



**Request for 2012-2014 Renewal Of The
Letter of Authorization Under
The Marine Mammal Protection Act
For Incidental Harassment of Marine Mammals Resulting From
U.S. Navy Training and Research Activities In The
Southern California Range Complex**

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August 25, 2011



Photo: U.S. Navy destroyer passing San Clemente Island within the Southern California Range Complex May 2011

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Photos: Civilian scientists conducting Marine Mammal Observer duties aboard a U.S. Navy destroyer conducting Unit Level Training in the Southern California Range Complex, April 2011.

1. INTRODUCTION AND DESCRIPTION OF ACTIVITIES

INTRODUCTION

Pursuant to the Marine Mammal Protection Act of 1972¹, this document is the U. S. Navy's renewal application submitted to the National Marine Fisheries Service (NMFS) for a Letter of Authorization for incidental harassment of marine mammals from U.S. Navy (Navy) training and authorized activities in the Southern California Range Complex.

This Letter of Authorization application requests a 2-year period from January 2012 to January 2014 for the taking of marine mammals incidental to training and research within the Southern California Range Complex under the Marine Mammal Protection Act and in accordance with NMFS Final Rule (NMFS 2009).

Table 1 shows Marine Mammal Protection Act permit documentation applicable to the Southern California Range Complex and NMFS's authorization. Information contained in these references provide a complete description of the background for the U.S. Navy's request, overview of the Southern California Range Complex, and description of the specified activities, description of marine mammals in the area, discussion of potential effects or lack of effects of specified activities on marine mammal, mitigation, marine mammal monitoring, and associated reporting. The descriptions contained in these references have not changed, except as noted in this 2012-2014 renewal application package.

The Letter of Authorization application will not address activities designated for armed conflict or direct combat support operations, nor during periods of heightened national threat conditions, as determined by the President and Secretary of Defense or their duly designated alternatives or successors, as assisted by the Chairman of the Joint Chiefs of Staff.

Monitoring and Exercise reports required by 50 Code of Federal Regulations §216.275 (e) and (f) will be submitted no later than 1 October 2011 (Department of the Navy 2011 a,b).

There are no further changes to Chapter 1 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*), with the exception of the 2-year period requested in this application.

Subsequent Chapters without substantive changes from the U.S. Navy's previous Renewal Applications or other discussions are indicated.

¹ under Section 101 (a)(5)(A) of the Marine Mammal Protection Act

Table 1. Key Southern California Range Complex Marine Mammal Protection Act documents.

Timeline Date	From	Event	As cited in this renewal
26 Mar 2008	Navy	Letter Of Authorization Application (request for Incidental Harassment For S Southern California Range Complex) submitted to NMFS Office of Protected Resources	
18 Apr 2008	Navy	Letter of Authorization Application Update #1 submitted to NMFS Office of Protected Resources	
20 May 2008	Navy	Letter of Authorization Application Update #2 submitted to NMFS Office of Protected Resources	
14 Oct 2008	NMFS	Taking and Importing Marine Mammals; U.S. Navy Training In Southern California Range Complex; Proposed Rule published in Federal Register (73 FR 60836)	
15 Dec 2008	Navy	Southern California Environmental Impact Statement\Overseas Environmental Impact Statement- Final December 2008 published	
21 Jan 2009	NMFS	Taking and Importing Marine Mammals; U.S. Navy Training In Southern California Range Complex; Final Rule published in Federal Register (74 FR 3882)	NMFS 2009
22 Jan 2009	NMFS	2009 Letter of Authorization take of marine mammals incidental to Navy exercises conducted in Southern California Range Complex issued	
01 Oct 2009	Navy	Letter Of Authorization 2010 Renewal Application (request for Incidental Harassment For Southern California Range Complex) submitted to NMFS Office of Protected Resources	
28 Dec 2009	Navy	Letter of Authorization 2010 Renewal Application Update #1 submitted to NMFS Office of Protected Resources	
22 Jan 2010	NMFS	2010 Letter of Authorization take of marine mammals incidental to Navy exercises conducted in Southern California Range Complex issued	
30 Aug 2010	Navy	Letter Of Authorization 2011 Renewal Application (request for Incidental Harassment For Southern California Range Complex) submitted to NMFS Office of Protected Resources	Department of the Navy 2010
21 Jan 2011	NMFS	2011 Letter of Authorization take of marine mammals incidental to Navy exercises conducted in Southern California Range Complex issued	NMFS 2011a
7 Feb 2011	NMFS	Revised Letter of Authorization take of marine mammals incidental to Navy exercises conducted in Southern California Range Complex issued	NMFS 2011b
8 Feb 2011	NMFS	Taking and Importing Marine Mammals: U.S. Navy Training in the Hawaii Range Complex; U.S. Navy Training in the Southern California Range Complex; and U.S. Navy's Atlantic Fleet Active Sonar Training. Interim final rule published in the Federal Register (76 FR 6699)	NMFS 2011c

2. DURATION AND LOCATION OF ACTIVITIES

There are no further changes to Chapter 2 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*).

The amount of system use and training events being sought for the Southern California Range Complex over the 2-year authorization request from January 2012 to January 2014 is similar to annual training requested previously, or doubled when considering 2012 to 2014. In other words, annual training for the period 2012 to 2013 will be the same as the Navy requested and NMFS authorized for 2011, and the annual training for the period 2013 to 2014 will also be the same as the Navy requested and NMFS authorized for 2011.

3. MARINE MAMMAL SPECIES AND NUMBERS

There are no further changes to Chapter 3 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*), with the exception of the 2-year period requested in this application and except as where noted below.

NMFS Stock Assessment Report update

Since NMFS' Southern California Range Complex 2011 revised Letter of Authorization was issued (NMFS 2011b), NMFS' Southwest Fisheries Science Center on 10 Jun 2011 formally published its 2010 Pacific Stock Assessment Report (Carretta et al. 2011a, notice of availability 76 FR 34054).

<http://www.nmfs.noaa.gov/pr/sars/region.htm>

In addition, 24 August 2011, the DRAFT Pacific Stock Assessment report with updates to six species was also published by NMFS Southwest Fisheries Science Center (Carretta et al. 2011b, notice of availability 76 FR 52940).

<http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=148&id=1247>

Typically Pacific Stock Assessment Reports estimate marine mammal abundance for the entire U.S. West Coast and Hawaii, and may not reflect regional abundance within smaller geographic areas such as Southern California. Therefore, the U.S. Navy stands by, and includes by reference into this 2012 renewal application, the original marine mammal exposure estimates presented in the 2011 Letter of Authorization renewal application and subsequently authorized in NMFS' 2011 revised Letter of Authorization (NMFS 2011b).

NMFS Designation of Marine Mammal Critical Habitat or New Endangered Species Act Species Listings Within Southern California

In 2011, there was no designation of any new marine mammal critical habitat within Southern California, no listing of new Candidate marine mammal species, and no listing of new Proposed marine mammal species.

