

Appendix A

Description of Active Permits

The following tables lists the number of takes in each research activity that were authorized in the Status Quo permits (some of which were vacated by court order after this Programmatic Environmental Impact Statement [PEIS] was initiated). The totals for each research activity were used to calculate the risk of injury and mortality under Alternative 3 for the different stocks of Steller sea lions (SSLs) and northern fur seals (NFSs) in Sections 4.8.1 and 4.8.2, respectively. The numbers of takes in each research activity under Alternative 2 and Alternative 4 were derived from these Status Quo numbers as described in Sections 4.8.1 and 4.8.2. Note that the numbers of takes used to calculate the risk assessments in the Draft PEIS are different from those used in the Final PEIS. The original tabulation of takes for the Draft PEIS included some inconsistencies and errors that were corrected for the Final DEIS according to the following method.

The research activity categories used in the PEIS are not necessarily the same categories used by researchers requesting takes. The takes listed in the permits have been assigned to the most appropriate category in the risk assessment tables. If the permit contained a combined take category (i.e., incidental take from all activities), the takes may have been divided among different research activity categories based on the description of the proposed research. If there was ambiguity in where takes should be tallied, they were allocated to the category with the highest overall risk values in order to provide a more precautionary estimate of risk. Some permits contained several separate research programs and listed take numbers for these programs separately. So some permits have more than one entry for disturbance categories (i.e., aerial surveys).

For capture and handling procedures, the number of animals authorized for capture and a given set of procedures (a sampling protocol) were multiplied by the appropriate number of procedures in different risk categories. For example, if a sampling protocol specified that 10 animals would be captured, weighed, measured, and processed for a blood sample, enema, flipper tag, and blubber biopsy, the table for that permit would include 30 “relatively low risk” procedures (blood, enema, tag) and 10 “relatively medium risk” procedures (biopsy). The morphometric measurements are considered to be “no risk” and are not tallied. Most permits that included capture and handling had several subsets of animals that were subject to different sampling protocols.

In some cases, permits specified that some animals would be recaptured one or more times throughout the year and would undergo a given set of procedures. Because of animal dispersal, logistical difficulties in recapturing animals, and limited funding for capture efforts, it is unlikely that every animal in a subset would be recaptured as often as specified in the permit each year. However, the risk assessments in Sections 4.8.1 and 4.8.2 are based on the authorized levels of takes so the appropriate number of handling procedures was multiplied by the number of captures and recaptures listed in the permits (some procedures such as branding and tooth pulls are only performed once over the life of that animal). This accounting method therefore overestimates the number of animals actually affected and the number of procedures they are subject to, yielding a conservative estimate of the risk involved in the authorized levels of takes in the permits.

**Table A-1 Take By Permit Number and Research Activity
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Steller sea lion: western stock								Total takes for all permits, each activity type
Activity	Age class	Kate Wynne #1010-1641-03	Wynne #1049-1718-00	Matkin #545-1761-00	Gelatt #782-1768-00	Davis #800-1664-00	Calkins #881-1668-05	Total for Rows
Incidental disturbance during survey activities (including work on other species)								
Aerial survey	pups				10,000			10,000
	non-pups				29,000			98,250
	All (non-breeding season)				25,000			
					25,000			
Vessel surveys	All (non-breeding season) High years	19,250						
	pups							
	non-pups							
On land	All	1,600	100	500				2,200
	pups							
	non-pups							
Incidental disturbance during researcher presence among animals								
On rookeries during breeding season (June and July) (ground counts, scats, captures)	pups				6,000			6,000
Roundups for branding					400			400
Roundups for measure/sampling								
	non-pups				18,000			18,000
Roundups for branding ²								
Roundups for measure/sampling								
Haulouts, rookeries non-breeding (scats, resights, captures)	pups							
	non-pups							
	All	1,600			20,000	400	15,000	37,000

**Table A-1 Take By Permit Number and Research Activity
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Steller sea lion: western stock								Total takes for all permits, each activity type
Activity	Age class	Kate Wynne #1010-1641-03	Wynne #1049-1718-00	Matkin #545-1761-00	Gelatt #782-1768-00	Davis #800-1664-00	Calkins #881-1668-05	Total for Rows
Capture and restraint procedures								
Capture/Physical restraint	pups				700			700
	non-pups				0			0
Capture/chemical anesthesia '(inhalable agent-isoflurane)	pups				400		160	560
	non-pups				120	90	340	1,060
							330	
							180	
Capture/chemical anesthesia (injectable)	non-pups							
Capture/chemical sedation (injectable-eg valium)	non-pups				60	45		105
Lethal take or permanent removal	pups							
	non-pups							
Handling in the wild								
Permanent mark/hot branding	pups				400			400
	non-pups				180			180
"Low risk" procedures	pups				450		280	3,860
					450		280	
					1,100		100	
					700		100	
							200	
							200	
	non-pups				240	135	340	6,433
					120	45	254	
					240	135	140	
					120		340	
					110		254	
					110		140	
					110		260	
					110		174	
				110		100		
				110		260		

