	X
49		6	4	2	2	2	5	1	1	5	2	2	11	2	5	5	X
53		12		2	2	2		1	2		2	5	9	2	9		
56		2					1		5	2		1	6	2	7	2	X
356								1		1		1	1		1		X
383								2		1		1	7	1	7	6	X
531									2					2	3	8	X
723													19	3	5		

Identification of whale killed in September 2007

As a part of the matching of the 2007 whales we specifically attempted to determine the identity of the gray whale killed in the Strait of Juan de Fuca on 8 September 2007 by a group of Makah whalers operating without the permission of the Makah Tribe or NMFS. We made initial attempts to identify this whale in the aftermath of this hunt but were unable to find a match of this whale because none of the photographs taken on 8 September showed the dorsal part of the side that we use for our photo-ID (a biologist only arrived on the scene only well after the whale had been mortally wounded preventing it from surfacing normally). These photographs did show markings on the front of the animal and we searched for some of these distinctive markings on the front of the whale while matching other collections from 2007. As a part of this effort we were able to find a match to photographs taken near Neah Bay by NMML in 2007 that helped link it to a good identification photograph. These results have also been reported in a statement from the Makah Tribe (http://www.makah.com/images/Whale_ID_PressRelease_5.6.09.pdf).

The whale that was killed was CRC-175 (Figures 2 and 3) which had a long sighting history with 143 sighting records in our database from a number of research groups between 1995 and 2007. The locations of the previous sightings extended from northern California to central Vancouver Island (Figure 4). The earliest sightings in our records were by Calambokidis on 22 and 23 July 1995 less than a mile south of Cape Flattery. The latest identification made prior to when it was killed on 8 September 2007 was on 30 August 2007, east of Neah Bay during a NMML survey. The whale had been seen frequently in the past in the Neah Bay area with sightings in at least 7 years in the Makah U&A. Most sightings were in June to October but there were four identifications made in mid and late May off southern Vancouver Island in 1993, 2000, and 2003. It had also been identified by many other groups including; Cascadia Research, NMML,

UVIC (WL035 and WL060), Jim Darling, Wendy Szaniszlo, Makah Tribe, Volker Deecke (UK98-11), Brian Gisborne, and Carrie Newell (*Orion*, *Ruler*, and *Saucer*).