4. AFFECTED SPECIES STATUS AND DISTRIBUTION

There are no further changes to Chapter 4 from the U.S. Navy's 2010 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; see *also Table 1*) with the exception of the 2-year period requested in this application.

5. HARASSMENT AUTHORIZATION REQUESTED

There are no further changes to Chapter 5 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*), with the exception of the 2-year period requested in this application and except as where noted below.

The amount of harassment authorization requested by the U.S. Navy is similar to previous NMFS annual authorization from 2009 to 2011 (NMFS 2011b) and is shown below in Table 2 and Table 3 both annually (January 2012 to January 2013) and for the 2-year requested authorization (January 2012 to January 2014) (Table 3).

The Navy notes that the NMFS 2011 Level B authorization (NMFS 2011b) is inconsistent with the NMFS 2011 annual Biological Opinion for one Endangered Species Act species, the Guadalupe fur seal. The annual rule authorizes 1,105 takes, while the Biological Opinion authorizes 1,304 takes. Other Endangered Species Act species are aligned between the two NMFS authorizations (blue whale, fin whale, humpback whale, and sperm whale).

Given the precedence that Endangered Species Act species have in terms of statutory deference, the Navy requests that the 2012 Guadalupe fur seal take be set to match the Biological Opinion take statement of 1,304 annually, or 2,608 over the 2-year period sought in this application (Table 2).

For Level A harassment, the Navy's Level A request remains the same as previous authorization: Level A Harassment and/or mortality of no more than 10 beaked whales (total), of any of the species listed in 50 CFR § 216.272(c) (1) (ii) (D-G) over the course of the 5-year regulations.

Table 2. Annual and 2-year Level B harassment authorization sought for 2012-2014.

Species (Endangered Species Act species in <u>bold underlined</u>)	Annual Requested Take (2012-2013)	2-year Requested Take (2012-2014)
Mysticetes:		
<u>Humpback whale (<i>Megaptera novaeangliae</i>)</u>	13	26
<u>Fin whale (<i>Balaenoptera physalus</i>)</u>	138	276
<u>Blue whale (<i>Balaenoptera musculus</i>)</u>	509	1,018
Minke whale (<i>Balaenoptera acutorostrata</i>)	146	292
Gray whale (<i>Eschrichtius robustus</i>)	6,015	12,030
Odontocetes:		
<u>Sperm whales (<i>Physeter macrocephalus</i>)</u>	163	326
Pygmy sperm whales (<i>Kogia breviceps</i>)	183	366
Dwarf sperm whale (<i>Kogia sima</i>)	22	44
Mesoplodont beaked whales (Blainville's, Hubb's, Perrin's, pygmy, and ginkgo-toothed) (<i>Mesoplodon densirostris</i> , <i>M. carlhubbsi</i> , <i>M. perrini</i> , <i>M. peruvianus</i> , <i>M. ginkgodens</i>)-	152	304
Cuvier's beaked whales (<i>Ziphius cavirostris</i>)	479	958
Baird's beaked whales (<i>Berardius bairdii</i>)	22	44
Unidentified beaked whales	114	228
Rough-toothed dolphin (<i>Steno bredanensis</i>)	22	44
Bottlenose dolphin (<i>Tursiops truncatus</i>)	1,668	3,336
Pan-tropical spotted dolphin (<i>Stenella attenuata</i>)	22	44
Spinner dolphin (<i>Stenella longirostris</i>)	22	44
Striped dolphin (<i>Stenella coeruleoalba</i>)	2,022	4,044
Long-beaked common dolphin (<i>Delphinus capensis</i>)	5,092	10,184
Risso's dolphin (<i>Grampus griseus</i>)	3,959	7,918
Northern right whale dolphin (<i>Lissodelphis borealis</i>)	1,702	3,404
Pacific white-sided dolphin (<i>Lagenorhynchus obliquidens</i>)	1,544	3,088
Short -beaked common dolphin (<i>Delphinus delphis</i>)	43,417	86,834
Melon-headed whale (<i>Peponocephala electra</i>)	22	44
Pygmy killer whale (<i>Feresa attenuata</i>)	22	44
False killer whale (<i>Pseudorca crassidens</i>)-	22	44
Killer whale (<i>Orcinus orca</i>)	15	30
Short-finned pilot whale (<i>Globicephala macrorhynchus</i>)	57	114
Dall's porpoise (<i>Phocoenoides dalli</i>)	692	1,384
(iii) Pinnipeds:		
Northern elephant seal (<i>Mirounga angustirostris</i>)-	1,055	2,110
Pacific harbor seal (<i>Phoca vitulina</i>)	6,244	12,488
California sea lion (<i>Zalophus californianus</i>)	61,057	122,114
Northern fur seal (<i>Callorhinus ursinus</i>)	1,361	2,722
<u>Guadalupe fur seal (<i>Arctocephalus townsendi</i>)</u>	1,105 *	2,210
	1,304	2,608

* crossed out text is NMFS 2011 Letter of Authorization original take, and below are takes requested by the Navy as allocated in NMFS's 2011 Biological Opinion

Table 3. NMFS take authorization over 5-year span of the Southern California Range Complex Final Rule.

Species (Endangered Species Act species in <u>bold underlined</u>)	NMFS Authorization Over 5-year Rule	NMFS Authorization Over 5-year Rule +10%
Mysticetes		
<u>Humpback whale</u>	110	121
<u>Fin whale</u>	870	957
<u>Blue whale</u>	3,085	3,394
Minke whale	665	732
Gray whale	27,340	30,074
Odontocetes		
<u>Sperm whale</u>	775	853
Pygmy sperm whale	830	913
Dwarf sperm whale	100	110
Mesoplodon spp.	690	759
Cuvier's beaked whale	2,175	2,393
Baird's beaked whale	100	110
Unidentified beaked whales	555	611
Rough-toothed dolphin	100	110
Bottlenose dolphin	7,480	8,228
<i>Pantropical spotted dolphin</i>	100	110
<i>Spinner dolphin</i>	100	110
Striped dolphin	9,190	10,109
Long beaked common dolphin	23,145	25,460
Risso's dolphin	17,995	19,795
Northern right whale dolphin	7,935	8,729
Pacific white-sided dolphin	7,020	7,722
Short beaked common dolphin	197,350	217,085
<i>Melon-headed whale</i>	100	110
Pygmy killer whale	100	110
<i>False killer whale</i>	100	110
Killer whale	70	77
Short-finned pilot whale	260	286
Dall's porpoise	3,145	3,460
Pinnipeds		
Northern elephant seal	4,795	5,275
Pacific harbor seal	28,380	31,218
California sea lion	277,530	305,283
Northern fur seal	6,185	6,804
<u>Guadalupe fur seal</u>	5,340	5,874

6. NUMBERS AND SPECIES TAKEN

There are no further changes to Chapter 6 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*), with the exception of the 2-year period requested in this application and except as where noted below.