**Table A-1 Take By Permit Number and Research Activity
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Steller sea lion: western stock								Total takes for all permits, each activity type
Activity	Age class	Kate Wynne #1010-1641-03	Wynne #1049-1718-00	Matkin #545-1761-00	Gelatt #782-1768-00	Davis #800-1664-00	Calkins #881-1668-05	Total for Rows
"Low risk" procedures (continued)							174	
							100	
							120	
							120	
							120	
							40	
							40	
							40	
							340	
							254	
							140	
							340	
							254	
							140	
							40	
"Med risk" procedures	pups					135	280	695
							280	
	non-pups				90		340	1,918
					240		254	
					120		140	
							340	
							254	
"High risk" procedures	pups						140	
	non-pups							

**Table A-1 Take By Permit Number and Research Activity
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Steller sea lion: western stock								Total takes for all permits, each activity type
Activity	Age class	Kate Wynne #1010-1641-03	Wynne #1049-1718-00	Matkin #545-1761-00	Gelatt #782-1768-00	Davis #800-1664-00	Calkins #881-1668-05	Total for Rows
Temporary Captivity								
Capture/Transport/holding/release	pups							
	non-pups						16	16
chemical sedation (injectable-eg valium)	non-pups						208	208
Perm mark/hot branding	non-pups						16	16
"Low risk" procedures	pups							
	non-pups						208	1,104
							384	
							416	
							64	
"Med risk" procedures							32	
	pups							
	non-pups						32	84
							20	
							4	
"High risk" procedures							24	
							4	
	pups							
	non-pups						16	16
<p>¹Mortality rates associated with alert, enter water, and injured reactions account for unobserved or subsequent mortalities attributable to the activity. Observed mortality rates are derived from permit and trip reports, others are professional judgement. ²Number exposed are based on numbers of pups handled or branded, and are a subset of the number exposed for the activity. Low risk: blood/flipper tag/whisker pull/isotopes/eb/bia/injections/ultrasound/external instruments/enemas/stomach intubate/fecal Medium risk: teeth pull/biopsies/remote biopsies/(includes local anesthesia) Elevated risk: implant transmitters, surgeries</p>								

**Table A-2 Take By Permit Number and Research Activity
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Steller sea lion: eastern stock											
Number of animals listed as takes under permit for each activity and age/class											
Name of permit holder and permit #											
Activity	Age class	Rea #358-1769-00	Brown #434-1669-03	Straley #473-1700-00	Calam-bokidis #540-1502-00	Calam-bokidis #540-1811	Trites #715-1784-00	Reilly #774-1714-00	Bengtson #782-1702-03	Gelatt #782-1768-00	Total for rows
Incidental disturbance during survey activities (including work on other species)											
Aerial survey	pups						15,000			6,000	21,000
	non-pups	15,000					45,000			18,000	225,000
										4,500	
	All (non-breeding season)				500	500	45,000	30,000	0	10,000	
							1,500			55,000	
Vessel surveys	pups										
	non-pups										4,600
	All (non-breeding season)			100					0	4,500	
On land	pups										
	non-pups										1,500
	All (non-breeding season)							1,500	0		
Incidental disturbance during researcher presence among animals											
On rookeries during breeding season (June and July)	pups	10,000	2,000								12,000
	(ground counts, scats, captures)										
Roundups for branding		600	200								800
Roundups for measure/sampling											
	non-pups	15,000	5,000								20,000
Roundups for branding ²		864	30								894
Roundups for measure/sampling											
Haulouts, rookeries non-breeding (scats, resights, captures)	pups										36,750
	non-pups										
	All	15,000	10,000				7,250		0	4,500	

**Table A-2 Take By Permit Number and Research Activity
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Steller sea lion: eastern stock											
Number of animals listed as takes under permit for each activity and age/class											
Name of permit holder and permit #											
Activity	Age class	Rea #358-1769-00	Brown #434-1669-03	Straley #473-1700-00	Calam-bokidis #540-1502-00	Calam-bokidis #540-1811	Trites #715-1784-00	Reilly #774-1714-00	Bengtson #782-1702-03	Gelatt #782-1768-00	Total for rows
Capture and restraint procedures											
Capture/Physical restraint	pups										0
	non-pups								0		
Capture/chemical anesthesia '(inhalable agent- isoflurane)	pups	700	200								900
	non-pups	1,200	30								1,230
Capture/chemical anesthesia (injectable)	non-pups	60							0		60
Capture/chemical sedation (injectable-eg valium)	non-pups									12	12
Lethal take or permanent removal	pups										
	non-pups										
Handling in the wild	All values are the number of procedures done regardless of whether one animals has 1 procedure or multiple procedures										
Permanent mark/hot branding	pups	600	200								800
	non-pups	330	30						0	12	906
		260									
		174									
"Low risk" procedures	pups	1,400	50								4,180
		700	200								
		20	200								
		700	80								
		130									
		700									
	non-pups	1,260	30							24	9,490
		1,230	30							24	
		720	30							12	
		300	30								
	290										
	330										
	1,200										