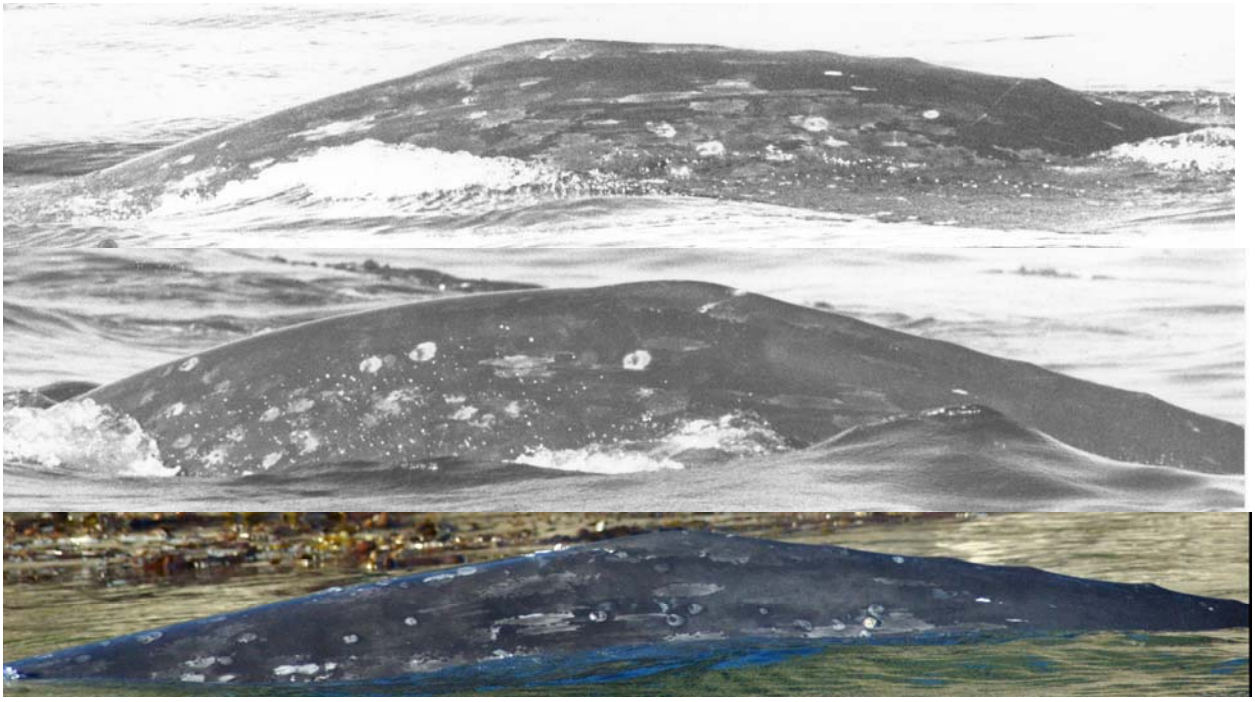

Figure 2. Left side views of CRC-175, the whale that was killed in Fall 2007 near Neah Bay. Top photo by Merrill Gosho, middle by Jim Darling, and bottom by Nate Pamplin. The variability in the lighting alters the distinctiveness of some of the marks.

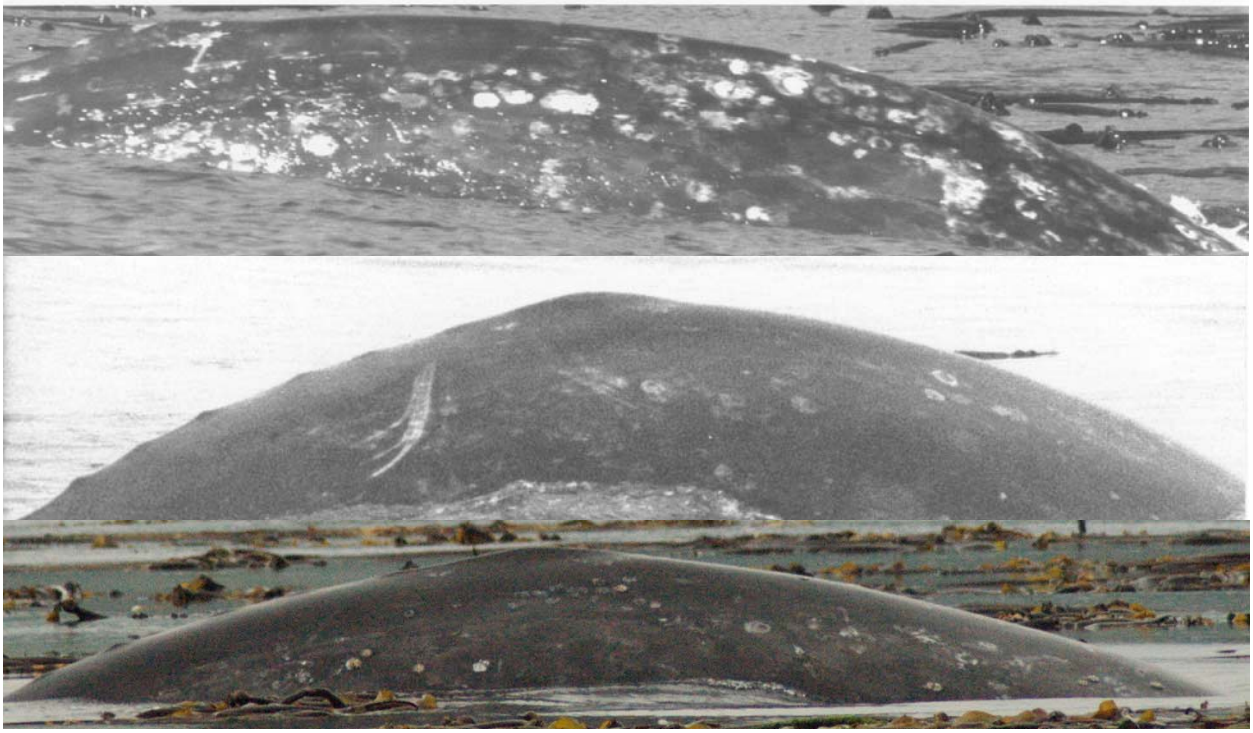

Figure 3. Photos of the right side of whale CRC-175. Top photo by Christina Tombach, middle by Merrill Gosho, and bottom by Nate Pamplin. These are a more difficult match than typical.

