

Walrus Islands State Game Sanctuary Annual Management Report 2013

Edward W. Weiss
Ryan P. Morrill



© 2013 ADF&G. Photo by Benjamin Hestand.



February 2014

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the reports by the Division of Wildlife Conservation. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)		General		Mathematics, statistics			
centimeter	cm	<i>all commonly-accepted abbreviations; e.g., Mr., Mrs.</i>		<i>standard mathematical signs,</i>			
deciliter	dL	<i>all commonly-accepted professional titles; e.g., Dr., Prof., Rev.</i>		<i>and abbreviations</i>			
gram	g	Alaska Administrative Code	AAC	alternate hypothesis	H _A		
hectare	ha	Alaska Department of		approximately	~		
kilogram	kg		Fish and Game	base of natural logarithm	e		
kilometer	km	at		@	catch per unit effort	CPUE	
liter	L	compass directions:			coefficient of variation	CV	
meter	m		east	E	common test statistics	(F, t, χ^2 , etc.)	
milliliter	mL		north	N	confidence interval	CI	
millimeter	mm		south	S	correlation coefficient (multiple)	R	
			west	W	correlation coefficient (simple)	r	
				©	covariance	cov	
		copyright			degree (angular)	°	
		corporate suffixes:		Company	Co.	degrees of freedom	df
cubic feet per second	ft ³ /s			Corporation	Corp.	expected value	E
foot	ft			Incorporated	Inc.	greater than	>
gallon	gal			Limited	Ltd.	greater than or equal to	≥
inch	in	District of Columbia	D.C.			harvest per unit effort	HPUE
mile	mi	<i>et alii</i> (and others)	et al.			less than	<
nautical mile	nmi	<i>et cetera</i> (and so forth)	etc.			less than or equal to	≤
ounce	oz	<i>exempli gratia</i> (for example)	e.g.			logarithm (natural)	ln
pound	lb	Federal Information Code	FIC			logarithm (base 10)	log
quart	qt	<i>id est</i> (that is)	i.e.			logarithm (specify base)	log ₂ , etc.
yard	yd	latitude or longitude	lat. or long.			mean	\bar{x}
		monetary symbols (U.S.)	\$, ¢			minute (angular)	'
		months (tables and figures):	first			not significant	NS
		three	letters (Jan.,...,Dec)			null hypothesis	H ₀
		registered trademark	®			percent	%
		trademark	™			plus or minus	±
		United States (adjective)	U.S.			population size	N
		United States of America (noun)	USA			probability	P
		U.S.C.	United States Code			sample size	n
		U.S. state	use two-letter abbreviations			second (angular)	"
				(e.g., Alaska)		standard deviation	σ or s
						standard error (of the mean)	s \bar{x}
						type I error probability	P _a
						type II error probability	P _b
						variance	σ^2 or s ²
Weights and measures (English)							
cubic feet per second	ft ³ /s						
foot	ft						
gallon	gal						
inch	in						
mile	mi						
nautical mile	nmi						
ounce	oz						
pound	lb						
quart	qt						
yard	yd						
Time and temperature							
day	d						
degrees Celsius	°C						
degrees Fahrenheit	°F						
degrees kelvin	K						
hour	h						
minute	min						
second	s						
Physics and chemistry							
		<i>all atomic symbols</i>					
alternating current	AC						
ampere	A						
calorie	cal						
direct current	DC						
hertz	Hz						
horsepower	hp						
hydrogen ion activity (negative log of)	pH						
parts per million	ppm						
parts per thousand	ppt, ‰						
volts	V						
watts	W						

Cover Photo: A black-legged kittiwake (*Rissa tridactyla*) perches on top of a Pacific walrus (*Odobenus rosmarus divergens*) resting on the Flat Rock haulout August 30, 2013, Round Island, Alaska. Walrus Islands State Game Sanctuary. Photo © 2013 ADF&G, by Benjamin Hstand.

Walrus Islands State Game Sanctuary Annual Management Report 2013

Edward W. Weiss,
Alaska Department of Fish and Game
Division of Wildlife Conservation
333 Raspberry Road
Anchorage, Alaska 99518

and

Ryan P. Morrill,
Alaska Department of Fish and Game
Division of Wildlife Conservation
333 Raspberry Road
Anchorage, Alaska 99518

February 2014

©2014 Alaska Department of Fish and Game

Alaska Department of Fish and Game
Division of Wildlife Conservation
333 Raspberry Road
Anchorage, AK 99518



The State of Alaska's wildlife refuges, sanctuaries, and critical habitat areas are managed by the Lands and Refuges program of the Division of Wildlife Conservation in the Alaska Department of Fish and Game. Funding for the program and its publications comes from appropriations made by the Alaska Legislature.

Special Area Management Reports address management activities and goals within specific Refuges, Critical Habitat Areas and Sanctuaries managed by the division. The Special Areas Management Reports are intended for biologists or other technical professionals, as well as to inform the general public about the special areas. Reports are available through the Alaska State Library and through the department's Internet website at www.adfg.alaska.gov.

This publication was reviewed and approved for publication by Joe Meehan, Lands and Refuges Program Coordinator, Anchorage, Alaska. It was published and is provided in electronic PDF format only.

The Alaska Department of Fish and Game does not endorse or recommend any specific company or their products. Product names used in this publication are included for completeness but do not constitute product endorsement.

Special Areas Management Reports are available from the Alaska Department of Fish and Game's Division of Wildlife Conservation, PO Box 115526, Juneau, Alaska 99811-5526; phone (907) 465-4190; email: dfg.dwc.publications@alaska.gov; website: www.adfg.alaska.gov. The report may also be accessed through most libraries, via interlibrary loan from the Alaska State Library or the Alaska Resources Library and Information Service (www.arlis.org).

This document should be cited as follows:

Weiss, E. W., and R. P. Morrill. 2014. Walrus Islands State Game Sanctuary Annual Management Report 2013. Alaska Department of Fish and Game, Division of Wildlife Conservation, Special Areas Management Report ADF&G/DWC/SAMR-2014-2, Anchorage, Alaska.

The Alaska Department of Fish and Game (ADF&G) administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act (ADA) of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility please write:

ADF&G ADA Coordinator, P.O. Box 115526, Juneau, AK, 99811-5526
U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, MS 2042, Arlington, VA, 22203
Office of Equal Opportunity, U.S. Department of the Interior, 1849 C Street, NW MS 5230, Washington D.C., 20240

The department's ADA Coordinator can be reached via telephone at the following numbers:

(VOICE) 907-465-6077

(Statewide Telecommunication Device for the Deaf) 1-800-478-3648

(Juneau TDD) 907-465-3646, or (FAX) 907-465-6078

For information on alternative formats and questions on this publication, please contact:

ADF&G, Division of Wildlife Conservation, Lands and Refuges Program. 333 Raspberry Road, Anchorage, AK 99518-1565. Email dfg.dwc.publications@alaska.gov; phone (907) 267-2257.

Table of Contents

List of Figures	ii
List of Tables	ii
List of Appendices	ii
Executive Summary	iii
Introduction	1
Wildlife Research & Monitoring	2
Walrus Monitoring Surveys	2
Observer variability counts.....	5
Walrus Disturbance Monitoring.....	7
Steller Sea Lion Monitoring.....	8
Seabird Monitoring	10
Pelagic cormorant productivity monitoring.....	10
Black-legged kittiwake productivity monitoring.....	10
Common murre productivity monitoring	12
Population counts	12
Other Observations.....	12
Weather.....	13
Marine mammals	13
Terrestrial Mammals.....	13
Birds.....	14
Remote Camera Observations	14
Other Portions of WISGS	15
Public Use & Land Management	15
Visitor Use.....	16
Access Violations.....	19
Subsistence Hunt.....	20
Sanctuary Administration & Management	20
Staffing.....	20
Facilities	21
Ivory Collection.....	22
Acknowledgements	23
Literature Cited	23
APPENDICES	24

List of Figures

Figure 1. Map of Bristol Bay showing the locations of the Walrus Islands State Game Sanctuary, Round Island, and the four major terrestrial Pacific walrus haulout sites in the United States.....	1
Figure 2. Round Island walrus, seabird & Steller sea lion monitoring locations.	3
Figure 3. 2013 Pacific walrus hauled out daily at Round Island, vs 2008 - 2012 means.	6
Figure 4. 1985 – 2013 peak and annual mean Pacific walrus counts, Round Island.....	6
Figure 5. 2013 Steller sea lions hauled out at East Cape, Round Island.....	9
Figure 6. 1999-2013 Mean number of Steller sea lions at East Cape, Round Island.	9
Figure 7. Round Island, Walrus Islands SGS showing 3 NM restricted waters and access corridor.....	17
Figure 8. Visitor Use at Round Island, 1977 – 2013.	19

List of Tables

Table 1. 2008 - 2013 Seabird Phenology and Productivity Summary, Round Island, AK	11
Table 2. 2008 – 2013 Weather Summary, Round Island, Alaska.....	13
Table 3. 2013 Visitor Use Summary, Round Island, WISGS. Alaska.....	18
Table 4. Observed Walrus Mortalities and Recovered Ivory, Round Island, AK, 2013.	22

List of Appendices

Appendix A. 2013 Pacific walrus daily count summary, Round Island, Alaska.....	25
Appendix B. Pacific walrus detailed count data, 2013 Round Island, Alaska.....	27
Appendix C. 2013 walrus monitoring variability count summary.	56
Appendix D. Anthropogenic and disturbance events, Round Island, Alaska, 2013.....	57
Appendix E. Steller sea lion daily count data for 2013, Round Island, Alaska.....	62
Appendix F. 2013 Pelagic Cormorant Productivity Data, Round Island, Alaska.....	71
Appendix G. 2013 Black-Legged Kittiwake Productivity Data, Round Island, Alaska.....	72
Appendix H. 2013 Common Murre Productivity Data, Round Island, Alaska.	74
Appendix I. 2013 Population Counts, Round Island, Alaska.	77
Appendix J. 2013 Daily Observations, Round Island, Alaska.....	80
Appendix K. 2013 Daily weather observations, Round Island, Alaska.....	84

Executive Summary

Established in 1960, the Walrus Islands State Game Sanctuary; a group of seven islands (Round Island, Summit Island, Crooked Island, High Island, Black Rock and The Twins) and their adjacent waters in northern Bristol Bay; protects one of the largest terrestrial haulout sites in North America for Pacific walrus. The sanctuary also protects important habitats for several species of seabirds, Steller sea lions and other marine and terrestrial birds and mammals. The ADF&G staffs a camp at Round Island May through August to protect and monitor walruses, other terrestrial and marine wildlife, and to operate a visitor use program.

Walrus counts for the 2013 field season were conducted from May 06 through August 16. The maximum count (east and west side beaches combined) was 3,761 on July 07. For comparison with historical counts which have typically been of east side beaches, the maximum count for east side beaches of 3,399 also occurred on July 07. The daily mean count from the east side beaches was 1,145 walrus, higher than the 2008 to 2012 mean of 703. The daily mean count for all beaches combined was 1,290.

Steller sea lions were monitored at their Round Island haulout site at East Cape. Sea lions were monitored May 07 through August 16. The maximum count was 418 individuals on May 23, and the minimum count of 10 individuals occurred on June 22. The mean number of sea lions present on Round Island during the 2013 season was 160, down from 2012, but above the 2008 to 2012 mean of 157. Three hundred-fifteen photo-confirmed sightings of brands were recorded in 2013, representing 40 individuals originating from four natal rookeries.

Pelagic cormorants, black-legged kittiwakes, and common murre phenology and productivity were monitored from May 14 through August 15. In 2013 common murre productivity was above average and black-legged kittiwake's productivity was slightly below average compared to a five year mean. Pelagic cormorants nested in both historic and new observation sites, and the productivity for the nests monitored was above the five year mean. A concise summary of phenology and productivity for all three species for 2008 to 2013 is provided.

Commercial transport from Togiak to Round Island was available throughout the summer, however, visitation decreased during the 2013 season. A total of 48 visitors to Round Island included visits by six persons involved in administrative duties. The 42 general public visitors were from 10 individual groups and were comprised of five overnight campers and 37 day visitors. The majority of visitors were Alaska residents. There were 60 visitor use days and 232 staff use days for a total of 292 user days between May 06 and August 16.

The Alaska SeaLife Center project monitoring disturbances at select walrus haulouts within Bristol Bay, including Round Island, continued this year; including the addition of a bioacoustics monitoring device at First Beach. Alaska SeaLife Center staff members are currently analyzing data and preliminary results are pending.

There were two documented violations of the three mile restricted zone around the island (Alaska State Regulation – 5AAC 92.066). Both incidents involved vessels passing through restricted waters at about two miles offshore. Out of date charts carried by operators and incorrect chart software may be a continuing source of violations. In addition, a small plane flying at an undetermined height caused a major disturbance on MB before turning north towards Crooked Island.