**Table A-2 Take By Permit Number and Research Activity
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Steller sea lion: eastern stock											
Number of animals listed as takes under permit for each activity and age/class											
Name of permit holder and permit #											
Activity	Age class	Rea #358-1769-00	Brown #434-1669-03	Straley #473-1700-00	Calam-bokidis #540-1502-00	Calam-bokidis #540-1811	Trites #715-1784-00	Reilly #774-1714-00	Bengtson #782-1702-03	Gelatt #782-1768-00	Total for rows
"Low risk" procedures		1,200									
		1,260									
		860									
		660									
"Med risk" procedures	pups	20									20
	non-pups	480								12	2,052
		1,230									
		330									
"High risk" procedures	pups										
	non-pups										
Temporary Captivity											
Transport/holding/release	pups										
	non-pups										
Perm mark/hot branding	non-pups										
"Low risk" procedures	pups										
	non-pups										
"Med risk" procedures	pups										
	non-pups										
"High risk" procedures	pups										
	non-pups										
<p>¹Mortality rates associated with alert, enter water, and injured reactions account for unobserved or subsequent mortalities attributable to Observed mortality rates are derived from permit and trip reports, others are professional judgement.</p> <p>²Number exposed are based on numbers of pups handled or branded, and are a subset of the number exposed for the activity</p> <p>Low risk: blood/flipper tag/whisker pull/isotopes/eb/bia/injections/ultrasound/external instruments/enemas/stomach intubate/fecal loop/stomach pill telemeters</p> <p>Medium risk: teeth pull/biopsies/remote biopsies/(includes local anesthesia)</p> <p>Elevated risk: implant transmitters, surgeries</p>											

**Table A-3 Take By Permit Number and Research Activity
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Northern fur seal-Eastern Pacific Stock

Table 1 - Estimated mortality due to researcher presence in view of animals

Activity	Age class	Williams #1066-1750-00	Lindsay #1050-1727-00	Holser #1068-1755-01	Insley #1045-1713-00	Calam-bokidis #540-1502-00	Calam-bokidis #540-1811	Reilly #774-1714-00	Bengtson #782-1708-02	Gelatt #782-1768-00	Total for rows
Aerial survey	pups										
	non-pups										30,500
	All non-breeding season					2,000	2,000	5,500		10,000	
On land catwalks, tripods, cliffs	pups								6,500		6,500
	non-pups	2,200							17,750		38,450
	All		2,000	Unlimited				5,500			
Subtotal mortality for incidental effects of researcher presence in view of animals:											
¹ Mortality rates associated with alert, enter water, and injured reactions account for unobserved or subsequent mortalities attributable to the activity.											

Table 2 - Estimated mortality due to researcher presence among animals

Activity	Age class										
Activities involving pup roundups	pups	410							6,600		7,010
	non-pups								3,465		3,465
Activities involving clearing rookery/haulout	pups								215,775		217,275
									1,500		
	non-pups								97,475		103,975
	all								1,500		
										5,000	

**Table A-3 Take By Permit Number and Research Activity
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Table 2 - Estimated mortality due to researcher presence among animals (cont.)										
Activity	Age class									
Incidental disturbance during captures in breeding season	pups	400			50				7,200	8,420
								770		
	non-pups	13,400			125			6,000	20,165	
	All							640		
Incidental disturbance during captures outside of breeding season	pups							3,150	11,890	
								8,400		
								340		
	non-pups							2,625	9,905	
	All							7,000		
								280		
Subtotal mortality for incidental effects of researcher presence among animals:										
notes for text: SM prior to 1 August; EP prior to 08 August										

Table 3 - Estimated mortality due to capture and restraint activities										
Activity	Age class									
Capture/physical restraint	pups	10			5			22,120	25,535	
								3,000		
								300		
								100		
	non-pups	165			25					190
Capture/chemical anesthesia (inhalable agent-isoflurane)	non-pups									0
Capture/chemical anesthesia (injectable)	non-pups									
Capture/chemical sedation (injectable-eg valium)	non-pups							140	660	
								400		
								120		
Lethal take or permanent removal	pups									
	non-pups									
Subtotal mortality for capture/restraint effects:										

**Table A-3 Take By Permit Number and Research Activity
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Table 4 - Estimated mortality due to handling and sampling procedures									
Activity	Age class								
Permanent mark/hot-cold branding	pups								
	non-pups								
"Low risk" procedures	pups	20						300	3,620
								2,100	
								1,200	
	non-pups	330			20			210	2,620
								1,400	
							660		
"Med risk" procedures	pups								
	non-pups							70	70
"Elevated risk" procedures	pups								
	non-pups								
Subtotal mortality estimated increased risk of handling effects:									

Table 5 - Estimated mortality due to temporary captivity for experimentation									
Activity	Age class								
Transport/holding/release	pups								
	non-pups								
Permanent mark/hot branding	pups								
	non-pups								
Relatively low risk procedures	pups								
	non-pups								
Relatively medium risk procedures	pups								
	non-pups								
Relatively high risk procedures	pups								
	non-pups								
Total mortality									

Low risk: blood/flipper tag/whisker pull/isotopes/eb/bia/injections/ultrasound/external instruments/enemas/stomach intubate/fecal loop/stomach pill telen
 Medium risk: teeth pull/biopsies/remote biopsies/(includes local anesthesia)
 Elevated risk: implant transmitters, surgeries
 For text: No risk: swabs/hair or nail clipping, temp marks, morph measurements, milk sample, external physical exarr

**Table A-4 Take By Permit Number and Research Activity
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Northern fur seal-San Miguel Stock					
Table 1 - Estimated mortality due to researcher presence in view of animals					
Activity	Age class	Stewart #486-1790-00	Bengtson #782-1708-02	Moore #782-1613-03	Total in rows
Aerial survey	pups				
	non-pups				350
	all	350			
On land catwalks, tripods, cliffs	pups		700		1,300
			600		
	non-pups		300		2,450
				1,800	
	all	350			
Subtotal mortality for incidental effects of researcher presence in view of animals:					
¹ Mortality rates associated with alert, enter water, and injured reactions account for unobserved or subsequent mortalities attributable to the activity.					