Post-Calculation Summary Of Potential 2011 Exposures Based on Reported System Use

The Navy's classified annual Southern California Range Complex Exercise Report contains the list of authorized systems and amount used this past year (Department of the Navy 2011b). The annual Exercise Report is a reporting requirement to NMFS under 50 Code of Federal Regulations §216.275(f).

Of the 10 sonar systems authorized, one system reported use higher than the average annual amount listed in NMFS' Final Rule (50 Code of Federal Regulations §216.270) and 2011 annual Letter of Authorization (NMFS 2009, NMFS 2011b). Another system was only just slightly over the annual amount.

In terms of marine mammal exposures, eight species out of 33 authorized species could have been potentially exposed to takes greater than 100% of NMFS species-specific annual takes in 2011 (Table 4, Table 5).

Blue whale, sperm whale, striped dolphins, Dall's porpoise and California sea lion are only slightly elevated above the annual NMFS average (<110% of annual) (Table 4, Table 5). Gray whale and killer whale are ≤120%. Pacific harbor seal is 131% of annual NMFS average. All species, however, are still less than 50% of total 5-year NMFS authorization with only two of five years remaining in the current NMFS authorization.

Table 4. List of species with potential 2011 exposures greater than annual authorization and percentage of cumulative exposure through the end of Year 3 of 5.

Species	% above annual authorization	% of 5-year authorization with only 2 years remaining
Blue whale	106%	35%
Sperm whale	101%	45%
Gray whale	111%	44%
Striped dolphin	105%	41%
Killer whale	120%	43%
Dall's porpoise	108%	42%
Pacific harbor seal	131%	46%
California sea lion	101%	40%

All other species post-calculation exposures range were ≤100% of annual authorization and between 27-43% with only two of five years remaining in the current NMFS authorization (Table 5).

Table 5. Post-Calculation Potential Exposures-By-Species Results From Year 3 Reported Systems Use In The Southern California Range Complex.

Species <small>(Endangered Species Act species in <u>bold underlined</u>)</small>	NMFS 2011 Annual Authorized 7 Feb 2011	SOCAL YEAR 3 02 Aug 2010-01 Aug 2011		Cumulative potential exposures (YEARS 1-3) Jan 2009-Aug 2011	% of exposures "used" compare to NMFS 5-year takes authorized	% of exposures "used" compare to NMFS 5-year takes +10% authorized
		2011 Potential Exposure	% of 2011 authorization			
Mysticetes						
<u>Humpback whale</u>	13	12	92%	36	33%	30%
<u>Fin whale</u>	138	117	85%	274	31%	29%
<u>Blue whale</u>	509	541	106%	1,088	35%	32%
Minke whale	146	142	97%	254	38%	35%
Gray whale	6,015	6,652	111%	11,903	44%	40%
Odontocetes						
<u>Sperm whale</u>	163	165	101%	351	45%	41%
Pygmy sperm whale	183	168	92%	291	35%	32%
Dwarf sperm whale	22	0	0%	0	0%	0%
Mesoplodon spp.	152	137	90%	239	35%	31%
Cuvier's beaked whale	479	476	99%	844	39%	35%
Baird's beaked whale	22	16	73%	27	27%	24%
Unidentified beaked whales	114	101	89%	177	32%	29%
Rough-toothed dolphin	22	0	0%	0	0%	0%
Bottlenose dolphin	1,668	1,478	89%	2,680	36%	33%
<i>Pantropical spotted dolphin</i>	22	0	0%	0	0%	0%
<i>Spinner dolphin</i>	22	0	0%	0	0%	0%
Striped dolphin	2,022	2,129	105%	3,799	41%	38%
Long beaked common dolphin	5,092	3,708	73%	6,540	28%	26%
Risso's dolphin	3,959	3,227	82%	5,778	32%	29%
Northern right whale dolphin	1,702	1,417	83%	2,548	32%	29%
Pacific white-sided dolphin	1,544	1,343	87%	2,434	35%	32%
Short beaked common dolphin	43,417	31,542	73%	56,887	29%	26%
<i>Melon-headed whale</i>	22	0	0%	0	0%	0%
Pygmy killer whale	22	0	0%	0	0%	0%
<i>False killer whale</i>	22	0	0%	0	0%	0%
Killer whale	15	18	120%	30	43%	39%
Short-finned pilot whale	57	55	96%	96	37%	34%
Dall's porpoise	692	746	108%	1,323	42%	38%
Pinnipeds						
Northern elephant seal	1,055	816	77%	1,554	32%	29%
Pacific harbor seal	6,244	8,232	132%	13,150	46%	42%
California sea lion	61,057	62,062	102%	111,677	40%	37%
Northern fur seal	1,361	1,156	85%	2,063	33%	30%
<u>Guadalupe fur seal</u>	1,304	1,303	100%	2,278	43%	39%

Conclusions

It should be noted these post-calculations are based on mathematical modeled results originally derived for the Southern California Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement (Department of the Navy 2008) and subsequent Letter of Authorization application.

Post-calculation comparisons contained in this application may not be indicative of actual species exposures based on real-world short and long-term spatial movements of various species and their relative occurrence within Southern California.

As described in Chapter 13, the Navy has an extensive monitoring program within Southern California that includes visual surveys and passive acoustic monitoring that can be used to discuss actual animal occurrence. The California Cooperative Oceanic Fisheries Investigations (CalCOFI) survey is long-term four times a year survey which the Navy has funded for the past seven years to also include marine mammal detections. Some results in particular to the species under discussion in this application are presented in Appendix A. In addition, the Navy also conducts aerial visual surveys and in this monitoring reporting period (August 2010 to August 2011) flew over 13,240 nm with an estimated 623 sightings of 68,757 individual marine mammals. Although summarized below, many species are not present to the degree that modeling would indicate. Original Navy model caveats included no movement of marine mammals, and that the entire predicted density of animals remained in specified modeling boxes to accumulate exposures.

Very common species- Harbor seal, California sea lion: California sea lion is probably one of the most common species within the near-shore and off-shore waters of Southern California. Harbor seals are common as well, but the majority of the population hauls-out and breeds at mainland California areas north of the Southern California Range Complex with a much smaller presence in the offshore southern Channel Islands within the Range Complex (Figure 1) (Carretta et al. 2011b, Department of the Navy 2011a).