Introduction

The Walrus Islands State Game Sanctuary (WISGS) was created in 1960 by the Alaska State Legislature. The sanctuary protects a group of seven craggy islands (Round Island, Summit Island, Crooked Island, High Island, Black Rock and The Twins) and their adjacent waters in northern Bristol Bay, approximately 65 miles southwest of Dillingham, Alaska (Figure 1). The sanctuary was created to protect the last remaining terrestrial haulout for Pacific walrus (*Odobenus rosmarus divergens*) in North America (Alaska Statute 16.20.090). At the time all other haulouts had been abandoned due to anthropogenic disturbances, mostly related to commercial hunting.

Today, the sanctuary continues to provide important habitat for walrus; Round Island being the primary active haulout of four sites within Bristol Bay. The sanctuary also protects important habitats for many species of seabirds, the endangered western stock of Steller sea lions (*Eumetopias jubatus*), and other marine and terrestrial wildlife species.

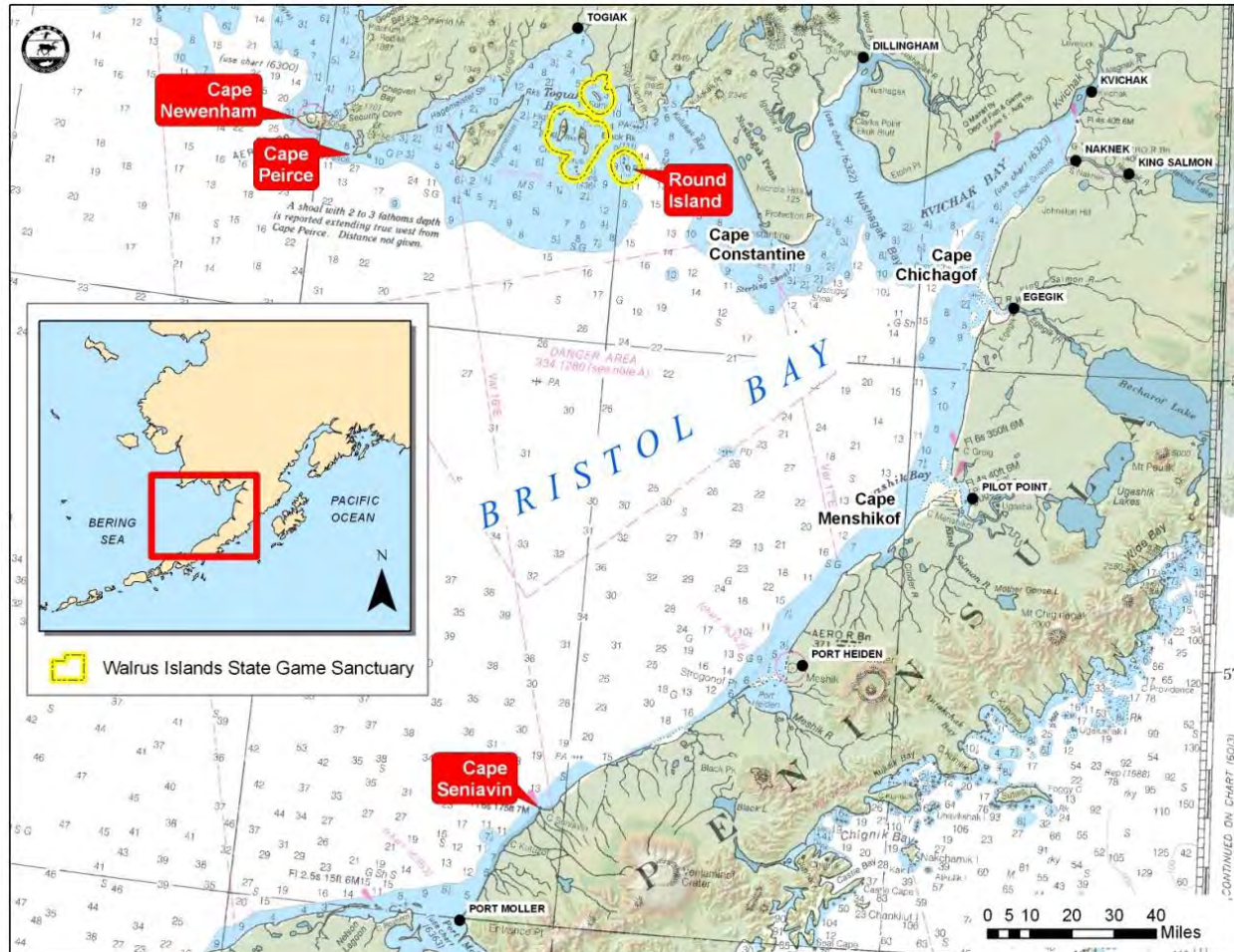


Figure 1. Map of Bristol Bay showing the locations of the Walrus Islands State Game Sanctuary, Round Island, and the four major terrestrial Pacific walrus haulout sites in the United States.

The Alaska Department of Fish and Game (ADF&G) manages the sanctuary primarily to protect these habitats and wildlife species, and secondarily to provide for public use and enjoyment of these resources including the opportunity for scientific and educational study, viewing, and photography. Since 1989, all access to Round Island and its surrounding waters within a three mile radius requires an access permit issued by the ADF&G, Division of Wildlife Conservation. In addition, restrictions have been placed on visitor numbers and their activities in order to preserve the important resources at Round Island (Alaska Administrative Code 5 AAC 92.066).

ADF&G staffs the Round Island field camp with two technicians through the spring and summer season. Staff duties consist primarily of the protection of sanctuary resources; enforcement of sanctuary laws, regulations and policies; monitoring the sanctuary wildlife including walruses, seabirds, Steller sea lions and other species; managing the visitor use and access permit program; and maintaining trails and facilities.

Wildlife Research & Monitoring

Walrus Monitoring Surveys

Walrus monitoring protocols used in collecting daily walrus observations on Round Island were established jointly by the U.S Geological Survey, Biological Resources Division (USGS BRD), the US Fish and Wildlife Service (USFWS), and ADF&G staff in 1997 and refined in 2002. Nine beaches are counted daily on the east side of the island: Second Prime (SP), Second Beach (SB), First Prime (FP), First Beach (FB), Campground (CG), Boat Cove (BC), Flat Rock (FR), North Boat Cove (NBC), and Main Beach (MB; Figure 2). Surveys of the west side of the island regularly include West Main beach (WM) as trail conditions and weather allow. Counts of WM are generated for non-survey days from Alaska SeaLife Center (ASLC) photos taken at the scheduled survey time. The remainders of the west side beaches south of West Cape are only observable by boat and done opportunistically as weather allows.

Weather data (max/min temperature, barometric pressure, wind speed and direction, and cloud cover) were collected at the time of all surveys using a TMDavis weather station mounted on top of the cabin in 2009. Three boat counts of West side beaches were conducted in 2013 with no walrus being noted on the west side of Round Island other than West Main beach.

As evidenced by the USFWS camera overlooking MB, Pacific walrus were present on the MB haulout at Round Island through October 23, 2012 and began hauling out on MB again on April 19, 2013. The ASLC camera overlooking WM showed walrus swimming by in offshore waters on April 17 and hauling out onto WM on April 18.

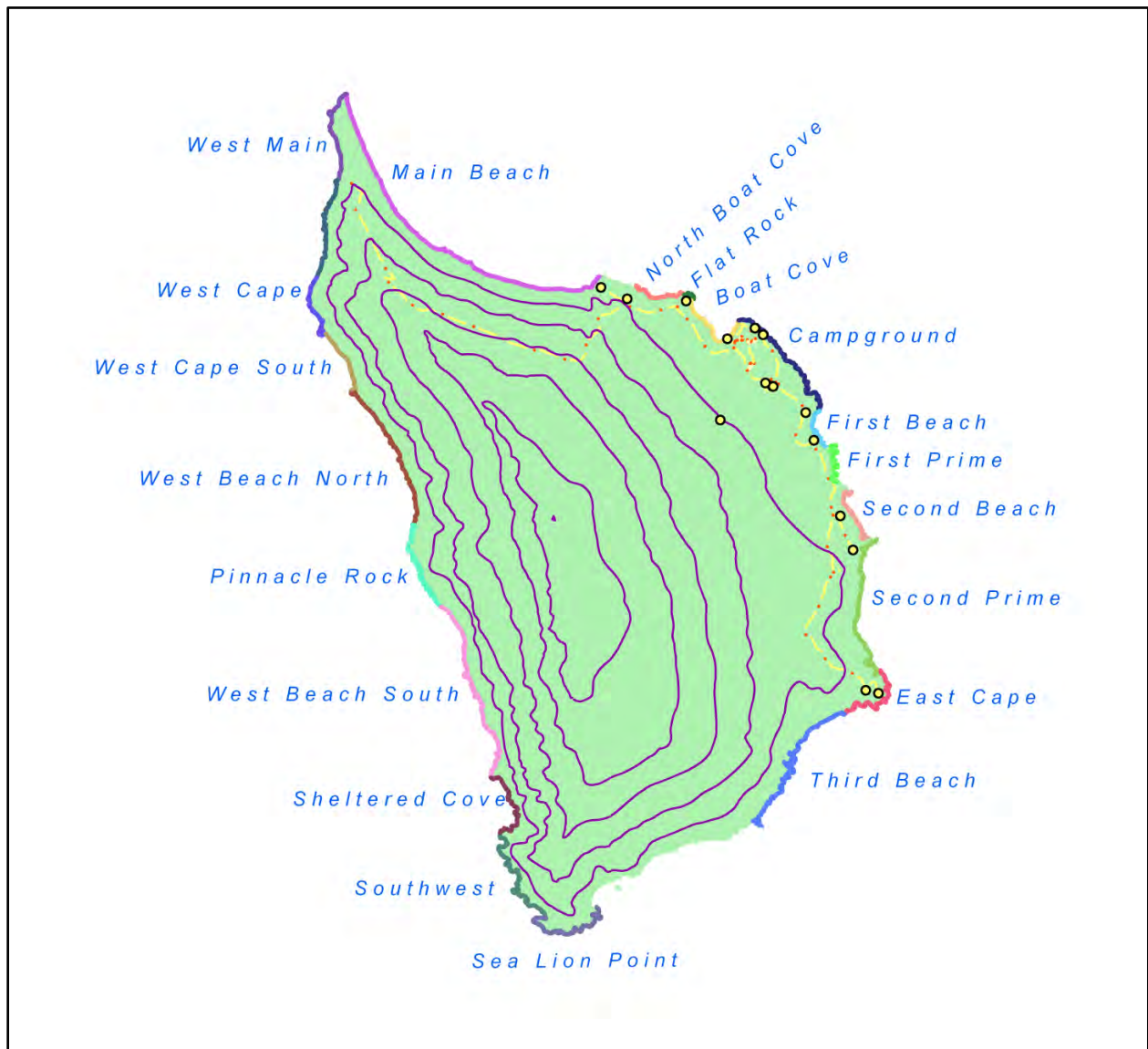


Figure 2. Round Island walrus, seabird & Steller sea lion monitoring locations; East Cape (EC), Second Prime (SP), Second Beach (SB), First Prime (FP), First Beach (FB), Camp Ground (CG), Boat Cove (BC), North Boat Cove (NBC), Observation Point (OP), Main Beach (MB), and West Main Beach (WM).

Regular walrus survey counts for the 2013 field season were conducted beginning May 06 when staff arrived on the island through August 16. East side beaches were counted 103 out of the total 103 days that staff occupied the island. Daily counts are summarized in Figure 3 and Appendix A; and detailed in Appendix B. The first survey of WM beach was delayed until May 28 due to heavy snow on the trail. WM was physically surveyed on 56 days, with in season and post season photo counts of the ASLC camera data providing counts on 46 of the remaining days up until August 15; for a total of 102 WM count days. The combined east and west side beaches, currently known to support haulouts, were surveyed a total of 102 of the 103 days staff was on

the island. Additional WM counts after August 16 will be added after ASLC cameras are downloaded in spring 2014.

The maximum walrus count of 3,761 occurred on July 07, 2013; from combined counts of east and west side beaches (Figure 3). This was about 12.5% more than the 2012 maximum count of 3,289 and about 3% more than the 10 year long term average high count of 3,638. Walrus were present on the island every day of the season. Numbers remained above 100 animals for 103 of the 103 survey days with a daily mean of 1,290 walrus on east and west side beaches through the period. On the handful of days where walrus numbers on east side beaches dropped below 100; there were 200 – 300 hundred at the West Main haul out. Three boat counts were conducted this season; and no walrus were observed on the west side of Round Island, south of West Cape.

The maximum count on east side beaches of 3,399 also occurred on July 07. The mean count for east side beaches was 1,145 which represents about a 29% increase from the 2012 east side mean count of 818 and a 39% increase from the prior five year mean of 703. On WM beach the maximum count of 665 occurred on August 13 and walrus were not present on WM 44 of the 102 days it was counted. The mean count for WM beach was 156 which is a 72% increase of the 2012 WM mean of 44 and nearly identical to the 2011 WM mean of 158.