Table 2 - Estimated mortality due to researcher presence among animals					
Activity	Age class				
Activities involving pup roundups	pups		3,000		3,000
	non-pups		1,575		1,575
Activities involving clearing rookery/haulout	pups				
	non-pups				500
	all			500	
Incidental disturbance during captures in breeding season	pups	0	1,630		1,630
	non-pups		1,360		2,260
	all			900	
Incidental disturbance during captures outside of breeding season	pups		710		710
	non-pups		595		595
Subtotal mortality for incidental effects of researcher presence among animals:					
notes for text: SM prior to 1 August; EP prior to 08 August					

**Table A-4 Take By Permit Number and Research Activity
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Table 3 - Estimated mortality due to capture and restraint activities				
Activity	Age class			
Capture/physical restraint	pups	100	300	1,900
			1,500	
	non-pups	100		100
Capture/chemical anesthesia (inhalable agent-isoflurane)	non-pups			
Capture/chemical anesthesia (injectable)	non-pups	125		125
Capture/chemical sedation (injectable-eg valium)	non-pups		40	40
Lethal take or permanent removal	pups			
	non-pups			
Subtotal mortality for capture/restraint effects:				
Table 4 - Estimated mortality due to handling and sampling procedures				
Activity	Age class			
Permanent mark/hot-cold branding	pups			
	non-pups			
"Low risk" procedures	pups	300	1,200	4,525
			3,000	
			25	
	non-pups	400	220	1,795
		100		
		400		
		300		
		75		
		300		
"Med risk" procedures	pups	100		100
	non-pups	100		450
		25		
		100		
		100		
		25		
"Elevated risk" procedures	pups			
	non-pups			
Subtotal mortality estimated increased risk of handling effects:				

**Table A-4 Take By Permit Number and Research Activity
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Table 5 - Estimated mortality due to temporary captivity for experimentation					
Activity	Age class				
Transport/holding/release	pups				
	non-pups				
Permanent mark/hot branding	non-pups				
Relatively low risk procedures	pups				
	non-pups				
Relatively medium risk procedures	pups				
	non-pups				
Relatively high risk procedures	pups				
	non-pups				
Total mortality					
Low risk: blood/flipper tag/whisker pull/isotopes/eb/bia/injections/ultrasound/external instruments/enemas/stomach intubate/fecal loop/stomach pill telemeters Medium risk: teeth pull/biopsies/remote biopsies/(includes local anesthesia) Elevated risk: implant transmitters, surgeries For text: No risk: swabs/hair or nail clipping, temp marks, morph measurements, milk sample, external physical exam					

The summaries provided herein are abstracts from current National Marine Fisheries Service (NMFS) permits that are valid from January 1, 2006 through December 31, 2011. For more detailed information, please refer to the complete permit document or application on file with NMFS.