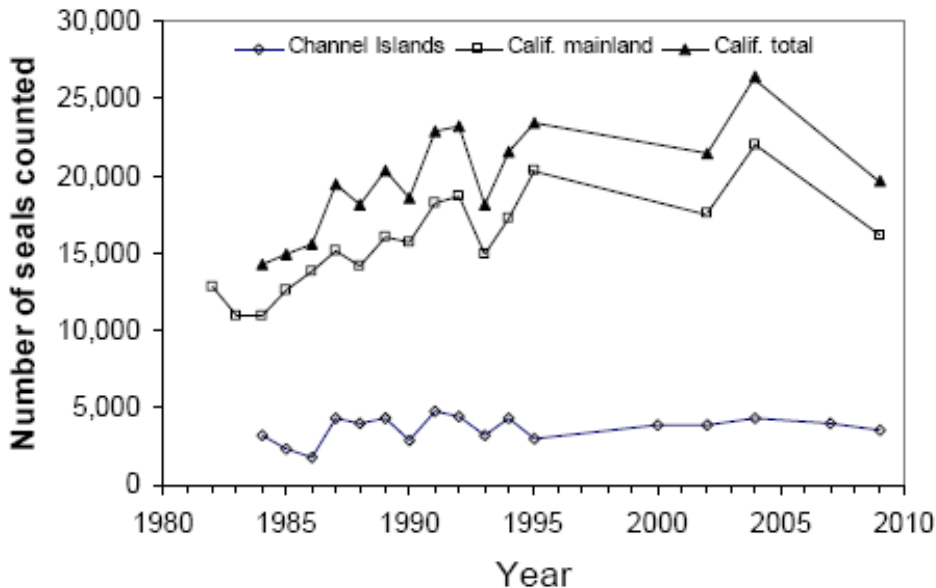


Figure 1. Harbor seal haulout counts in California during May/June (Hanan 1996; R. Read, CDFG unpubl. Data Lowry et al 2008, NMFS unpubl. data 2009 survey).

[graphic and citations from NMFS as contained in Carretta et al. 2011b]

Seasonal species- Blue whale, gray whale, Dall’s porpoise: Blue whales have their strongest occurrence within Southern California waters from the spring through fall. Gray whales are totally transitory on their annual migrations to and from Baja Mexico. Dall’s porpoise is more frequently sighted north of the Southern California Range Complex, and generally only within the Range Complex during cool water periods (Table 6, see also Appendix A). There were only two Dall’s porpoise visual sightings during this year’s winter aerial surveys (DoN 2011a).

Common but less frequent species- Sperm whale, killer whale: Sperm whales have a variable but steady presence within Southern California with limited visual sightings (Table 6) and slightly more frequent passive acoustic detections (Appendix A). Killer whales while occasionally present are also very variable in occurrence, and not present in densities similar to other toothed whales (Table 6, Appendix A).

Less common, frequent species- Striped dolphin: Striped dolphin sightings are not as common as other dolphin species along the shelf of Southern California where the majority of Navy training occurs and more frequently seen much further offshore (Hamilton et al 2009). There were no striped dolphin visual detections in the CALCOFI surveys (Table 6) or in any other Navy funded survey this past year (DoN 2011a).

Finally, this year was a higher than normal year for major training events (n=11) within the Southern California Range Complex as reported in the Range Complex Exercise Report and Monitoring Report to NMFS. The Navy believes the post-calculation exposures from Table 5 when used in support of this 2-year application renewal show continued trend to track below final 5-year authorizations from NMFS (Table 3).

Furthermore, given the relatively low percentage of total takes across the 5-year Final Rule to date ($\leq 46\%$ through Year 3 of 5)(Table 5), the number of major training events next year (2012) expected to be much lower than 2011, the variable occurrence of the eight marine species within the Range Complex discussed above (Table 6), then the Navy asserts that final post-calculation takes by species will be less than NMFS’s total 5-year take authorization at the end of the last year of authorization in January of 2014.

Table 6. Marine Mammal Visual Sighting Data From Four CALCOFI Cruises Between July 2010 and April 2011.

[Data from Navy research funded OPNAV N45 project; Data courtesy of J. Hildebrand and Greg Campbell, Scripps Institute of Oceanography]

Species	CALCOFI 1008		CALCOFI 1011		CALCOFI 1101		CALCOFI 1104	
	30Jul-18Aug 2010		28Oct-15Nov 2010		12Jan-6Feb 2011		8Apr-26Apr 2011	
	# sightings	# individuals	# sightings	# individuals	# sightings	# individuals	# sightings	# individuals
Blue whale	10	17	0	0	1	2	3	5
Sperm whale	0	0	0	0	2	36	2	17
Gray whale	0	0	0	0	19	42	0	0
Striped dolphin	0	0	0	0	0	0	0	0
Killer whale	0	0	0	0	1	1	0	0
Dall’s porpoise	0	0	0	0	15	129	2	23

7. IMPACTS TO MARINE MAMMAL SPECIES OR STOCKS

There are no further changes to Chapter 7 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*) with the exception of the 2-year period requested in this application.

8. IMPACT ON SUBSISTENCE USE

There are no further changes to Chapter 8 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*) with the exception of the 2-year period requested in this application.

9. IMPACTS TO THE MARINE MAMMAL HABITAT AND THE LIKELIHOOD OF RESTORATION

There are no further changes to Chapter 9 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*) with the exception of the 2-year period requested in this application.

10. IMPACTS TO MARINE MAMMALS FROM LOSS OR MODIFICATION OF HABITAT

There are no further changes to Chapter 10 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*) with the exception of the 2-year period requested in this application.

11. MEANS OF EFFECTING THE LEAST PRACTICABLE ADVERSE IMPACTS – MITIGATION MEASURES

There are no further changes to Chapter 11 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*) with the exception of the 2-year period requested in this application.

12. SUBSISTENCE EFFECTS AND PLAN OF COOPERATION

There are no further changes to Chapter 12 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*) with the exception of the 2-year period requested in this application.

13. MONITORING AND REPORTING MEASURES

There are no further changes to Chapter 13 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*), with the exception of the 2-year period requested in this application and except as where noted below.

U.S. Navy-funded Southern California Range Complex Year 3 Marine Mammal Monitoring Accomplishments From 02 August 2011 to 01 August 2011

The U.S. Navy completed Year 3 of a 5-year monitoring program in the Southern California Range Complex from 02 August 2010 to 01 August 2011. The U.S. Navy's 2011 Hawaii Range Complex-Southern California Range Complex Monitoring Report lists monitoring accomplishments of Year 3 monitoring (02 August 2010 to 01 August 2011) as well as lists the proposed monitoring objectives for Year 4 monitoring in 2012 (Department of the Navy 2011a). In terms of this 2012 Letter of Authorization renewal request, all of the Year 3 monitoring objectives were met, exceeded, or supplemented.

The U.S. Navy's monitoring report to NMFS for 2011 was submitted to NMFS by 01 October 2011. Final interpretation of the U.S. Navy's monitoring efforts and the ability to address the NMFS-U.S. Navy research questions presented in the Monitoring Report is still preliminary. This section highlights monitoring accomplishments for Year 3. As discussed in the U.S. Navy's Monitoring Report, there are two U.S. Navy organizations funding marine mammal monitoring within the Southern California Range Complex. One effort ongoing since 1998 is sponsored by the Energy and Environmental Readiness Division of the Chief of Naval Operations (OPNAV N45). The other effort begun in 2009 with compliance monitoring under the Southern California Range Complex Letter of Authorization and is funded by U.S Pacific Fleet. Detailed results and major milestones from the U.S. Navy's Compliance Monitoring (U.S. Pacific Fleet), and Research and Development monitoring (OPNAV N45) are presented in the U.S. Navy's Hawaii Range Complex-Southern California Monitoring Report for 2011 (Department of the Navy 2011a). A third U.S. Navy command, the Office of Naval Research, also periodically funds new marine mammal technology demonstrations in the Southern California Range Complex, including in January 2011, a field test of several unmanned underwater gliders and associated passive acoustic detection systems for marine mammal vocalizations.