The annual peak count of walruses at Round Island varies significantly between years (Figure 4) with the highest count estimate documented as 15,000 during a 1978 aerial survey. The lowest annual peak count was 1,746 in 1998 (Raymond 1998). It is unknown how Round Island counts correlate to fluctuations in Pacific walrus populations or variability in movements of walrus within Bristol Bay and the Bering Sea. Fluctuations in yearly peak counts may be attributed to the movement of walruses between the United States and Russia and more locally between several Bristol Bay haulouts. Historically, major walrus haulout sites within Bristol Bay included: Amak Island, Port Moller, Cape Seniavin (located between Port Moller and Port Heiden), Cape Peirce, Cape Newenham, and two islands within the WISGS (Round and Big Twin) (Frost et al. 1982). The southwestern shoreline of Hagemester Island has also recently emerged as a significant walrus haulout in this region (MacDonald and Winfree 2008). Between feeding bouts, walruses in Bristol Bay repeatedly utilize only these few specific sites to rest. During the mid-1900's, with the exception of Round Island, all terrestrial haulouts were abandoned. This abandonment was presumably caused by commercial hunting pressure as well as other disturbances (Fay 1982). The parameters that define a specific haulout site for walruses versus all available coastal locations within Bristol Bay are not well understood but may be influenced by prey abundance and distribution, walrus densities, physical terrain, or remoteness from disturbances.

The USFWS Togiak National Wildlife Refuge conducts aerial surveys of walrus haulouts annually at Hagemester Island, Cape Peirce and Cape Newenham and remote camera counts of individual beaches at Cape Peirce and Hagemester Island (Michael Winfree, pers. comm.). Additionally, the ASLC collected photo data for counts at Cape Seniavin, Round Island and Cape Peirce connected with their Pacific Walrus Haulout Monitoring and Disturbance Project. Preliminary results from both these sources were unavailable at the time of this writing for comparison with Round Island, however, it is expected that the USFWS will compile data from

all major Bristol Bay haulouts, including Round Island, in their report on the Marine Mammal Haulout Use in Bristol Bay and Southern Kuskokwim Bay (Patrick Walsh, pers. comm.).

OBSERVER VARIABILITY COUNTS

Variability counts, to check and calibrate observer variability during walrus surveys, are typically only conducted for MB from the OP viewpoint. The half mile distance and view aspect between the observer and the walrus makes the counting of individual animals difficult. However, variability counts at other beaches and viewpoints do occur during training and orientation of new staff. During variability counts, visual counts are conducted by each staff member at the same time from the same viewpoint and are also cross referenced with photos taken during the same period. Photo counts are then conducted later using Image J software.

During 2013, variability counts were conducted throughout the season from May 09 through August 11. DCO assisted with 11 variability counts from May 09 through May 21, in order to train and calibrate counts between existing and new incoming staff. These counts were made at MB and involved approximately 300 to 1,800 walrus. RPM and BMH continued conducting variability counts on a weekly basis throughout the summer. Ground photos were taken from the OP viewpoint and along the Traverse Trail looking down on MB. The photos from the Traverse Trail offered a better view of individual walrus and were used to check observer's walrus count estimates. Variability results are presented in Appendix C.

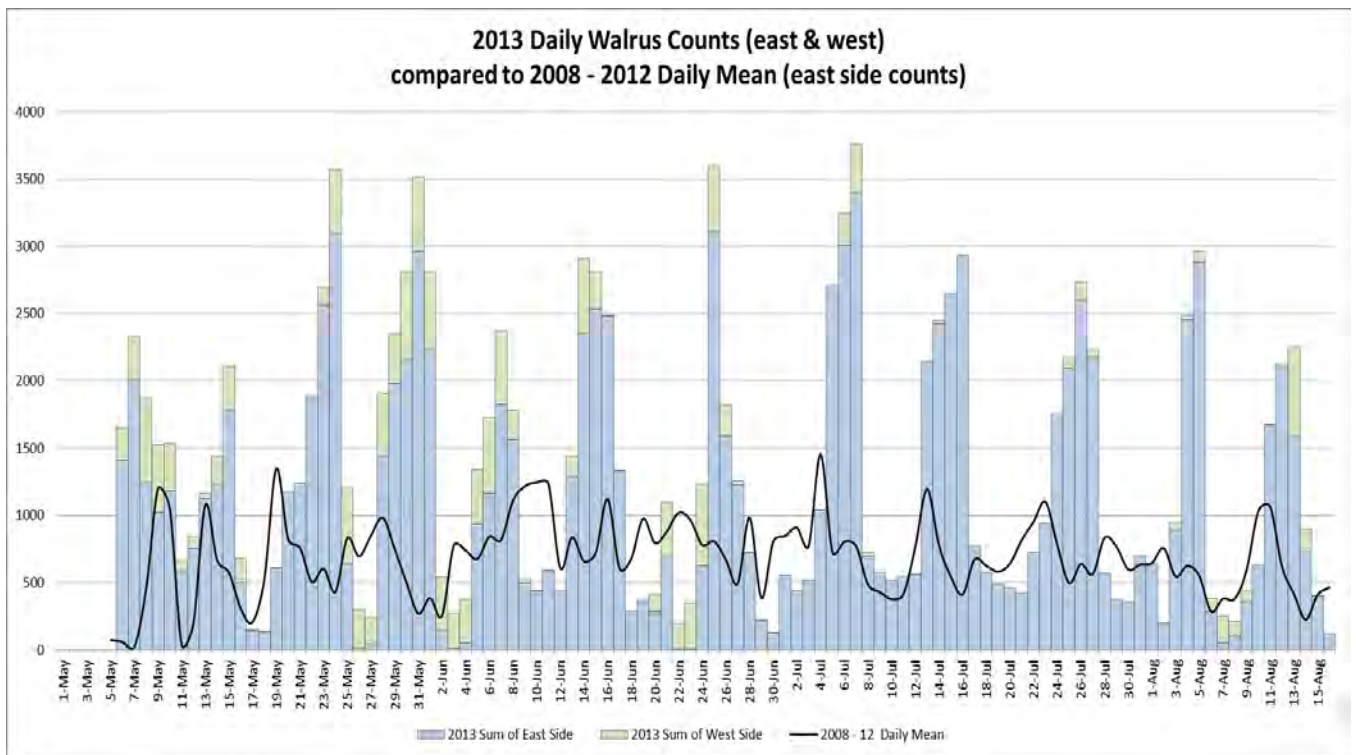


Figure 3. 2013 Pacific walrus hauled out daily at Round Island, compared to 2008 - 2012 means.

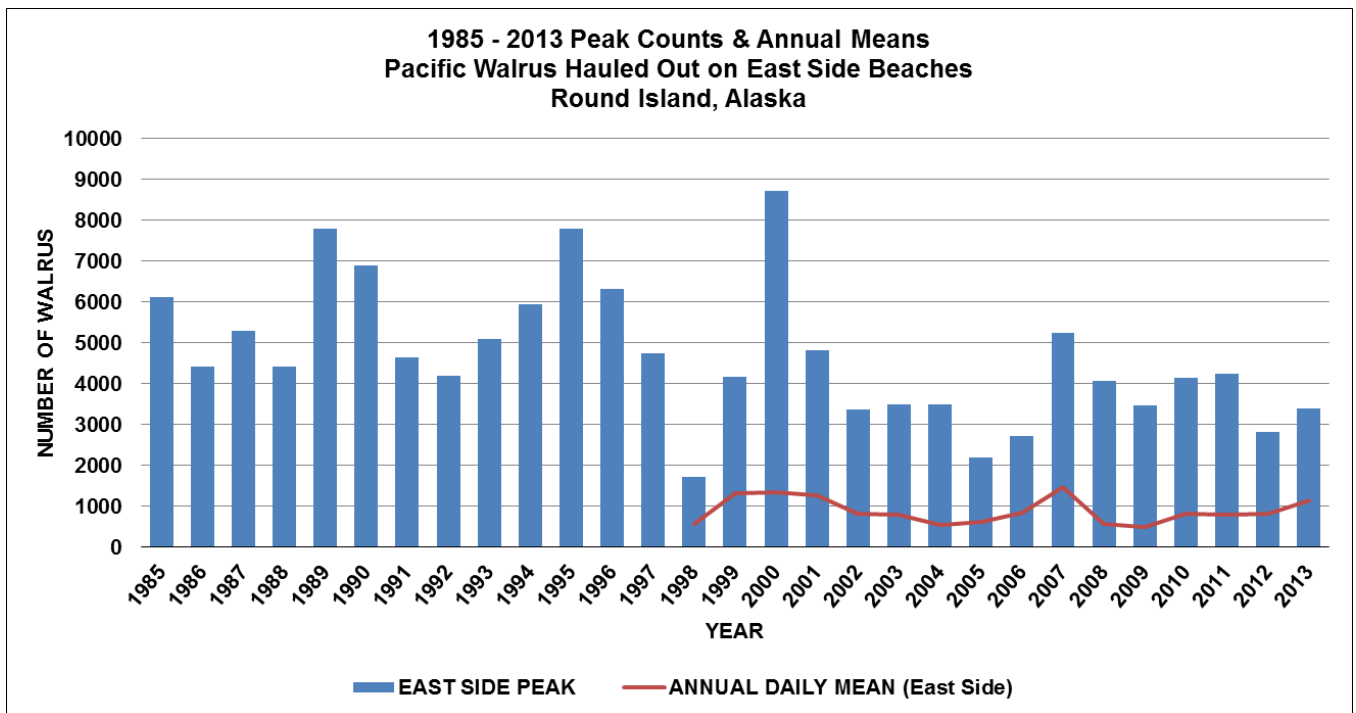


Figure 4. 1985 – 2013 peak and annual mean Pacific walrus counts, Round Island, east side beaches.

Walrus Disturbance Monitoring

ADF&G staff also monitors and documents the response of walrus to both authorized and unauthorized access and other anthropogenic activities around the island. When walrus were in sight of observers, the number of affected animals and the degree of their response, to visitor access or other anthropogenic events, was recorded using three distinct behaviors (head raising, reorienting, and dispersing) as measures of quantifying the levels of disturbance (Salter 1979, Kruse 1997). Responses by walrus at other beaches are unknown. These observations vary and generally range between well documented observations during access or violation events and more opportunistic observations of audible or visible events observed during normal duties or occurring outside three miles. Activities, such as boat arrivals and departures, which had a time greater than an hour apart were counted and documented as two separate events. Anthropogenic events and walrus response records are included in Appendix D.

During the 2013 season, staff made an effort to record all anthropogenic events visually or audibly discernible at Round Island. One hundred and two anthropogenic events were documented, 75 events inside the three nautical mile (NM) restricted area, 22 events (mainly vessel transits) outside three NM and 5 events which were from unknown sources. Dispersal type disturbances occurred during 12 of the 102 events; including all five events with unknown sources.

Commercial access was available in 2013, and there was continued service of authorized vessel approaches to the island. Twenty of the anthropogenic events recorded involved authorized visitor transport boats or staff helicopters approaching or departing the island. These management and visitor operations caused dispersals on two occasions; two walrus from FR during one landing of the Robinson 44 helicopter, and a dispersal of 10 walrus from FB during a departure of the commercial charter boat. Walrus head raises at FR were noted on eight additional occasions. Of the seven dispersal type events from known sources only two resulted in the dispersal of more than 10 animals. On May 15 a small prop plane at medium altitudes dispersed about 300 animals and prompted reorientation or head raises from over a thousand animals on MB. An additional disturbance of 200 walrus occurred on August 11 and was documented on MB by the USFWS camera. It corresponded to the time when the sanctuary skiff attempted to land on an empty WM beach for the purpose of ivory recovery. The walrus located on the end of the MB spit dispersed into the water, while all others remained on the beach. So it's likely that staff skiff operations were the cause.

Twenty of the twenty-two events observed outside the 3 NM were from larger vessels (tenders, processors, tug/barge combos). Walrus observations at select beaches were available for each of these events; and no disturbances were noted.

Five dispersal events were from unknown sources with three of these dispersals involving more than 20 animals. Unknown causes disturbed 200 and 75 walrus from MB on June 17 and July 03, respectively. Rock falls or heavy rain may have been possible causes. On July 25, 80 walrus were viewed from the sanctuary skiff dispersing from WM. The small boat was idling about a mile from WM when the animals dispersed and it was unknown if engine noise was the cause of the disturbance.

Steller Sea Lion Monitoring

Steller sea lion (SSL) typically haul out at East Cape (EC), located on the eastern tip of Round Island. SSL counts are conducted from four viewpoints (V1, V2, V3 and V4) at EC following protocols established by the ADF&G Division of Wildlife Conservation Marine Mammals Program. SSL numbers are recorded, visible brands photographed and injuries, entanglements, suckling behavior, and any unusual conditions are photographed and noted. Data is compiled with other ADF&G Marine Mammal program data and forwarded to the National Marine Fisheries Service National Marine Mammal Laboratory (NMFS NMML). Count data are presented in Figure 5 and Figure 6. Count and brand resight details are contained in Appendix E.

During the May 06 through August 16, 2013 monitoring season 102 of a possible 103 land counts were conducted. The mean number of SSL present on Round Island was 160; the maximum count of 418 sea lions occurred on May 23 and the minimum count of 10 occurred on June 22. The 2013 mean is about a 16% decrease from the 2012 mean of 190 and above the five year (2008 to 2012) average of the annual means of 157. Figure 5 shows the daily number of SSL present at the EC haulout during 2013 compared to the daily mean for the past five years, 2008 to 2012. Figure 6 shows the annual mean number of SSL present on Round Island between 1999 and 2013. A viewpoint change implemented towards the end of 2008 has increased visibility of the whole haul-out, however, inhibits the ability to make direct comparisons of historical means.