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
1008-1637-02	expires 10/31/2011	University of Southern Maine	John Wise, Ph.D.	David St. Aubin, Ph.D. Shannon Atkinson, Ph.D. Frances Gulland, Ph.D. Jerry Shay, Ph.D. William Baldwin, Ph.D. Dennis McDaniel, Ph.D. Chun Hu, Ph.D. David Kitts, Ph.D. Andrew Trites, Ph.D. Sylvain DeGuise Tracey Romano Carlos Romero, Ph.D. Margie Peden-Adams, Ph.D. Patricia Fair, Ph.D. Hendrik Nollens, Ph.D.	Steller sea lion (SSL)
Permit Type: SCIENTIFIC RESEARCH PERMIT					
<p>Summary: This permit authorizes the acquisition and world-wide importation and exportation of marine mammal and endangered species specimens (i.e., hard and soft parts, including cell lines derived from such parts) under the jurisdiction of the NMFS and the United States (U.S.) Fish and Wildlife Service. The objectives of the research are to: 1) determine tissue levels of metals in Steller sea lions (<i>Eumetopias jubatus</i>) and other marine mammal species; and 2) to establish a national resource of marine mammal cell lines for use as model systems in the investigation of various factors related to marine mammal health (e.g., toxicity of metals, virology, etc.). Once the cell lines are established, they may be transferred to other researchers for study, including export world-wide. The cell lines will not be sold for profit or used for commercial purposes.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
1010-1641-03	expires 12/31/2007	Aleutians East Borough/University of Alaska Fairbanks	Kate Wynne	Cathy Foy	SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT Summary: The purpose of the authorized research is to provide additional information on seasonal prey consumption by SSLs through scat collection at rookeries and haulouts along the Alaska Peninsula and eastern Aleutian Islands and to improve the accuracy and precision of population indices through expanded aerial and vessel surveys in the western Gulf of Alaska.</p>					
1045-1713-00	expires 07/31/2008	Hubbs-SeaWorld Research Institute	Stephen Insley, Ph.D.	N/A	Northern fur seal (NFS)
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT Summary: The purpose of the authorized research is to remotely investigate at-sea interactions between northern fur seals (<i>Callorhinus ursinus</i>) and ships, particularly the impact of commercial fishing vessels on NFSs. Annually, lactating female NFSs from the Pribilof Islands in Alaska will be captured, measured, outfitted with data logging instrumentation, and released. The individuals will be tracked and recaptured, the data logger removed and the animals subsequently released. Additionally, Level B harassment of NFSs is authorized annually for pups, breeding females, mature males, and immature males. The results of this research will provide important information for management decisions regarding NFSs.</p>					
1049-1718-00	expires 06/30/2009	University of Alaska Fairbanks School of Fisheries and Ocean Sciences	Kate Wynne	Briana H. Witteveen Lisa Baraff Jordan Thomson	NFS/SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT Summary: The primary goal of the proposed research project is to improve understanding of the diving and foraging behaviors of fin whales and humpback whales on their feeding grounds in the Gulf of Alaska. Specific objectives include: 1) collecting data on the depth, duration, and location of dives; and 2) relating dive profiles to presence of prey fields and bathymetric features. All research will involve the non-lethal take by unintentional or incidental harassment of whales using vessels to collect photographs and attach archival time-depth-recorder tags. Incidental harassment and collection of dead parts from SSLs, NFSs, humpback whales, killer whales, minke whales, gray whales, fin whales, sperm whales, sei whales, harbor porpoises, Dall's porpoises, harbor seals, and Pacific white-sided dolphins during killer whale predation studies are permitted.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
1050-1727-00	expires 02/28/2006	Pribilof Project Office, National Oceanic and Atmospheric Administration, National Ocean Service	John A. Lindsay	N/A	NFS
<p>Permit Type: COMMERCIAL/EDUCATIONAL PHOTOGRAPHY PERMIT Summary: The purpose of the activities is to collect high-definition digital media of contemporary NFSs on the Pribilof Islands, particularly breeding and territorial behaviors in a natural setting on rookeries and haulout areas for a public television documentary series. The documentary series will combine footage of NFSs with original research, photographs, and other documents about the history of commercial fur sealing on the Pribilofs with emphasis on key historical figures.</p>					
1066-1750-00	expires 06/30/2009	NMFS	Michael Williams	Phillip A. Zavidil Steve A. MacLean	NFS
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT Summary: The purposes of the authorized research are to: 1) estimate the annual proportion of sub-adult male NFSs entangled in derelict fishing gear and marine debris, compare these estimates to those from St. Paul and St. George Islands in previous years, and capture and disentangle NFSs observed on both islands; and 2) count the number of NFSs entangled, and capture and disentangle them individually on St. Paul Island.</p>					
1068-1755-01	issued 07/14/2005 expires 05/10/2009	Pribilof Islands Stewardship Program - St. Paul	Karin Holser	Justine Kibbe Moon Rachel Holser Bruce Robson Andrew Malavansky	NFS
<p>Permit Type: LETTER OF CONFIRMATION UNDER THE GENERAL AUTHORIZATION Summary: This permit authorizes scientific research activities that involve only Level B harassment of NFSs on St. Paul and St. George Islands, Alaska. NFSs will be observed using spotting scopes and binoculars from vantage points overlooking rookeries and haulout areas to: 1) check for entangled NFSs; 2) identify tagged NFSs; 3) examine the timing of NFS arrival and parturition; and 4) estimate percent age composition of female NFSs.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
358-1769-00	expires 05/31/2010	Alaska Department of Fish and Game	Lorrie Rea, Ph.D.	Thomas Gelatt, Ph.D. Brian Fadely, Ph.D. Vicki Stegall Bob Small Don Calkins Kim Raum-Suryan Mike Rehberg Kelly Hastings Grey Pendleton Dennis McAllister Kathy Burek, D.V.M. William Taylor, D.V.M. Chris Curgus Ken Pitcher Jennifer Burns Mille Gray Kimberlee Beckman, D.V.M. Frances Gulland, D.V.M. Bruce Heath, D.V.M. Martin Haulena, D.V.M. Vicki Vanek, D.V.M. Robert Braun, D.V.M. Pam Tuomi, D.V.M. Chris Dold, D.V.M. Shawn Johnson, D.V.M. Debbie Fauquier, D.V.M. Heather Harmon Jamie King Kelly Hastings Lauri Jemison Vicki Stegall Andrew Trites, Ph.D. Julie Richmond Carrie Beck Matt Moran	SSL