A brief summary of the U.S. Navy's overall monitoring accomplishments in the Southern California Range Complex is presented in the text below and a small sub-set of data in Appendix A, although the majority of summary is contained in the Year 3 Hawaii Range Complex-Southern California Range Complex Monitoring Report (Department of the Navy 2011a).

These results highlight the U.S. Navy's overall contribution to marine mammal science, and present the obtainment of agreed upon compliance metrics for Year 3 monitoring in the Southern California Range Complex. When combined with other U.S. Navy funded marine mammal research efforts in the Southern California Range Complex, key accomplishments and statistics from Aug 2010 to Aug 2011 include:

- > 1,000 hours of visual survey completed covering >21,000 nautical miles
- > 1,230 marine mammal sightings for estimated >102,500 individuals
- > 20,000 hours of passive acoustic data collected and under analysis
- > 80 hours of Marine Mammal Observer (MMO) accomplished
- > 21,200 digital photographs taken; 18 hours digital video taken
- 43 biopsies taken and 14 satellite tracking tags attached

Proposed YEAR 4 and YEAR 5 Monitoring From 2012 to 2014

For 2012 through 2014, the U.S. Navy proposes to keep the same level of monitoring effort in the Southern California Range Complex as was committed and accomplished in 2011.

Table 7 highlights these monitoring goals.

In support of the Joint Subcommittee on Ocean Science and Technology recommendations, Southern California workshop recommendations, and Ocean Policy direction (Southall et al. 2009, OSTP 2009, CEQ 2010, EO 2010, Foley et al. 2010), the U.S. Navy is committed to structuring the Southern California Range Complex monitoring to address both NMFS regulatory required monitoring under the Southern California Range Complex Letter of Authorization while at the same time making significant contributions to the greater body of marine mammal science. This past year, U.S. Navy assembled a Scientific Advisory Group comprised on leading marine mammal scientists as well as convened monitoring meetings with NMFS, researchers, and non-governmental organizations in October 2010 and June 2011 with the interest of soliciting input on future range complex monitoring objectives and methods.

Recommendations generated during those meetings are currently under review by the U.S. Navy and NMFS and will be used to revise and improve the U.S. Navy's monitoring program from 2012 to 2014. Those recommendations will not be available for incorporation into this Letter of Authorization renewal request therefore changes will be made under separate submission.

Table 7. U.S. Navy’s proposed Year 4 monitoring plan goals for the Southern California Range Complex.

Monitoring Technique	Implementation	
Visual Surveys	Portions of major training events, or unit level training events using sonar; or offshore or inshore detonation events (100-150 combined hours annually; 200-300 combined hours over 2-years)	Adaptive Management Review for 2013
Marine Mammal Observers	Opportunistic; major training events, unit level training events, or offshore or inshore detonation events as available (50-100 total hours annually; 100-200 total hours over 2-years)	
Passive Acoustics Monitoring	Continue data collection and analysis from passive acoustic recording device(s)	
Southern California Range Complex Summary From Navy Exercises	Continue to collect/analyze marine mammal sightings from Navy lookouts during major training events and present results (data from Southern California Range Complex Exercise Report)	
Other Navy Funded Research Marine Mammal Tagging Visual surveys, M3R, PhotoID	Present results from ongoing, other Navy funded (OPNAV N45) marine mammal research in Southern California	
<p>TOTAL U.S. Navy 2012 Goal:</p> <ul style="list-style-type: none"> • Conduct additional analysis of field data collected from Years 1-4 • 100 to 150 hours visual survey field efforts • 50-100 hours Marine Mammal Observers • PAM: continue data collection/analysis from passive acoustic recording devices • Present results as available from other U.S. Navy funded research projects such as visual surveys, passive acoustic monitoring, tagging, and photoid 		

14. RESEARCH

There are no further changes to Chapter 13 from the U.S. Navy's 2011 Renewal Application of 30 Aug 2010 (Department of the Navy 2010), and subsequent NMFS revised Letter of Authorization of 7 Feb 2011 (NMFS 2011b; *see also Table 1*) with the exception of the 2-year period requested in this application.

A summary of U.S. Navy funded research accomplishments specific to the Southern California Range Complex is provided in significantly more detail in the U.S. Navy's Hawaii Range Complex-Southern California Monitoring Report for 2011 (Department of the Navy 2011a).

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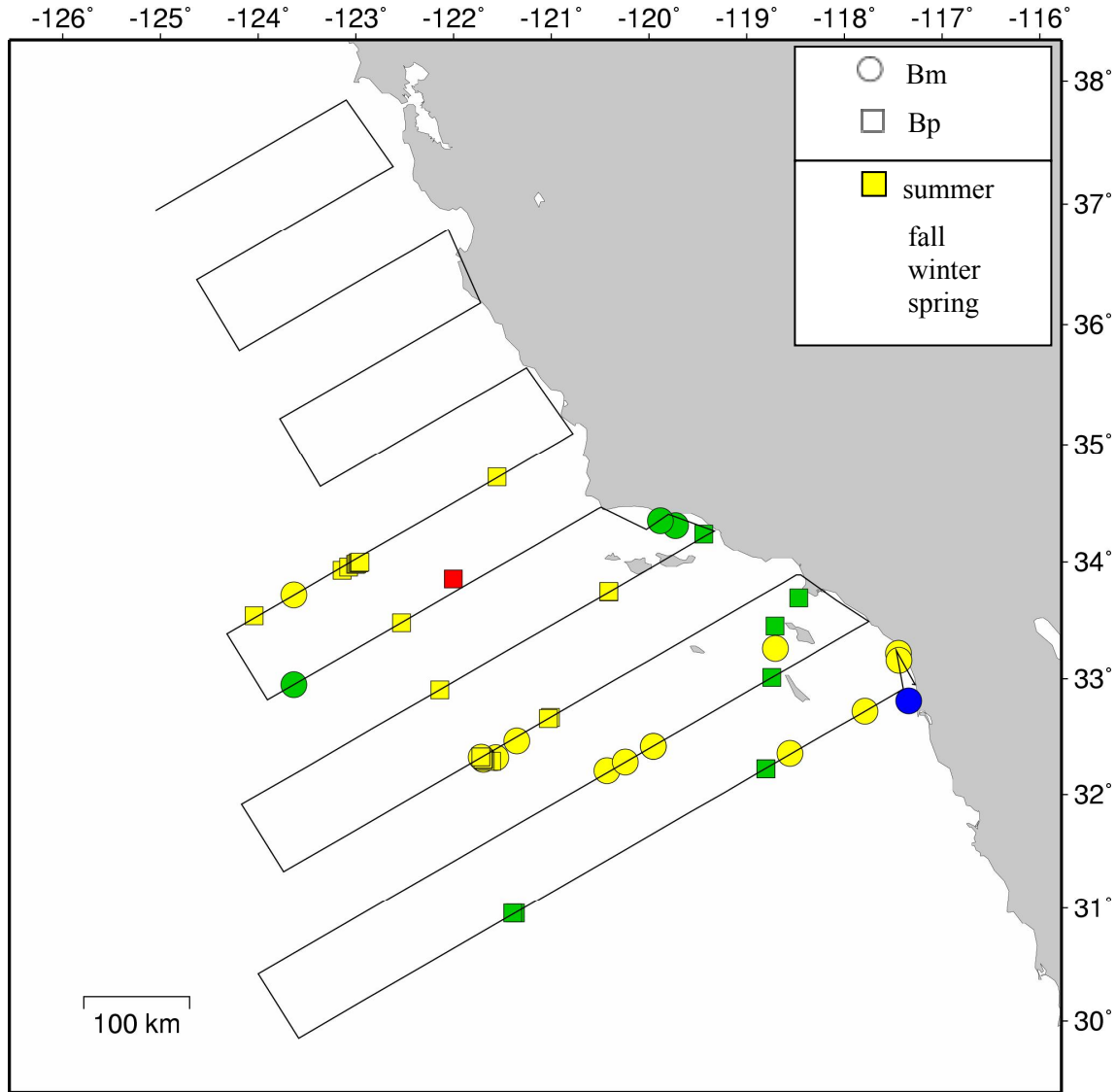
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APPENDIX A. 2010-2011 NAVY-FUNDED MONITORING RESULTS