During 2013, 315 photo-confirmed sightings of brands were recorded at EC, representing 40 individuals. These brands originated from four natal rookeries where branding occurred, as compared to three branding locations during the 2012 season. In 2013, 31 of the brand re-sights originated from Ugamak Island in the eastern Aleutians (A brands), four from Sugarloaf Island in the Barren Islands near Kodiak, Alaska (X brand), three from Marmot Island near Kodiak, Alaska (T brand), and two from Medny Island in Russia (M brand). The majority of the branded animals (27) were juvenile and sub-adult males (2-8 years old). The remaining animals were adult males (4), adult females (6), juvenile females (2), and one juvenile of unknown sex.

Two SSLs were seen entangled in marine debris. One animal, seen on multiple occasions between May 20 and May 25, had what appeared to be a white plastic band tightly encircling its head over its ears. A sea lion(s) was observed with scarring around the neck on July 07 and on August 15. It appeared that the entanglement had broken loose from the animal. Brand A745, a two year old male, was seen suckling May 07 – May 09 and again on June 27 and July 05.

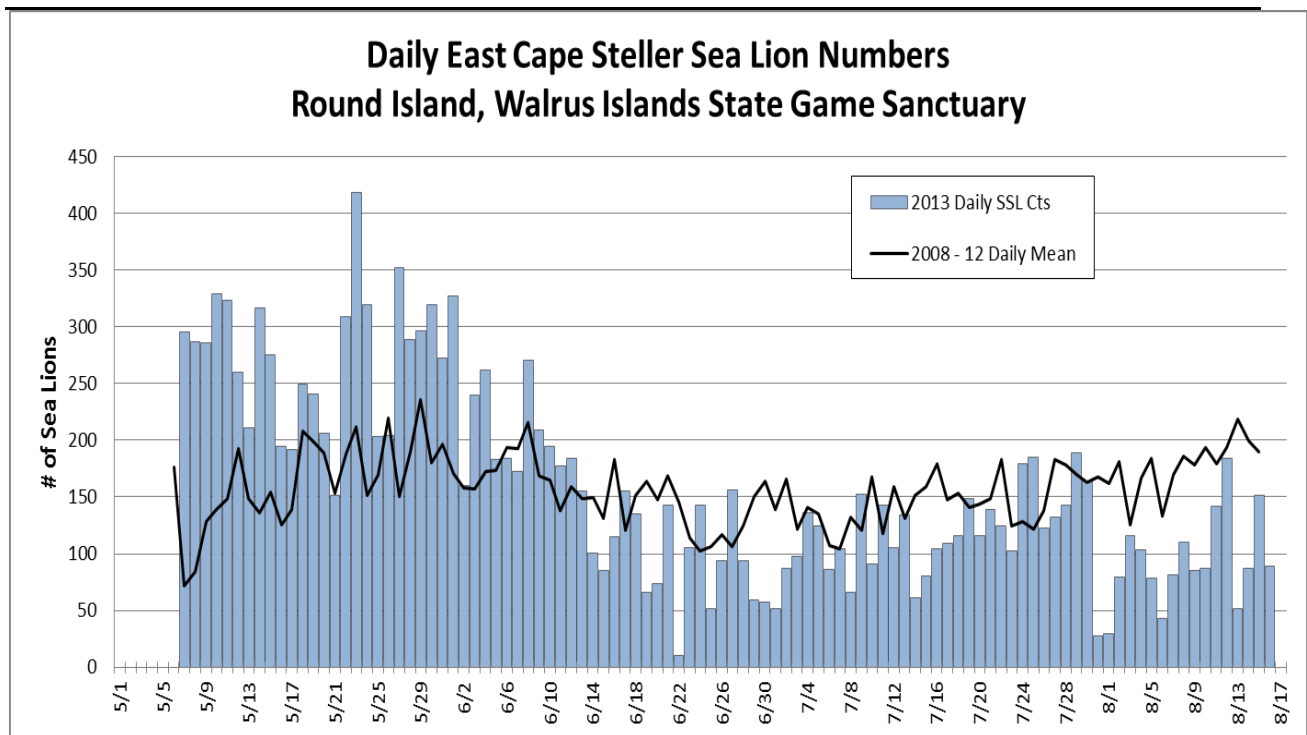


Figure 5. 2013 Steller sea lions hauled out at East Cape, Round Island; daily numbers compared to 2008 – 2012 daily mean. (*Data prior to 2009 may be underrepresented. A new viewpoint established during the 2008 season allows better visibility and more complete counts of the whole haulout.)

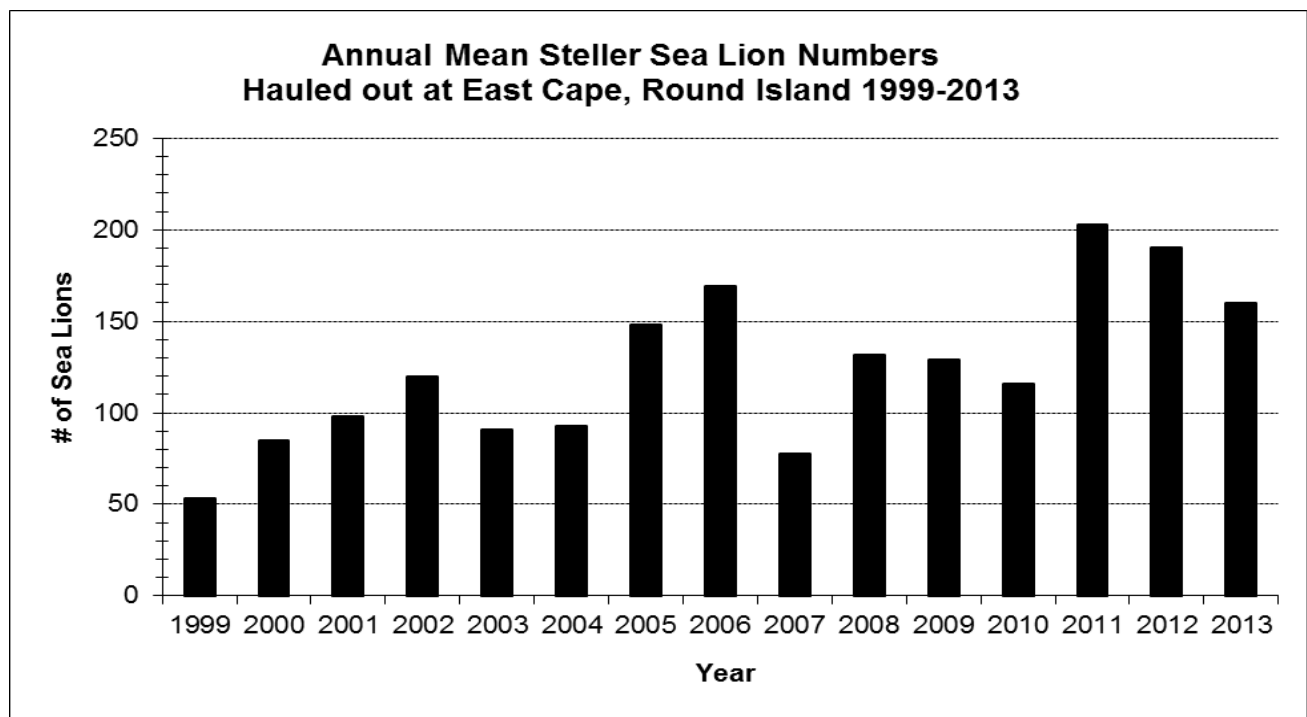


Figure 6. 1999-2013 Mean number of Steller sea lions hauled out at East Cape, Round Island. (*Data prior to 2009 may be underrepresented. A new viewpoint established during the 2008 season allows better visibility and more complete counts of the whole haulout.)

Seabird Monitoring

Three species of colonial nesting seabirds were monitored throughout the summer at four sites on Round Island. Nesting chronology and nest productivity data were collected for the following species; pelagic cormorants (*Phalacrocorax pelagicus*; PECO) at SB, First Prime (FP) and near First Beach (FB); black-legged kittiwakes (*Rissa tridactyla*; BLKI) on Plots 2 and 3 at OP; and common murre (*Uria aalge*; COMU) on Plots 1, 2, and 4 at OP. Population index counts for all three species were also conducted on Plots 1 - 5 at OP. Phenology and productivity data for all three species for years 2008 to 2013 are summarized in Table 1. Seabird population and productivity monitoring data are provided to Don Dragoo at the USFWS Maritime National Wildlife Refuge for inclusion in the USFWS's statewide seabird-monitoring program.

Overall, BLKI productivity on the Round Island plots during 2013 was slightly lower than the five year productivity mean, while COMU and PECO productivity were both higher than the five year productivity mean. Details on productivity and phenology for each species are provided below.

PELAGIC CORMORANT PRODUCTIVITY MONITORING

PECO returned to Round Island about May 03, 2013 as evidenced by the USFWS camera overlooking MB. Adults were present on the island at the time of staff arrival on May 06 and had already begun establishing nest sites. PECO productivity monitoring was conducted from May 14 through August 15, 2013. Of the four locations historically monitored (SP, SB, First Beach North (FBN) & First Beach South (FBS)), PECO nesting was observed only at SB. Additional sites at First Prime North (FPN), First Prime South (FPS), and a site located between FB and the cabin were also observed during the 2013 season with a total of 42 nests initially monitored. Nine nests were monitored at SB; eight at FPS, eleven at FPN, and fourteen at cabin site. Only the nests at FPN and Cabin survived; the eight nests at FPS failed by June 03 and the nine nests at SB failed by June 02. The first PECO egg was observed at FPS, Cabin, FPN, and SB on May 14, 15, 16, and 21, respectively. Collectively an averaged date of May 17 was set for the first egg. The first chicks were observed at FPN and at Cabin on June 13. In all, 22 nests fledged chicks, with 46 fledglings in total. Productivity for PECO in 2013 was 1.33 chicks/nest (Table 1) compared to 1.93 chicks/nest in 2012 and a previous five year average of 1.14 chicks/nest. Complete productivity observations for PECO plot(s) are presented in Appendix F.

BLACK-LEGGED KITTIWAKE PRODUCTIVITY MONITORING

BLKI returned to Round Island about April 19, 2013 as evidenced by the remote cameras overlooking MB and EC. BLKI productivity monitoring was conducted from June 04 through August 15, 2013 on Plots 2 & 3 at OP. The first day that eggs were observed was June 04 at both OP2 and OP3. Nests were continually added to the plots as eggs were laid, resulting in 50 nests monitored; 25 on OP2 and 25 on OP3. The first chicks were observed at OP2 on June 28 and at OP3 on June 30, for an averaged first chick date of June 29. The maximum chick count was 32 on July 04 with 9 chicks surviving to fledge from both plots. Productivity for BLKIs in 2013 was 0.18 chicks/nest (Table 1) compared to 0.09 chicks/nest in 2012 and a previous five year average of 0.25 chicks/nest. Complete productivity observations for BLKI plot(s) are presented in Appendix G.