The timing and location that this whale was taken made it by definition part of the PCFA group. The sighting history also demonstrates that it was a well-known whale seen over many years. A whale that is killed and landed as planned by the Makah would provide a more reliable opportunity for obtaining identification photographs. Despite the challenges faced in 2007 with the difficulty of obtaining good identification photographs, the ability to identify this whale also demonstrates that this can be an effective way to identify future whales that may be hunted in the spring to determine if they are PCFA whales.

Figure 4. Locations CRC-175 was sighted off northern Washington and British Columbia prior to being killed in September 2007. Additional sightings off northern California and Oregon are not shown.

Surveys off Grays Harbor

As a part of a separate project examining both visual and acoustic detections of marine mammals off the central Washington coast in collaboration with Scripps Institution of Oceanography for the US Navy, we obtained sightings and photographic identifications of gray whales that are summarized below (see also Oleson et al. 2007, In prep). There were seasonal differences in the distribution and habitat utilization of gray whales corresponding to three time periods matching stages in their life history (Figure 5):

1) Sightings in December and January (corresponding to the southbound migration of gray whales from their primary feeding ground in Alaska to their breeding grounds in Mexico when whales were primarily in deep water far offshore (average of 29 km offshore and 126 m water depth).
2) Sightings for February to April (northbound migration past Washington as the main population heads back to Alaskan waters) tended to be close to shore mostly on a north-south distribution averaging about 10 km offshore.
3) Sightings in May to October (when primarily gray whales from the PCFA are present) were clustered in two areas, in and around the entrance to Grays Harbor and also 20-25 km offshore in depths of about 60 m.