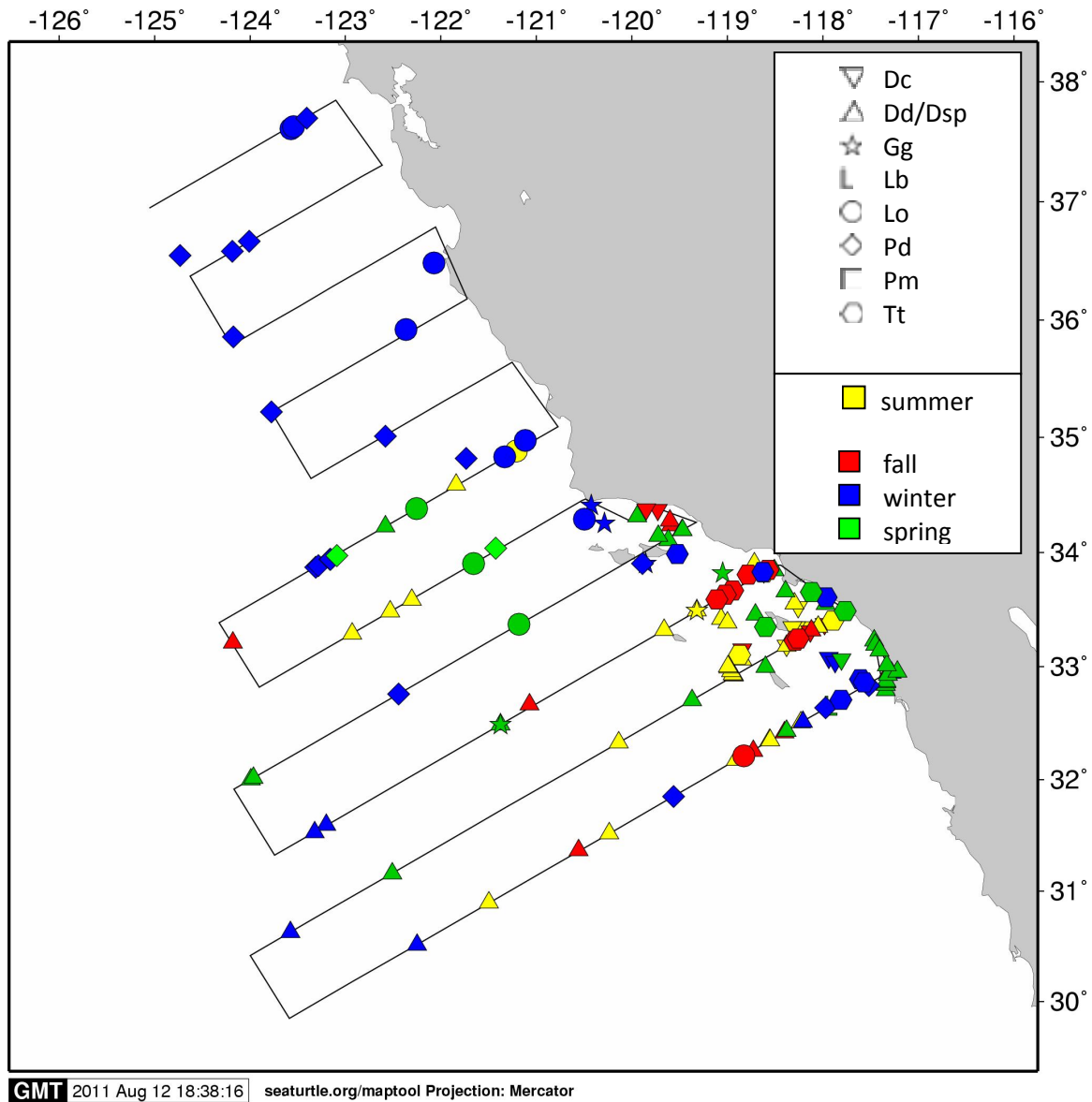
[Below summary from Navy funded (OPNAV N45) CALCOFI visual surveys (n=4), and U.S. Pacific Fleet funded passive acoustic monitoring device located southwest of San Clemente Island; Data, graphics, and ALL text courtesy of Grey Campbell, Scripps's Institute of Oceanography]

CALCOFI Visual Survey Results



GMT 2011 Aug 29 13:19:42 seaturtle.org/maptool Projection: Mercator

Visual sightings of blue and fin whales by season from four CALCOFI cruises between August 2010 and April 2011. Contributed by Greg Campbell – SIO (Bm= blue whale; Bp= fin whale)