Table 1. 2008 - 2013 Seabird Phenology and Productivity Summary, Round Island, AK

	2013	2012	2011	2010	2009	2008	
	#	#	#	#	#	#	
LACK LEGGED KITTIWAKES	BLKI	#	#	#	#	#	
	Nests or pairs	50	54	53	50	51	48
	Eggs laid	95	78	89	86	84	71
	Chicks hatched	41	30	51	53	32	35
	# Nests that fledged chicks	9	5	15	21	0	21
	Chicks fledged	9	5	15	21	0	21
	Productivity (chicks/nests)	0.18	0.09	0.28	0.42	0.00	0.44
	Mean Clutch Size	1.9	1.4	1.7	1.7	1.6	1.5
		%	%	%	%	%	%
	Laying Success	--	--	--	--	--	--
	Hatching Success	43	38	57	62	38	49
	Fledging Success	22	17	29	40	0	60
	Reproductive Success	9	6	17	24	0	30
	Nesting success	18	9	28	42	0	44
	Date of 1st egg	6/4	6/2	5/30	5/29	6/6	6/5
	Date of 1st chick	6/28	6/29	6/27	6/23	7/1	6/29
Max chick count	32	30	51	52	33	30	
Date of max chick count	7/4	7/7	7/2	6/30	7/10	7/15	
COMMON MURRE	COMU	#	#	#	#	#	
	Nests or pairs	70	30	67	59	46	52
	Eggs laid	70	30	67	59	46	52
	Chicks hatched	22	3	14	12	1	42
	# Nests that fledged chicks	19	3	7	3	0	28
	Chicks fledged	19	3	7	3	0	28
	Productivity (chicks/nests)	0.27	0.10	0.10	0.05	0.00	0.54
	Mean Clutch Size	1.0	1.0	1.0	1.0	1.0	1.0
		%	%	%	%	%	%
	Laying Success	--	--	--	--	--	--
	Hatching Success	31	10	21	20	2	81
	Fledging Success	86	100	50	25	0	67
	Reproductive Success	27	10	10	5	0	54
	Nesting success	27	10	10	5	0	54
	Date of 1st egg	6/14	6/16	6/8	6/14	6/14	6/16
	Date of 1st chick	7/16	7/20	7/16	7/17	7/20	7/19
Max chick count	15	3	14	12	1	39	
Date of max chick count	7/27	7/20	7/20	7/21	7/20	8/1	
PELAGIC CORMORANT	PECO	#	#	#	#	#	
	Nests or pairs	42	15	16	17	37	59
	Eggs laid	121	42	45	47	114	174
	Chicks hatched	56	31	18	3	81	129
	# Nests that fledged chicks	22	13	3	0	26	39
	Chicks fledged	56	29	8	0	60	96
	Productivity (chicks/nests)	1.33	1.93	0.50	0.00	1.62	1.63
	Mean Clutch Size	2.9	2.8	2.8	2.8	3.1	2.9
		%	%	%	%	%	%
	Laying Success	--	--	--	--	--	--
	Hatching Success	46	74	40	6	71	74
	Fledging Success	100	94	44	0	74	74
	Reproductive Success	46	69	18	0	53	55
	Nesting success	52	87	19	0	70	66
	Date of 1st egg	5/17	5/24	5/25	5/11	5/23	5/18
	Date of 1st chick	6/13	6/26	6/24	6/14	6/20	6/19
Max chick count	56	31	18	3	81	105	
Date of max chick count	7/19	7/17	7/10	6/20	7/18	7/20	
<i>Mean Clutch Size = eggs / nests with eggs</i>			<i>Fledging Success = % chicks hatched that fledge</i>				
<i>Laying Success = % nests w ≥ 1 egg</i>			<i>Reproductive Success = % eggs laid that fledge</i>				
<i>Hatching Success = % eggs laid that hatch</i>			<i>Nesting Success = % nests where ≥ 1 chick fledges</i>				

COMMON MURRE PRODUCTIVITY MONITORING

COMU productivity monitoring was conducted from June 14 through August 15, 2013 on Plots 1, 2, and 4 at OP. A total of 70 nest sites were monitored at OP1 (n=20), OP2 (n=25), and OP4 (n=25). The date of first egg sightings was June 14 at OP2 & OP4 and June 15 at OP1. All 20 nests monitored at OP1 were preyed upon and failed by July 18, before any chicks hatched. The first COMU chick was observed at OP2 on July 16, and observed at OP4 on July 17. The maximum number of chicks that were observed at OP2 was eight on July 22 and eight on OP4 on July 29. Of the 22 chicks that hatched, 19 survived to fledge (chicks older than 15 days were assumed to have fledged). Productivity rates were 0.27 chicks/nest, which was above the 2012 and five year average productivity of 0.10 and 0.16 chicks/nest, respectively. Phenology and productivity data are summarized in Table 1. Complete productivity observations for COMU plot(s) are presented in Appendix H.

We do not believe that productivity on these OP plots is representative of the PECO, BLKI, or COMU population island wide due to the location of our plots being on the fringe of the colonies. Predation by fox and ravens is regularly observed on these plots and they are believed to be more vulnerable to predation than other parts of the colony. Over the years staffs have noticed that there appear to be more chicks observed on the steeper and less accessible cliffs around the island, however, with the number of fox and ravens regularly observed with eggs or chicks it is difficult to speculate on the population success as a whole.

POPULATION COUNTS

Eleven population index counts of the five OP plots were conducted for BLKI and COMU, between June 15 and July 15 as weather permitted. All population index counts began after the observation of the first COMU egg. On average there were 268 BLKI, 223 BLKI nests, and 749 COMU across all plots, (standard deviation; 30, 24, and 171 respectively). Complete population counts for BLKI, BLKI nests, and COMU plot(s) are presented in Appendix I.

Other Observations

During the monitoring season ADF&G staff also record general and unusual observations, which include, but are not limited to; wildlife and blooming plant sightings, the presence of beach cast-marine mammals, weather and general environmental conditions. Daily observations for the 2013 season are summarized in Appendix J.

A Davis weather station and data logger at the cabin are used to capture basic weather data (temperature min/max, precipitation, wind speed & direction, barometric pressure) at ten minute intervals. Daily weather data, and additional environmental conditions such as tides, storms, wind and wave state, are recorded daily with walrus monitoring surveys. Intended for use in correlating walrus numbers to this data, it also serves to provide a summary of daily weather conditions on Round Island.

WEATHER

The Davis weather station was unable to collect complete data through the winter because the batteries were run down. Additional data *downloading* problems, due to needed Davis software updates, resulted in a loss of complete electronic data between May 6 and June 11. Daily minimum & maximum temperatures, precipitation, winds, barometer and cloud cover recorded manually in conjunction with walrus and Steller sea lion surveys along with surviving electronic data will be archived into the Round Island database.

A summary of minimum & maximum temperatures, precipitation and cloud cover for the period 2008 to 2013 is provided in Table 2, below. Daily weather data as recorded during surveys for 2013 is presented in Appendix K.

Table 2. 2008 – 2013 Weather Summary, Round Island, Alaska.

		2013	2012	2011	2010	2009	2008
Average Temp (max/min)	May	46/37	49/40	46/39	48 / 37	54 / 39	49 / 34
	June	58/49	54/43	47/42*	52 / 43	52 / 43	54 / 40
	July	59/51	52/45	53/42*	52 / 45	57 / 50	57 / 43
	Aug	56/52	55/49	52/46	51 / 47	57 / 53	69 / 48
# days with precip		19	26	37	28	15	18
# days <25% overcast		49	17	9	9	21	15
# days >50% overcast		45	83	78	73	55	64

* Indicates 6-13 days of data were not recorded.

MARINE MAMMALS

Gray whales (*Eschrichtius robustus*) were observed passing the island on their migration north May 06 through May 19. Gray whales are typically observed along the eastern shores of Round Island in late April through mid to late May. For a couple of days, Gray whales fed quite close to shore in front of the cabin. On one occasion, May 09, the Gray whales spent some time breaching, slapping, and interacting on the surface with Steller sea lions east of the cabin.

A spotted seal (*Phoca largha*) carcass in advanced decomposition was found with evidence of entanglement at MB on June 18. Photos were taken but no samples were taken. A spotted seal, or harbor seal (*Phoca vitulina*), pup hauled out for one tide cycle near CG on June 04.

TERRESTRIAL MAMMALS

Conservative estimates of 14 to 16 different red fox (*Vulpes vulpes*) were identified along the trail system during 2013. At least nine fox kits were known to be born this season; six to a pair of fox denning around the cabin in camp and another three in the EC area. Fox were viewed preying on both birds and rodents and constructing new dens around the staff cabin.

As observed in the past it was common to observe voles and shrews scurrying through the grass or lying dead on trails at various times throughout the season. Based on prior identifications these were likely tundra voles (*Microtus oeconomus*) and montane “dusky” shrews (*Sorex monticolus*). Unidentified lemmings may also have been observed; however, these have not been positively identified and may just be large tundra voles.

BIRDS

One bird species previously undocumented at Round Island was observed in 2013. A vagrant common cuckoo (*Cuculus canorus*), was observed and photographed along the traverse trail out to WM. A list of accidental birds reported include a northern shoveler (*Anas clypeata*) on May 8; short billed dowitcher (*Limnodromus griseus*) on May 17, dunlin (*Calidris alpina*) on May 17, horned grebe (*Podiceps auritus*) on May 20, osprey (*Pandion haliaetus*) on June 04, and peregrine falcon (*Falco peregrinus*) on July 17. A Pacific loon (*Gavia pacifica*) was observed diving for fish off of EC on July 11. A Steller sea lion playfully chased the loon when it resurfaced close to a group of sea lions. The loon continued fishing in the area alongside other diving seabirds after the interaction with the Steller sea lion.

REMOTE CAMERA OBSERVATIONS

The USFWS Togiak National Wildlife Refuge supplied a Reconyx camera to overlook the MB haulout beginning August 2011. The intent was to gather additional information on walrus presence and numbers at Round Island during fall and winter when ADF&G staffs are not present on the island. Staff moved the location of the camera June 4, 2012, from above OP to a site closer to MB along the Traverse Trail. Photo data (Aug 2011 through Sept 2012) was downloaded provided to the USFWS and reviewed for effectiveness. Due to the distance, picture quality from both locations does not allow for detailed counting of the herd with the existing cameras. In order to get photos of a quality suitable for providing detailed counts it may be necessary to place cameras at multiple locations closer to the haulout or obtain cameras capable of higher resolution images. The USFWS camera was removed on August 15 and returned along with the camera housing, pole, and anchors to the USFWS on August 17. An ADF&G Reconyx camera was positioned closer to MB and photos from this camera will be reviewed for effectiveness in the spring of 2014.

In addition, the ASLC had cameras connected with their ongoing Pacific Walrus Haulout Use & Disturbance project. A single ASLC camera was also used to monitor WM between October 2012 and May 2013. ASLC researchers Terril Efir and James Mitchell were on island May 07 through 10 to setup cameras at the FB and WM viewpoints, which collected data May 5 - August 15 and June 10 – August 15, respectively. These cameras were positioned onto the respective beaches as well as pointing out to sea in order to capture potential sources of disturbances. In addition, a Bioacoustics Monitoring Systems Song Meter device was placed on FB in order to measure audible sources of disturbances. ADF&G staff periodically checked the cameras, cleaned lenses, changed batteries, and replaced data storage cards. The Reconyx cameras worked effectively capturing photo data of both WM and FB. These remote monitoring devices allowed ADF&G staff to acquire walrus numbers for WM on days where weather prohibited travel to that side of the island, allowing for complete coverage of east side beaches and WM

through the season. Photos from FB were also reviewed for disturbances that correlated with known anthropogenic events recorded by staff. Alaska SeaLife Center staffs are fully analyzing the photo data in relation to their multi-year Pacific Walrus Haulout Use & Disturbance study and results are pending.

Review of photos from both these sources as well as ADF&G cameras provided a wealth of information that complements and fills out the normal ADF&G Pacific walrus, marine seabird and Steller Sea Lion monitoring.

In addition to pertinent observations noted in other sections of this report a few other relevant observations include:

Bad weather obscured viewing in early – mid September, however, the majority of seabirds (BLKI, COMU, and PECO) appeared to have left the island by September 13, 2012. Returning BLKI were first noted in photos on April 21, 2013.

Pacific walrus used the MB haulout at least through October 23 in 2012; returning April 16 – 19, 2013 and hauling out in large numbers along the length of MB beginning April 19th.

The first pack ice moved into the area at the end of November and aside from periodic shifting and clearing was present through April 14, 2013. Significant amounts of shore fast ice were present along MB through April 18, 2013 with isolated pockets persisting into early May.

Steller sea lions were present at East Cape every month of the year. While largely not seen in camera views mid-February through the end of March 2013; one was noted 7 March. It is suspected Steller sea lions are present at Round Island year round but using areas out of view of the cameras during this period.

Additional cameras were placed at several sites around the island for winter monitoring 2013 to 2014.

OTHER PORTIONS OF WISGS

No staff visits were made to the other islands within the Sanctuary this season and no other reports were received regarding activities elsewhere in the Sanctuary.

Public Use & Land Management

To protect sanctuary wildlife and other resources, access to Round Island and the waters within three geographical miles of the island are restricted. The three mile restriction has been in place since 1989, varying only slightly in the use of nautical versus geographical miles. Three geographic miles is about ten meters more than three nautical miles. Prior to 1989 restrictions applied to Round Island and waters within two miles (5 AAC 83.250, 1985). Visitors and transporters must possess authorization from ADF&G in the form of a Sanctuary Access Permit for the day(s) they plan to visit Round Island (Alaska State Regulation – 5AAC 92.066). All vessels approaching the island must contact ADF&G Round Island staff via marine radio

(MVHF Ch. 7) prior to 9:00 a.m. on the day of their visit and again prior to entering the restricted three mile area. Once in the area they are required to maintain a course through a designated access corridor to Boat Cove on the northeast side of the island (Figure 7). Since low-flying aircraft can cause major disturbances at walrus haulouts (Fay 1982), all aircraft access to the island is prohibited unless authorized by ADF&G. ADF&G policy requests that all pilots avoid over flights below 5,000 ft. Above Ground Level (AGL) within three miles of the island. Notices regarding these access restrictions are published as a flight advisory on Federal Aviation Administration charts and as an advisory on the National Oceanic and Atmospheric Administration (NOAA) nautical charts. Although ADF&G does not have the authority to regulate airspace, pilots who cause a disturbance can be prosecuted by the USFWS under the Marine Mammals Protection Act (MMPA) for harassment of walrus. All vessel or plane traffic observed within the restricted area is documented and those without authorization are hailed through VHF marine radio or by avionics radio and notified of restrictions and advisories. Violations are reported to appropriate authorities for investigation and prosecution.

Visitor Use

Campers arrive on Round Island after obtaining a permit through the ADF&G website or from the ADF&G Dillingham office. Day visitors are issued permits for \$10.00 per person upon arrival on the island after obtaining access authorization from staff through morning VHF radio contact.