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
				Jo-Ann Mellish, Ph.D. Lisa Hoopes	
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The objectives of the authorized research are to investigate the various hypotheses for the decline of SSLs in western Alaska, including conducting studies of life history traits, physiological investigations of animal condition and time of weaning, and studies of animal movement and dive activity. To accomplish this, the Alaska Department of Fish and Game will conduct aerial surveys and ground counts, as well as capture, sample, and mark SSLs.</p>					
369-1757-00	issued 05/26/2005 expires 05/31/2010	Oregon State University	Bruce Mate, Ph.D.	Barbara Lagerquist	NFS
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: This permit authorizes research on humpback whales (<i>Megaptera novaeangliae</i>), blue whales (<i>Balaenoptera musculus</i>), fin whales (<i>Balaenoptera physalus</i>), southern right whales (<i>Eubalaena australis</i>), bowhead whales (<i>Balaena mysticetus</i>), sperm whales (<i>Physeter macrocephalus</i>), grey whales (<i>Eschrichtius robustus</i>), and killer whales (<i>Orcinus orca</i>). The purposes of the authorized scientific research are to: 1) identify migration routes; 2) identify specific feeding and breeding grounds for each species, if unknown; 3) characterize local movements and dive habitats in both feeding and breeding grounds, and during migration; 4) examine the relationships between movements/dive habits of and prey distribution, time of day, geographic location, or physical and biological oceanographic conditions; 5) provide surface-rate information that can be useful in the development of more accurate abundance estimations; 6) characterize whale vocalizations; and 7) characterize sound pressure levels to which whales are exposed. Level B harassment of NFSs is authorized for in-water and aerial approach only.</p>					
42-1642-03	expires 10/15/2007	Mystic Aquarium	Lisa Mazzaro, Ph.D.	David J. St. Aubin, Ph.D.	SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The purposes of the authorized research are to: 1) study metabolic clearance rates of vitamins A and E using isotope tracers and vitamin analogs in captive SSLs, in relation to various life history stages; 2) establish the vitamin A and E status of free-ranging SSLs from samples received from other permit holders; 3) determine the metabolic requirements for these vitamins by relating intake to blood levels in captive specimens; and 4) receive, import, and export blood, milk, and other soft parts from all non-listed marine mammals and certain listed marine mammals under NMFS jurisdiction, including samples taken during routine husbandry sampling of captive marine mammals held in facilities within the U.S. and abroad; stranded animals abroad; legally subsistence hunted animals in the U.S. and abroad; and samples from this and other permitted research projects in the U.S. and abroad. The purposes of objective number 4 are to study the disease hemochromatosis (an excessive accumulation of iron in tissues often associated with hepatic lesions) and other factors associated with general marine mammal health.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
<p>Additional marine mammal health investigations include studies on: Brucella, environmental stressors and their effects on the immune system and health, and characterization of and investigations on the marine mammal nervous and immune systems. In addition, blood samples collected during routine physical exams or authorized research, tissue samples collected from animals that die of natural causes or were humanely euthanized as advised by staff veterinarians, and samples taken from dead stranded animals in the U.S. (in consultation with the NMFS Stranding Network) may be exported abroad for valid research projects. The permit also authorizes the importation of one adult male SSL known as “Kodiak” from the Vancouver Aquarium, Vancouver, Canada, for enhancement and research purposes. Specifically, Kodiak will be bred with female SSLs currently maintained by Mystic Aquarium, in support of the study on changes in vitamin A and E status in relation to various life history stages, as part of an on-going investigation of the decline of the SSL population. Any progeny resulting from breeding will serve to expand the pool of captive sea lions available for enhancement and scientific research activities, including the studies just described.</p>					
434-1669-03	expires 12/31/2007	Oregon Department of Fish and Wildlife	Robin Brown	Robert DeLong, Ph.D. Jeff Laake Bryan Wright Susan Reimer Sharon R. Melin, Ph.D. Pat Gearin Brad Hanson Steven Jeffries John Sease Thomas Loughlin, Ph.D.	SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT Summary: The purpose of the authorized research is to continue monitoring the status of the Alaskan SSL population and to identify causes of the population decline to provide for the population’s recovery. This permit authorizes takes of threatened SSLs in Washington, Oregon, and California by: 1) capture; 2) hot-branding; 3) flipper tagging; 4) collection of blood and tissue samples; 5) attachment of external scientific instruments; 6) harassment incidental to these activities and remote monitoring; and 7) accidental mortality.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
473-1700-00	expires 06/30/2009	University of Alaska Southeast	Janice Straley	Elizabeth Wilson Elizabeth Mathews Steve Lewis Briana Lawson Kate Wynne Janet Doherty Christine Gabriele	NFS/SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The objectives of the proposed research are to collect data to: 1) continue a study in developing long term sighting histories of individual humpback whales to assess stock structure, life history parameters, feeding behaviors, social behaviors of feeding populations, and population estimates; 2) assess the feasibility of using a CRITTERCAM to aid researchers in determining how sperm whales are depredating longline fishing gear in the Gulf of Alaska; 3) opportunistically photo-identify and sample biopsy killer whales, sperm whales, minke whales (<i>Balaenoptera acutorostrata</i>), gray whales and fin whales to enhance the body of knowledge, stock structure, and current status of these species in the North Pacific; and 4) follow killer whale predation events, photograph, observe, sample biopsy, incidentally harass and collect and export dead parts from prey including: humpback whales, gray whales, minke whales, fin whales, harbor porpoise (<i>Phocoena phocoena</i>), Dall's porpoise (<i>Phocoenoides dalli</i>), Pacific white-sided dolphin (<i>Lagenorhynchus obliquidens</i>), NFS, SSL and harbor seal (<i>Phoca vitulina</i>). All research would take place over a 5-year period ending June 30, 2009.</p>					
486-1790-00	expires 10/01/2010	Hubbs-SeaWorld Research Institute	Brent S. Stewart Ph.D., JD	Pamela K. Yochem MS, D.V.M.	NFS
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The objectives of the authorized research are to continue studies begun in 1978 on the demography, physiological ecology, foraging ecology, and behavior of California sea lions (<i>Zalophus californianus</i>), northern elephant seals (<i>Mirounga angustirostris</i>), harbor seals, and NFSs in California. To accomplish this, the permit holder will conduct: 1) aerial surveys; capture individuals of any age of the aforementioned mentioned pinniped species by various techniques; 2) physically or chemically immobilize animals; 3) collect blood, skin, hair, blubber, muscle, urine, feces, gastric contents, and various skin and mucosal swabs; 4) flipper tag animals; 5) attach VHF and satellite-linked radio transmitters or time-data recorders to some animals; 7) and perform exams of musculoskeletal and cardiovascular systems, ears, nares, oral cavity, and eyes.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