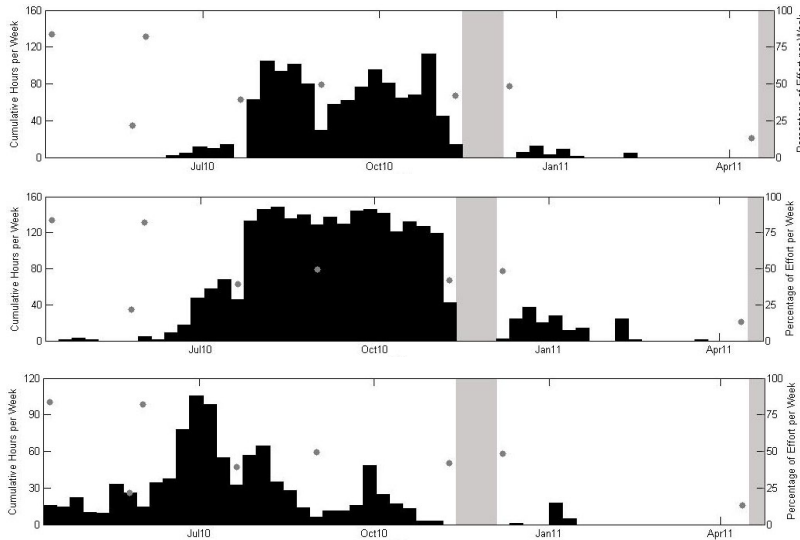
Visual sightings of eight odontocete species by season from four CalCOFI cruises between August 2010 and April 2011. Contributed by Greg Campbell – SIO.

(Dc= long-beaked common dolphin; Dd/Dsp= short-beaked common dolphin/unidentified common dolphin; Gg= Risso's dolphin; Lb=northern right whale dolphin; Lo= Pacific white-sided dolphin; Pd= Dall's porpoise; Pm=sperm whale, Tt=bottlenose dolphin)

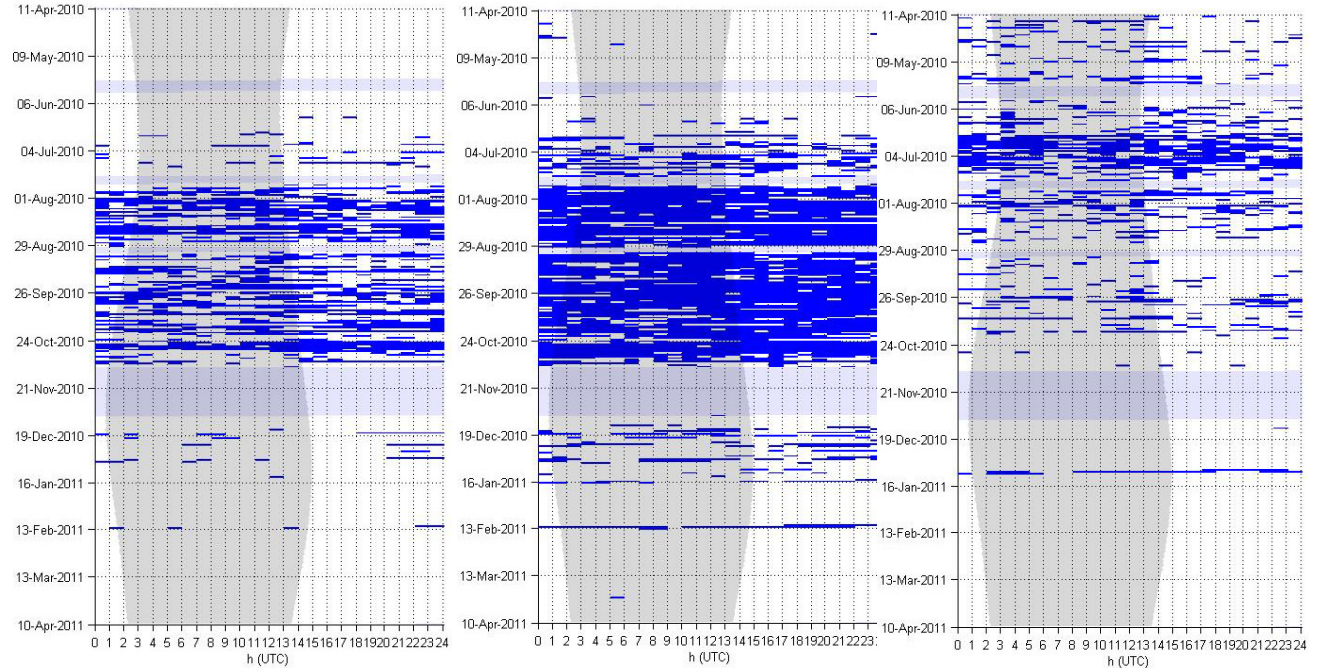
Passive Acoustic Monitoring Results

Blue whale

Blue whales were frequently detected between April 2010 and January 2011. Blue whale calls also were detected between February and April 2011, but during this period they were much less common. Peak in calling occurred between August and December 2010, which is the period with peak detection of blue whale A and B calls. Similarity in call occurrence between A and B calls is not surprising as they are often produced in a song sequence. Peaks in D call detections, in contrast to A and B calls, occurred in July and October 2010. This seasonal difference in the occurrence of A and B versus D calls is consistent with previous passive acoustic studies of blue whales in the Southern California Bight and likely reflects the transition in blue whale behavior from feeding during the summer, to courting or other mating behavior in the fall.



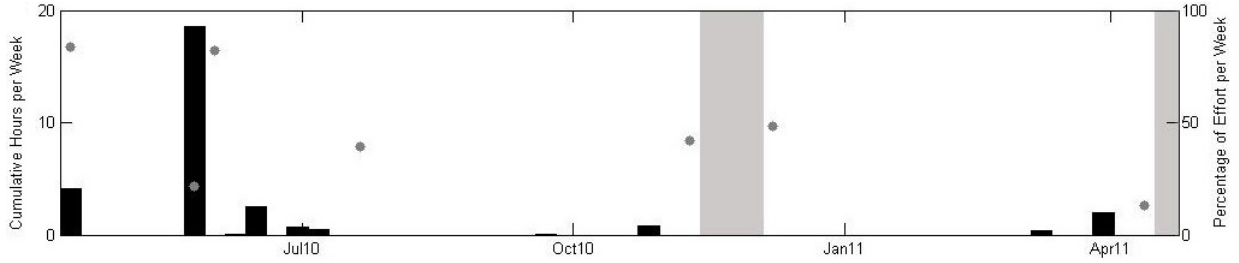
Weekly blue whale A call presence (black bars) (TOP), B call (MIDDLE), and D call (BOTTOM) between April 2010 and April 2011. Grey dots represent percent of effort per week in weeks with less than 100% recording effort and grey shading marks periods with no recording effort. Where grey dots or shading are absent, full recording effort occurred for the entire week.