One of the primary goals of the sanctuary staff in managing the visitor program is to balance the quality of the experience for the visitors while protecting wildlife and other resources. When visitors arrive on Round Island, they are given an orientation that includes the visitation regulations and policies, a brief history of the Sanctuary, a safety briefing and a demonstration on how to approach walrus viewpoints without disturbing the animals. All visitors are required to remain on established trails with the exception of going to the summit from EC. To avoid disturbance, visitors are not permitted on the beaches except for staff monitored arrivals and departures from BC or CG. As part of the safety briefing the precipitous and slippery nature of the trails is stressed and visitors are required to sign an Assumption of Risk form. Visitors are also requested to provide emergency contact information in the case of an accident. Staff duties associated with the visitor program include monitoring the VHF marine radio, authorizing access to sanctuary waters, issuing permits, collecting user fees, reviewing sanctuary rules and safety procedures, answering visitor questions, maintaining campground facilities, collecting visitor use data and providing assistance to visitors when needed.

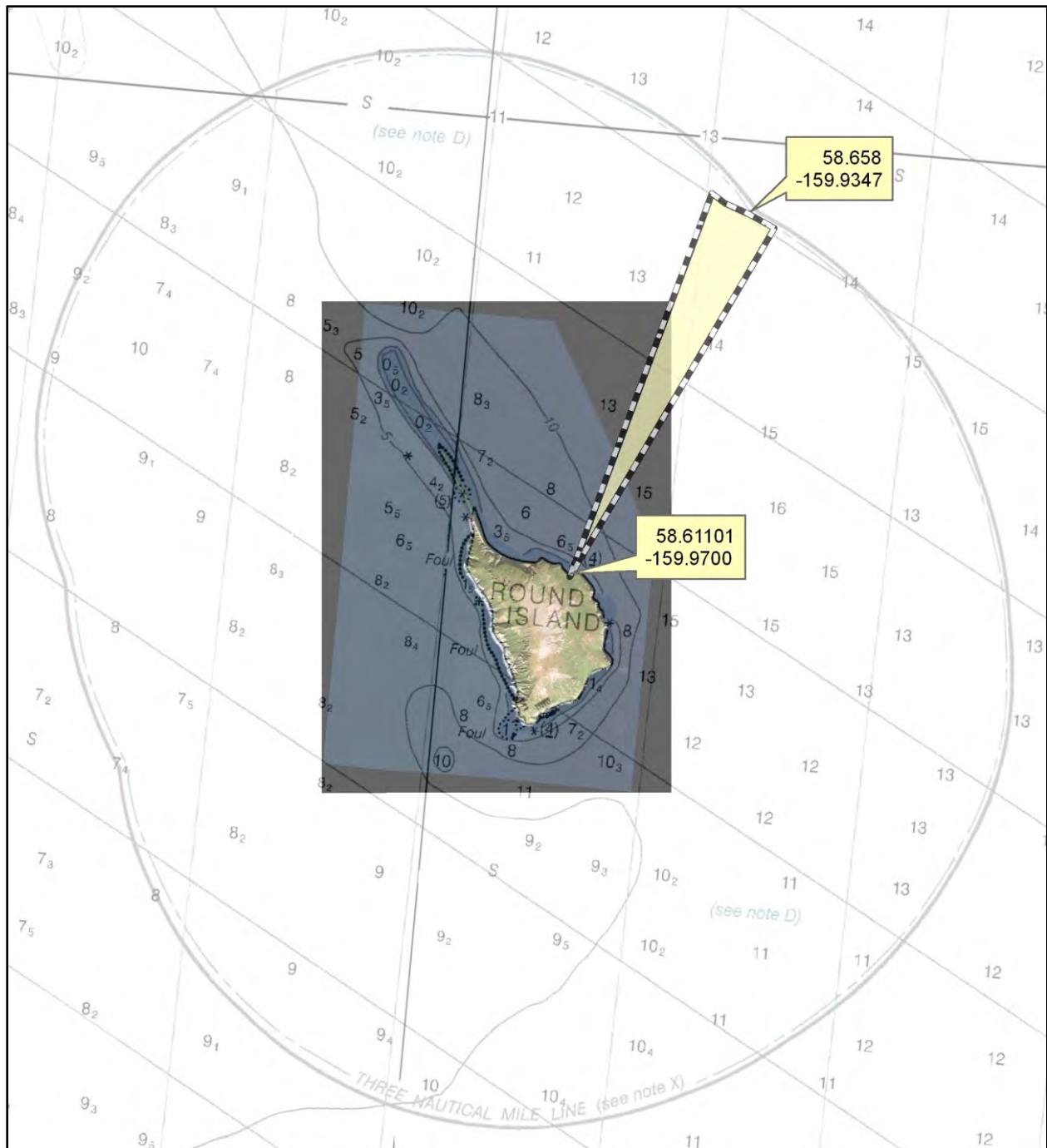


Figure 7. Round Island, Walrus Islands SGS showing 3 NM restricted waters and access corridor.

Visitor use data for the 2013 season are summarized in Table 3. The availability of commercial transport provided by Togiak Outfitters throughout the summer allowed for opportunity of campers and guided day visitation during the 2013 season, although most visitors were independent day visitors. There were a total of 48 visitors to Round Island in 2013, including visits by 6 persons involved in administrative duties (staff, maintenance, management or training). Of the 42 general public visitors; 5 were overnight campers and 37 were day visitors.

Public visitors represented 10 individual groups with a mean group size of 4 (range: 2 to 13). Twenty-one visitors were Alaska residents, the remainder hailed from California, Oregon, Texas, Utah, Vermont, Washington, Canada, Germany, and Switzerland.

There were 60 visitor use days and 232 staff use days for a total of 292 user days between May 06 and August 16. Public visitor use days were split between 23 camper user days and 37 day use days. The average length of stay for the 5 campers was 4.6 days.

Historically, visitation to Round Island has been variable (Figure 8). Fluctuations in visitation are generally attributed to a number of social and economic factors including the availability of transportation to the island, national and international economic conditions, periods of opportunistic day visitation, and national and international publicity.

A record number of visitors (303) to Round Island occurred in 1977. However, the inflated visitation that year was due to the approximately 250 day visitors from a small cruise ship. In the 1980s and early 90s, many members of the herring fishing fleet visited Round Island opportunistically during breaks in the fishery. Also during this time, there was national and international publicity of the sanctuary through television programs and magazine articles (Rice 2002). In 1987 a record number of 131 campers visited the island and the number of campers to the island remained high during the late 1980s and early 1990s. After the decline of the fishery in Bristol Bay, a drop in visitation was noted. Visitation generally declined between 1990 (110 campers, 58 day use) and 2004 (19 campers, 55 day use). Between 2005 and 2007, visitation to Round Island rose slightly, and then dipped again from 2008 to 2011 due to complications with commercial transport charters.

Table 3. 2013 Visitor Use Summary, Round Island, WISGS. Alaska.

State	Visitor Numbers				User Days			
	Admin	Campers	Day Use	Total	Admin	Campers	Day Use	Total
AK	6	2	19	27	232	14	19	265
CA			1	1			1	1
Canada			1	1			1	1
Germany			2	2			2	2
OR			1	1			1	1
Switzerland			5	5			5	5
UT		3		3		9		9
VT			1	1			1	1
WA			7	7			7	7
Grand Total	6	5	37	48	232	23	37	292

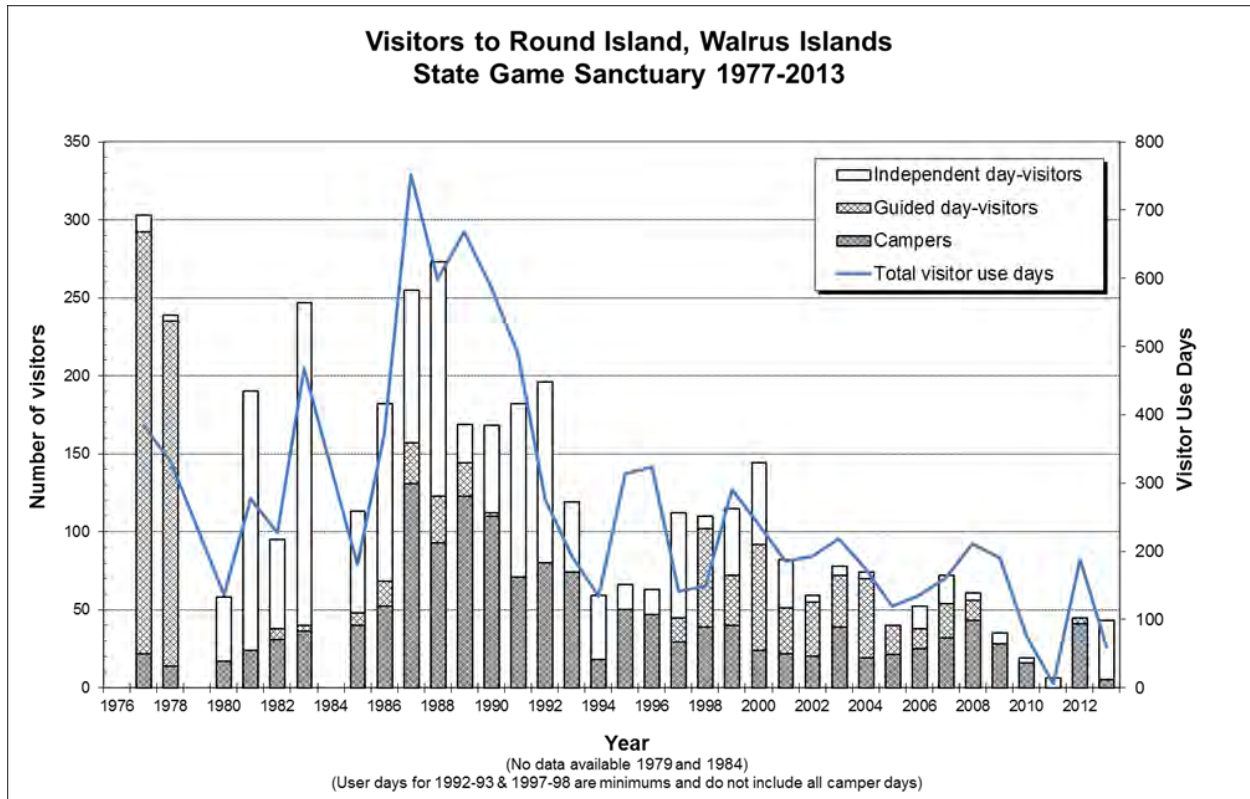


Figure 8. Visitor Use at Round Island, 1977 – 2013.

Access Violations

Staff documented vessels within the three mile restricted zone on two separate occasions during the 2013 season. On all three occasions the vessels were noted passing by the east side of Round Island at about 2 miles distance and were hailed by staff on marine VHF Ch16. On June 12, 2013 a 18 foot Lund skiff with two individuals passed by the island at about two miles distance and continued on around EC toward the west side of the island. The occupants were unsuccessfully hailed and investigation and identification of responsible parties through vessel identification numbers was unsuccessful. During a July 10, 2013 incident, a tug and barge also transited the east side of Round Island at 2 miles distance. Several attempts to raise the vessel on the radio were unsuccessful. Photographic, radar documentation and follow-up investigation led to informational warning being issued to the registered owner. No walrus were known to be disturbed during these incursions.

The ADF&G installed a Garmin GMR18HD radar and GPSMAP 740 series chart plotter system in June of the 2011 season to aid staff in giving proactive warnings to vessels approaching the three mile limit and to gather and present sound evidence when violations do occur. When redeployed in spring 2012 radome errors were encountered which were associated with a known manufacturing defect necessitating return of the radome unit to the manufacturer for warranty replacement. Consequently the radar system was not active for the majority of the 2012 season. The new radome was redeployed in spring 2013, and was successfully used throughout the season to locate vessels passing Round Island. The radar system is proving to be a useful

enforcement tool as well as improving accuracy of anthropogenic events and disturbance data collection.

Subsistence Hunt

Historically, the Pacific walrus has thrived in the Bering and Chukchi seas (Fay1982). In the 17th century there was an increased demand for walrus ivory, oil, and hides, which corresponded to the arrival of the Europeans. Walruses were hunted extensively until the end of the 19th century when only a fraction of the population remained (Fay 1957).

Round (Qayassiq) Island was a traditional walrus hunting ground for Alaskan Natives and in the early 1990's hunters, mainly from the village of Togiak, petitioned the Alaska Board of Game (BOG) for access to the island for subsistence hunting. This resulted in the formation of the Qayassiq Walrus Commission (QWC) in 1995, which helped to reestablish the Round Island subsistence hunt. The BOG agreed to allow island access between October 1 and 31 for the hunt. The harvest limit was set at ten (including struck and lost animals) by the Cooperative Agreement (ADF&G, Eskimo Walrus Commission (EWC), QWC, and USFWS). Since this time the dates and harvest numbers have changed and in 2003, the BOG extended the dates which are now set from September 10 through October 20 with a limit of 20 walrus. (Subsistence Walrus Hunting on Round Island, Bristol Bay, Alaska Cooperative Agreement). The fall hunt has been intermittently monitored by USFWS & ADF&G staff over the years. State and Federal agencies monitored the hunt from 1995 – 1998 and 2003-2006 but at the present time no agency monitor is required. Currently agencies rely on self-monitoring and reporting by hunt captains and the QWC.