545-1761-00	issued 09/16/2005 expires 09/15/2010	North Gulf Oceanic Society	Craig Matkin	Russel Andrews, Ph.D. Lance Barrett-Lennard Mike Brittain David Ellifrit John Ford Dena Matkin Lori Mazzuca Peter Nilsson Damian Sean Power Eva Saulitis Cy St. Amand Janice Straley Kate Wynne	NFS/SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The objectives of the research are to conduct population studies on numerous cetacean species. The research specifically focuses on gathering data to study: 1) mating and social systems and feeding behavior of killer whales; and 2) diving behavior, feeding, movement and contaminant loads of several cetacean species. Takes will occur by close approach for vessel surveys, photo-identification, behavioral observation, passive acoustic recording, tagging, biopsy sampling, collection and export of dead parts, and incidental harassment. Research will take place in waters off Alaska over a 5-year period. Collection of dead parts from SSLs, NFSs, humpback whales, minke whales, gray whales, harbor porpoises, Dall's porpoises, harbor seals, and Pacific white-sided dolphins during killer whale predation studies is permitted. Incidental takes are also allowed of Baird's beaked whale (<i>Berardius bairdii</i>), Cuvier's beaked whale (<i>Ziphius cavirostris</i>), Stejneger's beaked whale (<i>Mesoplodon stejnegeri</i>), in addition to the aforementioned species during predation studies.</p>					
715-1784-00	expires 05/31/2010	North Pacific Universities Marine Mammal Research Consortium	Andrew Trites, Ph.D.	Laura Kucey	SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The objectives of the authorized research are to understand how diets vary temporally and spatially, and how this variation is related to population trends and abundance, nutritional stress, and commercial fishing activities. To accomplish this objective, researchers intend to: 1) collect data on SSL distribution and diet compositions through aerial surveys of SSL rookeries and haulouts in southeast Alaska; 2) collect scat from rookeries and haulouts in southeast Alaska; and 3) conduct behavioral observations of SSLs on rookeries, haulouts and tagged SSLs at sea.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
774-1714-00	expires 06/30/2009	Southwest Fisheries Science Center NMFS	Stephen B. Reilly, Ph.D.	Lisa Ballance Jay Barlow Jim Carretta Susan Chivers Tim Gerrodette Peter Dutton Rick LeDuc Wayne Perryman Bob Pitman Barbara Taylor Mark Lowry	NFS/SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The permit contains four projects and the objectives of each project are: <i>Project I (Pinniped Studies)</i> to conduct population assessments for pinnipeds to determine abundance, distribution patterns, length frequencies, breeding densities, to determine the diet from collection of scat and spew (collection of scat and spew will occur on California sea lion haulouts only), and to assess the status of pinniped species and identify fishery-marine mammal conflicts; <i>Project II (Cetacean Studies)</i> to determine the abundance, distribution, movement patterns, and stock structure of cetaceans, in U.S. territorial and international waters; <i>Project III (Sea Turtle Studies)</i> to determine the abundance, distribution, movement patterns, stock structure and diet of marine turtles in U.S. territorial and international waters; <i>Project IV (Salvage and Import/Export of Parts Studies)</i> salvage, collection of biological samples and import/export of parts will be used to determine stock structure.</p> <p>Level B harassment is permitted in <i>Project I</i> on northern elephant seals, California sea lions, SSLs, NFSs and harbor seals. <i>Project IV</i> permits specimens to be collected, salvaged, acquired, analyzed, archived, imported/exported, re-imported, re-exported worldwide in unlimited numbers from whales, dolphins, porpoises, seals, sea lions, and sea turtles. <i>Projects II and III</i> do not involve scientific research or takes of SSLs and NFSs.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
782-1613-03	issued 11/02/2001 expires 04/30/2006	NMFS/Alaska Fisheries Science Center/National Marine Mammal Laboratory (NMML)	Sue Moore, Ph.D. (original Principal Investigator was Robert DeLong, Ph.D.)	Sharon R. Melin, Ph.D. Frances M. D. Gulland Linda J. Lowenstein	NFS
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The purpose of the authorized research is to: 1) monitor trends in population parameters and health (population assessment) and study the ecology of infectious diseases and cancers of California sea lions; and 2) to describe the environmental factors influencing the foraging ecology of harbor seals and northern elephant seals. Level B harassment is permitted on NFSs resulting from branding activities, and live and dead pup surveys of California sea lions.</p>					
782-1702-03	expires 09/30/2008	NMML	John Bengtson, Ph.D. (original Principal Investigator was Sue Moore, Ph.D.)	Robin Brown Robert DeLong, Ph.D. Steven Jeffries Pat Gearin Merrill Gosho Harriet Huber	SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The purposes of the authorized research are to conduct aerial, ground, and vessel surveys annually for stock assessment of harbor seals, California sea lions, SSLs, and northern elephant seals. Harbor seals, California sea lions, SSLs and northern elephant seals will be: 1) captured, tagged, and branded for long-term identification of individuals and to collect information on reproductive success, survival and longevity; 2) blood sampled for disease screening; 3) blubber biopsied for contaminant analysis; 4) tissue sampled for genetics and for fatty acid analysis; and 5) some seals will be instrumented with VHF radio transmitters and/or time-depth recorders, satellite tags or sonic tags to document movements, activity, and foraging patterns. In addition, harbor seals will be blood sampled and biopsied for contaminant analysis and tissue sampled for genetic analysis. Harbor seals and California sea lions will be instrumented with VHF radio transmitters and/or time-depth recorders or satellite tags to document movement activity and foraging patterns.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
782-1708-02	issued 06/23/2005 expires 12/31/2008	NMML	John Bengtson, Ph.D. (original Principal Investigator was Thomas Loughlin, Ph.D.)	Sue Moore, Ph.D. Robert DeLong, Ph.D. Brian Fadely, Ph.D. Rolf Ream, Ph.D. Ward Testa	NFS
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The purposes of the authorized research are to: 1) monitor the status and trends of the NFS population; 2) evaluate the condition of animals from each cohort (health and strength of year class); 3) monitor the diet; 4) document the movement patterns, foraging behavior, and essential foraging habitat of various age and sex classes of NFSs; and 5) test the hypotheses that a) prey availability is a function of physical oceanographic features, productivity, and/or commercial fishery pressure and prey quality is likely a condition of habitat type and associated with community structure. Therefore, prey availability and quality are lower on the continental shelf than the Bering Sea; and b) alternatively, if differences in female condition during the breeding season (when they are utilizing more local foraging areas) are not reflected in body condition, food web productivity in the North Pacific is insufficient to support NFSs on their winter-spring migration and is causing the decline on rookeries.</p>					
782-1768-01	issued 05/31/2005 expires 05/31/2010	NMML	Thomas Gelatt, Ph.D.	Vladimir Burkanov, Ph.D. Don Calkins Brian Fadely, Ph.D. Lowell Fritz Thomas Loughlin, Ph.D. Wayne Perryman Lorrie Rea, Ph.D. Rolf Ream, Ph.D. Ward Testa James Thomason Kate Wynne	SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The permit contains two projects and the objectives of each project are: <i>Project 1</i> to collect information on the life history, foraging behavior, habitat use, physiology, population status and trends, survival and reproductive rates, and condition of SSLs in the North Pacific. To accomplish this, NMML will conduct aerial surveys and ground counts, as well as capture, sample, and mark SSLs. <i>Project 2</i> will identify individual animals to determine predation rates on endangered salmonids; to perform disease screening and genetic analyses; and to document movements and migration rates of individuals. To accomplish this, NMML will capture, sample, tag, and hot-brand SSLs in Washington and Oregon.</p>					