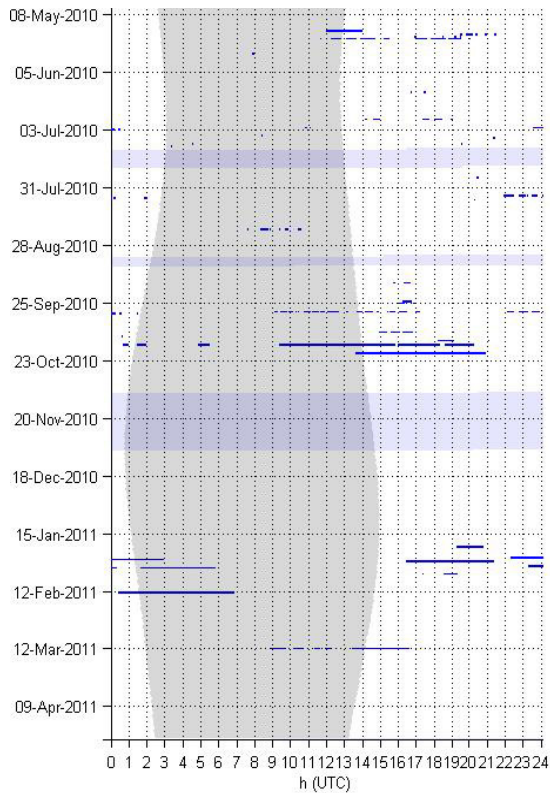
Blue whale – Blue whale calls in hourly bins: Type A calls (LEFT), Type B calls (MIDDLE), Type D calls (RIGHT).

Sperm whale

Sperm whale echolocation clicks were detected throughout the year without apparent seasonal pattern. There may be a preference for daytime acoustic activity.



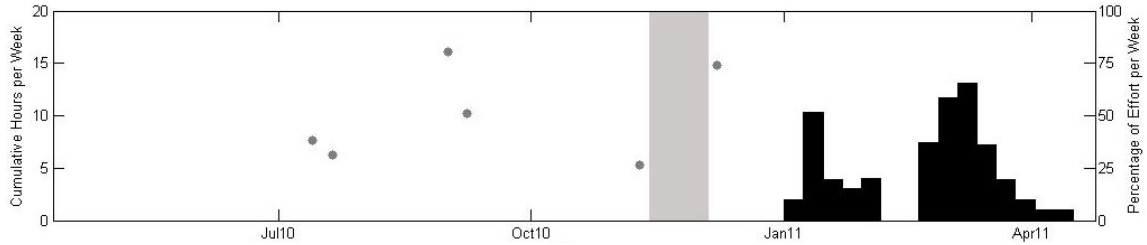
Weekly sperm whale echolocation click presence between April 2010 and April 2011.



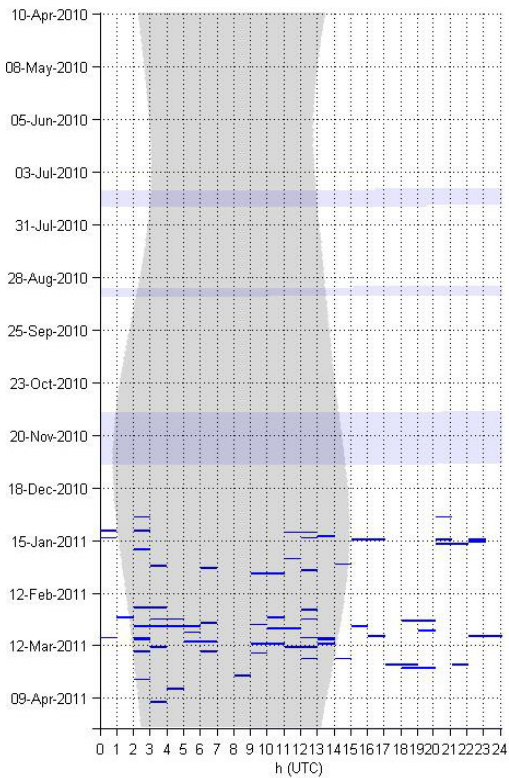
Sperm Whale – Echolocation Clicks in one-minute bins.

Gray whale

Of the two gray whale call types found in the data (M1 and M3) M3 was the more common, which is consistent with previous studies of gray whale sounds off California. The two peaks in the data probably represent the southbound migration in January/February and northbound migration in March/April.



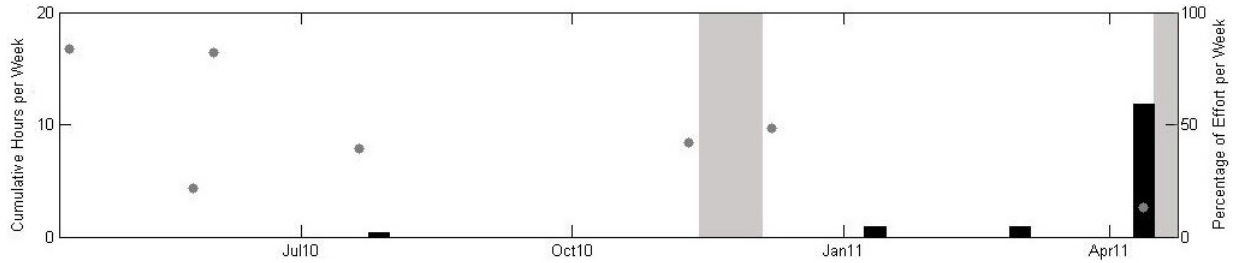
Weekly gray whale call presence between April 2010 and April 2011.



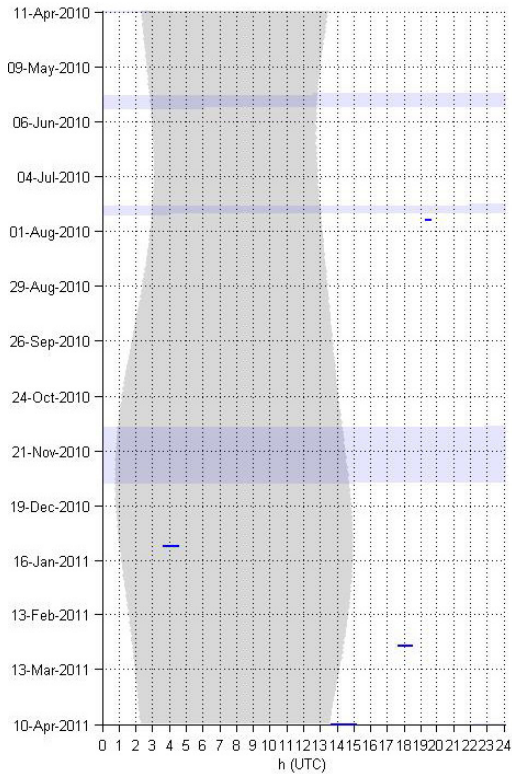
Gray whale – All call types in hourly bins.

Killer whale

Killer whale detections were overall very few and with no apparent pattern. The large number of detections in April 2011 was likely artificial due to partial recording effort in that week and normalization to a full week of effort.



Weekly killer whale presence between April 2010 and April 2011.



Killer Whale – Clicks, Pulses, Ultrasonic Whistles in one-minute bins.



Photo: U.S. Navy ships and helicopter part of a Major Training Exercise in the offshore waters of the Southern California Range Complex, May 2011.