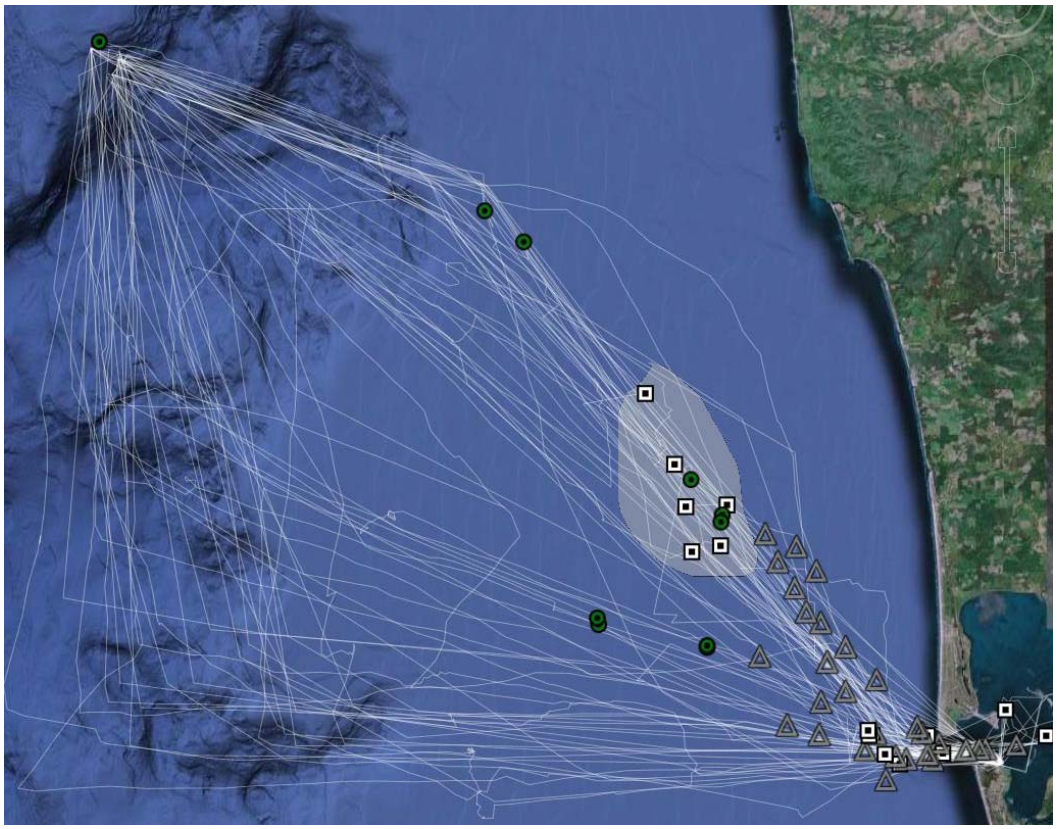

Figure 5. Sighting location of gray whales by season (circles - winter, triangles - spring, and squares - summer and fall . Lines show survey tracks for approximately monthly surveys conducted from 2004 into 2008. Shaded area shows location of concentration of feeding gray whales seen from June to September 2007.

The offshore sightings of gray whales during the summer represented a surprising finding given the typical pattern of gray whales feeding in the Pacific Northwest, which tend to feed close to shore in shallow waters. These offshore sightings were all made between 8 June and 1 September of just 2007 and while they were grouped into just 6 sightings, they totaled 42 whales since each sighting represented a concentration of up to 14 whales in one area.

Identifications from the concentration of gray whales in 2007 found feeding almost 10 nmi offshore in the summer and fall. The identifications revealed that this unusual offshore feeding

concentration consisted almost exclusively of animals known as “seasonal residents” in other parts of the Pacific Northwest. All but one of the 28 individuals had been identified in other feeding areas in the Pacific Northwest.

Mark-recapture abundance estimates

Data for 2007 was used to update estimates of abundance using Petersen mark-recapture estimates with adjacent years as samples (Table 6, Figure 6). As in past years, only identifications from after 1 June and excluding the Puget Sound area were used in the abundance estimates. Estimates of abundance based on 2006 and 2007 were 212 and 203 depending on the regional cut-offs used (Table 6). This estimate is just slightly higher than the estimates from 2005-2006 though still at the low end of the range of values obtained from these estimates based on adjacent-year samples (Figure 6). Rather than reflecting any real change in abundance these fluctuations are more likely the result of small shifts in distribution and effort affecting how these animals are sampled.