Round Island Hunt Access Permit forms were distributed for the 2013 Qayassiq subsistence hunt at the September 5th Qayassiq Walrus Commission pre-hunt meeting in Dillingham, Alaska. Eight permits were distributed to hunt captains of Togiak, Manokotak, Twin Hills and Dillingham. Two villages reported hunting at Qayassiq this year. Togiak successfully harvested 4 walrus on 1 October. Twin Hills attempted to hunt but were unsuccessful; no walrus were present when they arrived at Round Island late in the day on 3 October in diminishing weather. The remaining communities did not complete the permit process, nor notify ADF&G that they would be hunting at Round Island and none filed post hunt reports indicating they had hunted at Round Island.

Sanctuary Administration & Management

Staffing

ADF&G staff was present on Round Island from May 06 through August 17, 2013. Camp supplies were transported from Seward, Alaska to Round Island via the F/V Barwell, owned and operated by Scott Tressler. Gear and supplies were loaded at the Seward dock on April 30, 2013 and delivered to the island May 6. Sanctuary manager Ryan P Morrill (RPM), field technician Benjamin M Histan, and previous sanctuary manager Diane C Okonek (DCO) arrived in Togiak the morning of May 06. RPM and DCO flew out to Round Island via Pollux Aviation R44 helicopter that afternoon; while BMH waited for delayed luggage in Togiak, arriving on the

island on May 07. The optimal arrival date of May 1 was delayed because of the presence of sea ice in Togiak Bay and helicopter and boat availability dictated by the start of the herring fishery. On May 07 the Barwell anchored in front of the cabin and coordinated with the Pollux helicopter pilot, Will Lawrence, to sling load four brailer bags of supplies (2,200 lbs. total) from the boat deck to shore and back haul one brailer bag of construction waste in 45 minutes.

ASLC personnel, James Mitchell and Terril Efird, deployed to Round Island on May 07 to install remote camera systems at select walrus haulouts and departed May 11, 2013 via Pollux R44 helicopter. Lands and Refuges Manager, Ed Weiss, was present 5 – 12 July; for Ben Hestand who was on staff break, and to review operations and assist with maintenance projects. Staff transports and resupplies occurred on July 05 and July 12 by Paul Markoff of Togiak Outfitters Inc. Demobilization of camp and transport of staff off island occurred on August 17 and was also done by Paul Markoff.

Facilities

Round Island staffs perform a number of maintenance, repair or construction projects annually in support of the Round Island facility and visitor safety. This work often includes such things as building and camp maintenance and trail improvements.

The most significant project completed during the 2013 season was completion of the replacement of the boat cable launching system. Installation included: the replacement of the one anchor system on the west side with two new stainless steel plate anchors; a new 350 foot long, ½ inch diameter wire rope; replacement of the single cable loop anchor on the north side with two independent cable loops anchored higher up around the existing anchor site; and a new chain hoist was added. The new double anchors on both sides distribute the load more and provide a back-up anchor in case one fails. The project was completed by 15 July and boat deployment was successful on a number of occasions following that.

Finish items on the composting toilet system constructed in 2012 were completed in 2013. Monitoring and maintenance of the system began with AM/PM temperature readings, amp charge/draw readings, and maintenance notes.

Staff continued making improvements to problem areas on the Round Island trail system. During 2013 approximately 15 feet of Geoblock and new wood were added to bad spots along the trail system in the BC, OP, and SP areas. The tool shed and campground outhouse were also raised and leveled to correct for settling into the ground. Geoblock was also added below the raised and leveled bases as foundation support.

Ivory Collection

Nine complete tusks and eight pieces of broken ivory were recovered during the 2013 season. These pieces were collected from two mortalities and beach cast ivory found along WM, MB, NBC, FR, FB, and SB. Five other mortalities were noted ashore at MB and WM; however, staffs were unable to access these mortalities and collect any ivory before the mortalities were washed out to sea. Observed mortalities and ivory collected are summarized in Table 4.

Collected ivory was transferred to Michael Winfree, USFWS Wildlife Biologist in Dillingham for tagging. The walrus ivory collected from Round Island will be donated to the Eskimo Walrus Commission, for the annual ivory auction to local area native carvers during the Beaver Roundup Festival.

Table 4. Summary of Observed Walrus Mortalities and Recovered Ivory, Round Island, AK, 2013.

Date	Location	Mortalities Observed	# of tusks ivory present	Beach Cast Ivory	Amount Collected	Comments
5/8	MB	1	2	0	0	boat not in water, carcass not with group, located half way down beach, too high chance of disturbance not retrieved
5/13	MB	1	2	0	0	same mort as 5/8; observed two tusks intact
6/1	FB	1	2	0	0	no action, too high a chance of disturbance, around 100 walrus on beach
6/2	FB	0	2	0	2	no disturbance to 5 walrus on FB, body wedged face down in rocks, cut off head
6/18	MB	1	unk	0	0	apparent mortality; not moving, face down shallow water, surrounded by bloody water
6/18	MB	0	0	3	3	walked along beach at low tide, no walrus present, also found oosik
6/27	WM	2	4	0	0	two morts on WM; one extremely decomposed, one normally bloated
7/20	WM	1	2	1	1	took boat to WM, MORT too close to cliffs with nesting murres and kittiwakes
7/28	MB	0	0	1	1	walked along beach at low tide, walrus positioned near point
7/29	NBC	1	2	0	2	beached mort, highly decomposed
7/30	FR	0	0	1	1	broken piece in crack, no walrus present
8/2	SB	0	0	2	2	small broken pieces, no walrus present
8/7	MB	1	2	0	0	new mort on MB with 1 full tusk, one broken nub
8/8	FB	0	0	3	3	3 small pieces of beach cast ivory on FB no walrus present

Acknowledgements

Thanks are extended to Diane Okonek, former Round Island manager, for her hard work and assistance in training the new technicians for the 2013 season. Thanks to Eunice Dyasuk (ADF&G-DWC) in the Dillingham office for continued support in the Round Island program. Thanks go to Paul Leidberg and Pete Abraham of the USFWS Togiak National Wildlife Refuge for welcoming staff and volunteers at the bunkhouse in Togiak. To Michael Winfree (USFWS), Lori Polasek and Terril Efirid, James Mitchell (ASLC) for allowing us to make use of their photo data. Patti Harper (ADF&G-DWC) provided formatting and editing changes.

Literature Cited

- Fay, F. H. 1957. History and present status of the Pacific walrus population. Transactions of North American Wildlife Conference 22:431-443.
- Fay, F. H. 1982. Ecology and biology of the Pacific Walrus, *Odobenus rosmarus divergens illiger*. North American Fauna no. 74. U.S. Dept. of the Interior, USFWS, Washington, D.C. 279 pp.
- Kruse, Susan. 1997. Behavioral changes of Pacific walrus in response to human activities. U.S. Dept. of the Interior, USFWS, Marine Mammals Management, Anchorage, Alaska. 30pp.
- Raymond, R. 1998. Walrus Islands State Game Sanctuary Annual Report 1998. ADF&G. Division of Wildlife Conservation, Anchorage, AK. 10 pp.
- Rice, S. 2002. Walrus Islands State Game Sanctuary Annual Report 2002. ADF&G. Division of Wildlife Conservation, Anchorage, AK. 20 pp.
- Salter. R. E. 1979. Site utilization, activity budgets, and disturbance responses of Atlantic walruses during terrestrial haul-out. Canadian Journal of Zoology. 57(6):1169-1180.

APPENDICES

APPENDIX A

Appendix A. 2013 Pacific walrus daily count summary, Round Island, Alaska

Date	East Side Total	West Side Total	Total # walrus
5/6/2013	1410	247	1657
5/7/2013	2005	328	2333
5/8/2013	1245	624	1869
5/9/2013	1021	503	1524
5/10/2013	1182	352	1534
5/11/2013	589	70	659
5/12/2013	754	92	846
5/13/2013	1123	43	1166
5/14/2013	1231	204	1435
5/15/2013	1787	326	2113
5/16/2013	503	173	676
5/17/2013	143	10	153
5/18/2013	133	3	136
5/19/2013	604	3	607
5/20/2013	1174	0	1174
5/21/2013	1237	0	1237
5/22/2013	1887	0	1887
5/23/2013	2566	132	2698
5/24/2013	3097	471	3568
5/25/2013	647	555	1202
5/26/2013	16	285	301
5/27/2013	43	200	243
5/28/2013	1444	464	1908
5/29/2013	1977	378	2355
5/30/2013	2157	653	2810
5/31/2013	2959	554	3513
6/1/2013	2232	578	2810
6/2/2013	146	398	544
6/3/2013	14	262	276
6/4/2013	52	324	376
6/5/2013	935	405	1340
6/6/2013	1166	558	1724
6/7/2013	1823	544	2367
6/8/2013	1565	215	1780
6/9/2013	495	36	531
6/10/2013	442	1	443
6/11/2013	589	2	591
6/12/2013	445	0	445
6/13/2013	1289	148	1437
6/14/2013	2354	558	2912
6/15/2013	2532	281	2813
6/16/2013	2480	4	2484
6/17/2013	1332	5	1337
6/18/2013	287	0	287
6/19/2013	357	19	376
6/20/2013	284	132	416
6/21/2013	692	408	1100
6/22/2013	6	188	194
6/23/2013	3	345	348
6/24/2013	630	603	1233
6/25/2013	3101	499	3600
6/26/2013	1593	229	1822
6/27/2013	1225	31	1256
6/28/2013	719	1	720

Date	East Side Total	West Side Total	Total # walrus
6/29/2013	217	3	220
6/30/2013	127	3	130
7/1/2013	553	0	553
7/2/2013	438	0	438
7/3/2013	514	0	514
7/4/2013	1037	5	1042
7/5/2013	2702	0	2702
7/6/2013	3004	244	3248
7/7/2013	3399	362	3761
7/8/2013	695	30	725
7/9/2013	577	0	577
7/10/2013	518	0	518
7/11/2013	549	0	549
7/12/2013	559	8	567
7/13/2013	2146	0	2146
7/14/2013	2426	21	2447
7/15/2013	2649	0	2649
7/16/2013	2934	0	2934
7/17/2013	778	0	778
7/18/2013	578	0	578
7/19/2013	490	0	490
7/20/2013	464	0	464
7/21/2013	420	0	420
7/22/2013	725	0	725
7/23/2013	941	0	941
7/24/2013	1759	0	1759
7/25/2013	2093	81	2174
7/26/2013	2603	131	2734
7/27/2013	2173	55	2228
7/28/2013	572	0	572
7/29/2013	376	0	376
7/30/2013	361	0	361
7/31/2013	704	0	704
8/1/2013	647	0	647
8/2/2013	199	0	199
8/3/2013	892	54	946
8/4/2013	2456	31	2487
8/5/2013	2880	83	2963
8/6/2013	286	98	384
8/7/2013	54	196	250
8/8/2013	100	111	211
8/9/2013	362	81	443
8/10/2013	632	0	632
8/11/2013	1672	2	1674
8/12/2013	2102	24	2126
8/13/2013	1584	665	2249
8/14/2013	729	173	902
8/15/2013	401	6	407
8/16/2013	117	0	117

APPENDIX B

Appendix B. Pacific walrus detailed count data, 2013 Round Island, Alaska

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
4/18/13	17:00	RPM	WM	17:00		GP	1	0	C	41	3	G	"Photo ct from ASLC West Main camera IMG_3418.JPG @ 1700."
4/19/13	14:00	RPM	WM	14:00		GP	2	1	C	284	7	G	"Photo ct from ASLC West Main camera IMG_3432.JPG @ 1400."
4/20/13	9:00	RPM	WM	9:00		GP	2	1	C	256	6	G	"Photo ct from ASLC West Main camera IMG_3444.JPG @ 0900."
4/21/13	14:00	RPM	WM	9:00		GP	2	1	C	454	39	G	"Photo ct from ASLC West Main camera IMG_3456.JPG @ 0900."
4/22/13	17:00	RPM	WM	14:00		GP	1	0	C	775	50	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1400."
4/23/13	9:00	RPM	WM	17:00		GP	1	0	C	620	23	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1700."
4/24/13	14:00	RPM	WM	14:00		GP	2	1	C	500	44	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1400."
4/25/13	14:00	RPM	WM	14:00		GP	2	2	C	300	18	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1400."
4/26/13	14:00	RPM	WM	14:00		GP	3	2	C	330	8	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1400."
4/27/13	9:00	RPM	WM	9:00		GP	4	3	C	23	0	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 0900."
4/28/13	17:00	RPM	WM	17:00		GP	3	2	C	0	0	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1700."
4/29/13	17:00	RPM	WM	17:00		GP	2	2	C	22	10	G	"Photo ct from ASLC West Main camera IMG_3418.JPG @ 1700."
4/30/13	17:00	RPM	WM	17:00		GP	1	0	C	776	34	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1700."
5/1/13	9:00	RPM	WM	9:00		GP	2	1	C	203	44	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 0900."
5/2/13	9:00	RPM	WM	9:00		GP	2	1	C	240	27	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 0900."
5/3/13	14:00	RPM	WM	17:00		GP	3	2	C	250	5	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1700."
5/4/13	17:00	RPM	WM	14:00		GP	3	2	C	159	0	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1400."
5/5/13	9:00	RPM	WM	9:00		GP	3	3	C	61	0	G	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 0900."
5/6/13	14:00	RPM	SP	14:30	14:40	O							No Count, beaches iced in and not in use.
5/6/13	14:00	RPM	SB	14:30	14:40	O							No Count, beaches iced in and not in use.