Permit Number	Valid* Dates	Entity/Institution	Principal Investigator	Co-Investigator	Marine Mammal Affected
881-1668-05	expires 12/31/2008	Alaska SeaLife Center	Donald Calkins	Jo-Ann Mellish, Ph.D. Shannon Atkinson, Ph.D. Pam Tuomi, D.V.M. Natalie Noll, Ph.D. Alexander Burdin, Ph.D. John Maniscalco Jason Waite Kendall Mashburn Markus Horning, Ph.D. Russel Andrews, Ph.D. Daniela Maldini Lorrie Rea, Ph.D. Bob Hicks Lisa Mazzaro, Ph.D.	SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The purpose of the authorized research is to collect information on the health status, physiology, life history, foraging behavior and habitat use of SSLs. The permit includes 1) transport, temporary captive maintenance at the Alaska SeaLife Center and associated experiments on juvenile SSLs authorized for capture; and 2) substitution of hair bleach, paint marks, or fur clippings for hot-brands as a means of marking individual SSL pups.</p>					
881-1745-00	issued 03/16/2006 expires 03/31/2011	Alaska SeaLife Center	Shannon Atkinson, Ph.D.	Donald Calkins Dennis Christen Russel Andrews, Ph.D. Jo-Ann Mellish, Ph.D. Lisa Hartman	SSL
<p>Permit Type: SCIENTIFIC RESEARCH PERMIT</p> <p>Summary: The purpose of the authorized research is to investigate stress responses, endocrine and immune system function, and seasonal variations to normal biological parameters in captive SSLs at the Alaska SeaLife Center. Additionally, the Alaska SeaLife Center will conduct research and development of external tags and attachments and test less-intrusive research methods on the captive SSLs for future deployment in the field on wild SSLs. Projects include: 1) “Condition Assessment;” 2) “Endocrinology and Immunology Study;” 3) “Assessing Metabolism in Steller Sea Lion Survival;” 4) “Metabolic Demands of Steller Sea Lion Survival;” and 5) “Biotelemetric Monitoring of Foraging Behavior.”</p>					

Notes: NFS northern fur seals
 NMFS National Marine Fisheries Service
 NMML National Marine Mammal Laboratory

SSL Steller sea lions
 U.S. United States

* Permit issuance and expiration dates are provided where available.