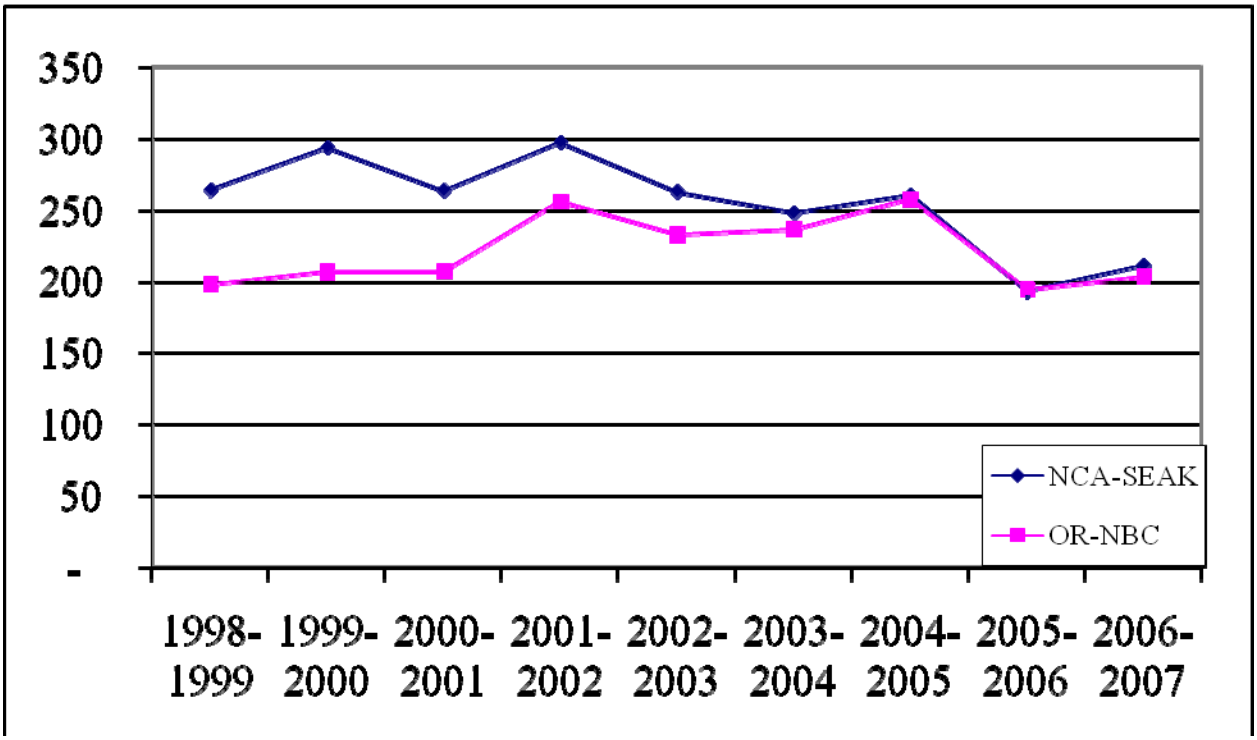

Figure 6. Plot of Petersen mark-recapture estimates of abundance based on photo-IDs of gray whales identified after 1 June and excluding (Puget Sound).

Table 6. Petersen mark-recapture estimates of abundance based on photo-IDs of gray whales identified after 1 June. Estimates below are shown for two different core areas (a larger Northern California to SE Alaska and a smaller core area of Oregon to British Columbia (both exclude peripheral areas including Puget Sound, Kodiak, and central or southern California).

	Unique Ids				
Sample periods	**n1**	**n2**	**Recapt.**	**Estimate**	**CV**
NCA-SEAK					
1998-1999	135	157	80	**264**	0.05
1999-2000	157	139	74	**294**	0.06
2000-2001	139	175	92	**264**	0.04
2001-2002	175	206	121	**298**	0.03
2002-2003	206	161	126	**263**	0.03
2003-2004	161	182	118	**248**	0.03
2004-2005	182	139	97	**260**	0.04
2005-2006	139	131	94	**194**	0.03
2006-2007	131	123	76	**212**	0.05
OR-NBC					
1998-1999	116	120	70	**198**	0.05
1999-2000	120	114	66	**207**	0.05
2000-2001	114	151	83	**207**	0.04
2001-2002	151	180	106	**256**	0.03
2002-2003	180	154	119	**233**	0.03
2003-2004	154	180	117	**237**	0.03
2004-2005	180	139	97	**258**	0.04
2005-2006	139	129	92	**195**	0.03
2006-2007	129	120	76	**203**	0.04

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Acknowledgements

This analysis would not have been possible without the collaborating organizations contributing identification photographs listed in Table 1. Support for the photographic identification reported here, the comparison of gray whale photographs and preparation of this report came primarily from the National Marine Mammal Laboratory (coordinated by Jeff Laake). Permission to conduct some portions of this research was provided by the U.S. National Marine Fisheries Service and the Makah Tribal Nation.

We thank the operators of the boats that allowed us to gather data from their boats in northern Puget Sound. A number of people assisted in the field effort and in the printing and matching of photographs at Cascadia Research. Erin Falcone compiled the data from the different contributors. Cascadia field effort on gray whales was conducted by a number of volunteers and staff at Cascadia.

Appendix Table 1. Sighting histories of gray whales identified in 2007.

ID	count	1st 2007	Last 2007	CA	NCA	SOR	NOR	GH+	NWA	SJF	PS	NPS	SVI	WVI	NBC	SEAK	1sr Yr
6	1	14-Sep-07	14-Sep-07			1											1986
21	3	31-Mar-07	21-Apr-07									3					1990
30	3	8-Jun-07	1-Sep-07					2					1				1983
32	2	24-Mar-07	24-Mar-07										1	1			1985
42	2	23-Jun-07	1-Sep-07					1					1				1984
44	5	6-Apr-07	4-May-07									5					1991
49	5	24-Mar-07	27-Apr-07									5					1991
56	2	24-Mar-07	31-Mar-07									2					1991
81	2	16-Jun-07	16-Jun-07											2			1993
84	7	21-May-07	11-Jul-07						2				5				1990
86	15	13-Aug-07	21-Sep-07										1	14			1977
87	1	14-Sep-07	14-Sep-07			1											1993
89	8	17-Jul-07	14-Sep-07			3	5										1993
91	2	11-Jul-07	14-Jul-07			1	1										1993
92	10	8-Jun-07	26-Sep-07					1	4	2			3				1993
94	5	8-Jul-07	5-Aug-07				1						3	1			1993
101	1	8-Jun-07	8-Jun-07					1									1984
105	3	22-Jun-07	4-Aug-07							2			1				1994
107	3	7-Aug-07	1-Sep-07				2	1									1994
123	1	1-Sep-07	1-Sep-07					1									1998
127	4	14-Jul-07	14-Sep-07			2	2										1986
130	2	14-Jul-07	18-Jul-07										2				1998
135	2	8-Jun-07	7-Dec-07					1		1							1998
138	12	18-Jun-07	21-Sep-07										1	6	5		1998
141	6	24-Mar-07	1-Sep-07					1	1				1	1		2	1990
143	18	24-Mar-07	21-Sep-07										1	17			1998
144	3	31-Mar-07	27-Jul-07										1	2			1998
154	1	8-Jun-07	8-Jun-07					1									1998
169	2	29-Jul-07	1-Sep-07					1					1				1995
175	10	15-Jul-07	8-Sep-07*				4		1	1			4				1995
178	12	19-Jun-07	7-Dec-07						2	7			1	2			1995
185	1	1-Sep-07	1-Sep-07					1									1996
186	3	8-Jun-07	27-Jul-07				2	1									1994

ID	count	1st 2007	Last 2007	CA	NCA	SOR	NOR	GH+	NWA	SJF	PS	NPS	SVI	WVI	NBC	SEAK	1sr Yr
192	2	8-Jun-07	1-Sep-07					2									1996
196	6	7-Jul-07	12-Sep-07						4				2				1996
204	4	17-Jul-07	5-Aug-07				4										1996
206	2	14-Sep-07	11-Oct-07			1	1										1996
215	3	26-Jul-07	14-Sep-07			1	2										1996
219	4	31-Mar-07	13-Oct-07				1	1					1	1			1997
227	2	10-Jul-07	11-Jul-07										2				1998
231	1	14-Sep-07	14-Sep-07			1											1998
242	2	15-Aug-07	30-Aug-07							2							1998
244	10	18-Jul-07	26-Sep-07						2	7				1			1998
254	3	24-Mar-07	14-Sep-07			1	1							1			1998
265	1	24-Mar-07	24-Mar-07										1				1998
280	2	8-Jun-07	26-Jun-07					2									1998
281	1	14-Sep-07	14-Sep-07			1											1991
289	1	1-Sep-07	1-Sep-07					1									1991
295	2	11-Jul-07	14-Jul-07			1	1										1991
296	3	14-Aug-07	25-Aug-07						2				1				1998
300	4	26-Jul-07	5-Aug-07				4										1998
302	6	8-Jun-07	1-Sep-07				1	3					1		1		1998
303	1	5-Aug-07	5-Aug-07				1										1998
308	6	11-Jul-07	12-Oct-07				5						1				1998
309	1	19-Jul-07	19-Jul-07										1				1998
311	1	1-Sep-07	1-Sep-07					1									1998
317	5	31-Mar-07	14-Sep-07			1	2							2			1998
328	1	24-Mar-07	24-Mar-07											1			1998
364	6	19-Aug-07	17-Oct-07				6										1999
372	1	1-Sep-07	1-Sep-07					1									1999
383	6	31-Mar-07	28-Apr-07									6					1999
392	3	19-Sep-07	13-Oct-07				3										1999
411	2	11-Oct-07	13-Oct-07				2										1999
510	1	1-Sep-07	1-Sep-07					1									2000
525	3	1-Sep-07	7-Dec-07					1		2							2000
531	9	24-Mar-07	26-Apr-07									8	1				2000
537	1	14-Jul-07	14-Jul-07			1											2000

ID	count	1st 2007	Last 2007	CA	NCA	SOR	NOR	GH+	NWA	SJF	PS	NPS	SVI	WVI	NBC	SEAK	1sr Yr
554	1	14-Jul-07	14-Jul-07			1											2000
561	1	1-Sep-07	1-Sep-07					1									2000
565	8	12-Aug-07	13-Oct-07				8										2000
581	1	30-Jun-07	30-Jun-07										1				2001
583	11	24-Mar-07	15-Sep-07										9	2			2001
584	2	3-Aug-07	22-Aug-07												2		2001
594	1	24-Mar-07	24-Mar-07											1			1999
611	1	14-Jul-07	14-Jul-07			1											2001
624	2	13-Sep-07	27-Sep-07		2												2001
635	2	11-Oct-07	11-Oct-07				2										2001
639	1	27-Jul-07	27-Jul-07				1										2001
642	1	31-May-07	31-May-07	1													2001
657	3	3-Apr-07	14-Sep-07			1	1	1									2002
668	1	19-Aug-07	19-Aug-07				1										2002
669	1	14-Sep-07	14-Sep-07			1											2002
682	2	3-Jul-07	1-Sep-07					1					1				2002
687	1	1-Sep-07	1-Sep-07					1									2002
688	2	1-Aug-07	8-Aug-07				1								1		2002
694	12	24-Mar-07	1-Sep-07										7	3	2		2000
698	1	1-Sep-07	1-Sep-07					1									2002
701	2	27-Jun-07	8-Jul-07				1		1								2002
703	1	13-Sep-07	13-Sep-07			1											2002
712	1	1-Sep-07	1-Sep-07					1									2002
718	1	1-Sep-07	1-Sep-07					1									2001
719	5	24-Mar-07	31-Mar-07										1	4			2002
720	6	17-Jul-07	1-Sep-07				5	1									2002
723	2	24-Mar-07	31-Mar-07											2			2002
759	2	7-Dec-07	7-Dec-07							2							2002
786	5	29-Jun-07	27-Oct-07				4						1				2003
787	9	23-May-07	14-Sep-07			1	7						1				2003
789	2	24-Mar-07	31-Mar-07										1	1			2003
797	12	27-Jun-07	13-Oct-07				12										2003
803	1	17-Jul-07	17-Jul-07				1										2003
813	1	11-Jul-07	11-Jul-07				1										2004

ID	count	1st 2007	Last 2007	CA	NCA	SOR	NOR	GH+	NWA	SJF	PS	NPS	SVI	WVI	NBC	SEAK	1sr Yr
818	1	24-Mar-07	24-Mar-07										1				2004
819	19	19-Jun-07	1-Nov-07							19							2004
823	5	8-Jul-07	5-Aug-07				4		1								2004
826	6	28-Jul-07	7-Dec-07							6							2004
842	6	24-Mar-07	7-Dec-07							4			2				2004
851	5	14-Aug-07	21-Sep-07						2	3							2005
857	4	24-Mar-07	11-Aug-07										1	3			2005
860	2	29-Jul-07	29-Jul-07											2			2004
866	1	7-Dec-07	7-Dec-07							1							2005
877	5	24-Mar-07	27-Jul-07							2			1	2			2005
878	12	15-Aug-07	21-Dec-07							12							2005
882	11	1-Jul-07	1-Nov-07						1	8			2				2005
932	12	24-Mar-07	1-Nov-07							10				2			2006

*Date CRC-175 killed in hunt