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
5/6/13	14:00	RPM	FP	14:30	14:40	O							No Count, beaches iced in and not in use.
5/6/13	14:00	RPM	FB	14:30	14:40	O							No Count, beaches iced in and not in use.
5/6/13	14:00	RPM	CG	14:30	14:40	O							No Count, beaches iced in and not in use.
5/6/13	14:00	RPM	BC	14:30	14:40	O	1	1	C	0	0	E	No Actual Count, but no walrus on beach when arrived.
5/6/13	14:00	RPM	FR	14:30	14:40	O	1	1	C	5	5	E	
5/6/13	14:00	RPM	NBC	16:20	16:22	O	1	1	C	0	0	E	
5/6/13	14:00	DCO	MB	16:30	16:45	O	1	1	C	1400	0	G	1657
5/6/13	14:00	RPM	WM	14:00		GP	1	1	C	233	14	E	"Photo ct from ASLC West Main camera IMG_3721.JPG @ 1400."
5/7/13	9:00	DCO	SP	11:15	11:20	S	1	0	C	0	0	E	
5/7/13	9:00	DCO	SB	11:25	11:30	S	1	0	C	0	0	E	
5/7/13	9:00	DCO	FP	11:35	11:40	S	1	0	C	0	0	E	
5/7/13	9:00	DCO	FB	11:45	11:50	S	1	0	C	0	0	E	
5/7/13	9:00	DCO	CG	12:16	12:18	S	1	0	C	0	0	E	
5/7/13	9:00	DCO	BC	12:23	12:29	S	1	0	C	0	0	E	
5/7/13	9:00	DCO	FR	12:30	12:31	S	1	0	C	5	0	E	
5/7/13	9:00	DCO	NBC	12:36	12:37	S	1	0	C	0	0	E	
5/7/13	9:00	DCO	MB	12:40	12:48	S	1	0	C	1900	100	G	
5/7/13	9:00	RPM	WM	9:00		GP	1	1	C	328	-	E	"Photo ct from ASLC West Main camera IMG_3733.JPG @ 0900"
5/8/13	14:00	DCO	SP	14:31	14:36	S	2	1	C	0	0	E	
5/8/13	14:00	DCO	SB	14:45	14:55	S	2	1	C	0	0	E	
5/8/13	14:00	DCO	FP	15:05	15:06	S	2	1	C	0	0	E	
5/8/13	14:00	DCO	FB	15:11	15:20	S	2	1	C	0	1	E	
5/8/13	14:00	DCO	CG	16:05	16:16	S	2	1	C	0	0	E	
5/8/13	14:00	DCO	BC	16:17	16:45	S	2	1	C	0	0	E	
5/8/13	14:00	DCO	FR	16:46	16:47	S	2	1	C	4	0	E	
5/8/13	14:00	DCO	NBC	17:48	17:49	S	2	1	C	0	0	E	
5/8/13	14:00	DCO	MB	17:09	17:38	S	2	1	C	1200	40	G	
5/8/13	14:00	BMH	WM	14:00		GP	1	1	C	624	-	E	"Photo ct from ASLC West Main camera IMG_3755.JPG @ 1400"
5/9/13	17:00	DCO	SP	17:20	17:21	S	1	1	C	0	0	E	
5/9/13	17:00	DCO	SB	17:26	17:32	S	1	1	C	0	0	E	
5/9/13	17:00	DCO	FP	17:36	17:37	S	1	1	C	0	0	E	
5/9/13	17:00	DCO	FB	17:44	17:52	S	1	1	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
5/9/13	17:00	DCO	CG	18:23	18:26	S	1	1	C	0	0	E	
5/9/13	17:00	DCO	BC	18:27	18:49	S	1	1	C	0	0	E	
5/9/13	17:00	DCO	FR	18:50	18:51	S	1	1	C	4	1	E	
5/9/13	17:00	DCO	NBC	19:03	19:04	S	1	1	C	0	0	E	
5/9/13	17:00	BMH	MB	19:47		GP	1	0	C	993	23	E	photo count, counted on 8-20-13
5/9/13	17:00	BMH	WM	17:00		GP	1	0	C	503	-	E	"Photo ct from ASLC West Main camera IMG_3775.JPG @ 1700"
5/10/13	9:00	BMH	SP	9:40	9:41	S	1	0	C	0	1	E	
5/10/13	9:00	BMH	SB	9:54	9:59	S	1	0	C	3	0	E	
5/10/13	9:00	BMH	FP	10:05	10:06	S	1	0	C	0	0	E	
5/10/13	9:00	BMH	FB	10:11	10:19	S	1	0	C	0	0	E	
5/10/13	9:00	BMH	CG	10:47	10:57	S	2	1	C	0	2	E	
5/10/13	9:00	BMH	BC	10:58	11:10	S	2	1	C	0	0	E	
5/10/13	9:00	BMH	FR	11:11	11:12	S	2	1	C	5	3	E	
5/10/13	9:00	BMH	NBC	11:40	11:41	S	2	1	C	0	0	E	
5/10/13	9:00	DCO	MB	11:32	11:36	S	2	1	C	1100	68	G	
5/10/13	9:00	BMH	WM	9:00		GP	2	0	C	352	-	E	"Photo ct from ASLC West Main camera IMG_3784.JPG @ 0900"
5/11/13	17:00	BMH	SP	17:14	17:15	S	3	1	C	0	0	E	
5/11/13	17:00	BMH	SB	17:20	17:24	S	3	1	C	1	0	E	
5/11/13	17:00	BMH	FP	17:26	17:27	S	3	1	C	0	0	E	
5/11/13	17:00	BMH	FB	17:29	17:32	S	3	1	C	1	0	E	
5/11/13	17:00	BMH	CG	17:42	17:45	S	3	1	C	0	2	E	
5/11/13	17:00	BMH	BC	17:46	17:53	S	3	1	C	0	0	E	
5/11/13	17:00	BMH	FR	17:54	17:55	S	3	1	C	0	0	E	
5/11/13	17:00	BMH	NBC	17:59	18:00	S	3	1	C	0	0	E	
5/11/13	17:00	DCO	MB	18:10	18:15	S	3	1	C	500	85	P	Approx. 300 animals clustered > 10 m offshore
5/11/13	17:00	BMH	WM	17:00		GP	3	2	C	70	-	E	"Photo ct from ASLC West Main camera IMG_3809.JPG @ 1700"
5/12/13	14:00	BMH	SP	14:15	14:16	S	3	1	C	0	0	E	
5/12/13	14:00	BMH	SB	14:17	14:25	S	3	1	C	0	0	E	
5/12/13	14:00	BMH	FP	14:27	14:28	S	3	1	C	0	0	E	
5/12/13	14:00	BMH	FB	14:30	14:34	S	3	1	C	0	0	E	
5/12/13	14:00	DCO	CG	14:13	14:15	S	3	1	C	0	0	E	
5/12/13	14:00	DCO	BC	14:16	14:28	S	3	1	C	0	0	E	
5/12/13	14:00	DCO	FR	14:29	14:30	S	3	1	C	0	0	E	
5/12/13	14:00	DCO	NBC	14:35	14:36	S	3	1	C	0	0	E	
5/12/13	14:00	DCO	MB	14:50	14:57	S	3	1	C	710	44	G	
5/12/13	14:00	BMH	WM	14:00		GP	3	2	C	92	-	E	"Photo ct from ASLC West Main

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
													camera IMG_3823.JPG @ 1400"
5/13/13	14:00	BMH	SP	14:22	14:23	S	1	1	C	0	0	E	
5/13/13	14:00	BMH	SB	14:27	14:30	S	1	1	C	0	0	E	
5/13/13	14:00	BMH	FP	14:31	14:32	S	1	1	C	0	0	E	
5/13/13	14:00	BMH	FB	14:40	14:45	S	1	1	C	0	0	E	
5/13/13	14:00	BMH	CG	14:51	14:53	S	1	1	C	0	0	E	
5/13/13	14:00	BMH	BC	14:54	15:02	S	1	1	C	0	0	E	
5/13/13	14:00	BMH	FR	15:03	15:04	S	1	1	C	2	0	E	
5/13/13	14:00	BMH	NBC	15:10	15:11	S	1	1	C	0	0	E	
5/13/13	14:00	DCO	MB	15:19	15:34	S	3	1	C	1075	46	G	
5/13/13	14:00	BMH	WM	14:00		GP	2	1	C	43	-	E	"Photo ct from ASLC West Main camera IMG_3840.JPG @ 1400"
5/14/13	17:00	BMH	SP	17:15	17:20	S	1	0	C	0	0	E	
5/14/13	17:00	BMH	SB	17:24	17:28	S	1	0	C	0	0	E	
5/14/13	17:00	BMH	FP	17:32	17:36	S	1	0	C	0	0	E	
5/14/13	17:00	BMH	FB	17:40	17:46	S	1	0	C	0	0	E	
5/14/13	17:00	RPM	CG	17:26	17:31	S	1	1	C	0	0	E	
5/14/13	17:00	RPM	BC	17:32	17:39	S	1	1	C	0	0	E	
5/14/13	17:00	RPM	FR	17:40	17:41	S	1	1	C	0	0	E	
5/14/13	17:00	RPM	NBC	17:46	17:47	S	1	1	C	0	0	E	
5/14/13	17:00	DCO	MB	18:20	18:30	S	1	1	C	1203	28	G	
5/14/13	17:00	BMH	WM	17:00		GP	2	1	C	204	-	E	"Photo ct from ASLC West Main camera IMG_3860.JPG @ 1700"
5/15/13	14:00	RPM	SP	14:13	14:15	S	1	1	C	0	0	E	
5/15/13	14:00	RPM	SB	14:18	14:22	S	1	1	C	0	0	E	
5/15/13	14:00	RPM	FP	14:24	14:26	S	1	1	C	0	0	E	
5/15/13	14:00	RPM	FB	14:29	14:35	S	1	1	C	0	0	E	
5/15/13	14:00	BMH	CG	14:53	14:57	S	1	1	C	0	0	E	
5/15/13	14:00	BMH	BC	14:58	15:06	S	1	1	C	1	0	E	
5/15/13	14:00	BMH	FR	15:07	15:08	S	1	1	C	6	0	E	
5/15/13	14:00	BMH	NBC	15:22	15:23	S	1	1	C	0	0	E	
5/15/13	14:00	DCO	MB	15:35	15:55	S	1	1	C	1565	215	G	
5/15/13	14:00	BMH	WM	14:00		GP	1	1	C	326	-	E	"Photo ct from ASLC West Main camera IMG_3874.JPG @ 1400"
5/16/13	14:00	BMH	SP	14:23	14:24	S	4	1	C	0	2	E	
5/16/13	14:00	BMH	SB	14:27	14:30	S	4	1	C	0	0	E	
5/16/13	14:00	BMH	FP	14:32	14:33	S	4	1	C	0	0	E	
5/16/13	14:00	BMH	FB	14:36	14:40	S	4	1	C	12	1	E	
5/16/13	14:00	BMH	CG	14:51	14:54	S	4	2	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
5/16/13	14:00	BMH	BC	14:55	15:03	S	4	2	C	0	0	E	
5/16/13	14:00	BMH	FR	15:04	15:05	S	4	2	C	1	0	E	
5/16/13	14:00	BMH	NBC	15:12	15:13	S	4	2	C	0	2	E	
5/16/13	14:00	DCO	MB	15:21	15:34	S	4	2	C	470	15	G	
5/16/13	14:00	BMH	WM	14:00		GP	4	3	C	173	-	E	"Photo ct from ASLC West Main camera IMG_3891.JPG @ 1400"
5/17/13	9:00	BMH	SP	9:30	9:31	S	5	1	C	0	3	E	
5/17/13	9:00	BMH	SB	9:33	9:36	S	5	1	C	0	0	E	
5/17/13	9:00	BMH	FP	9:42	9:43	S	5	1	C	0	0	E	
5/17/13	9:00	BMH	FB	9:48	9:52	S	5	1	C	0	0	E	
5/17/13	9:00	RPM	CG	9:30	9:33	S	5	3	C	0	0	E	
5/17/13	9:00	RPM	BC	9:34	9:41	S	5	3	C	0	3	E	
5/17/13	9:00	RPM	FR	9:43	9:44	S	5	3	C	0	2	E	
5/17/13	9:00	RPM	NBC	10:00	10:03	S	5	3	C	0	2	E	
5/17/13	9:00	RPM	MB	10:10	10:20	S	5	3	C	120	13	F	windy; carcass moved towards OP; big waves
5/17/13	9:00	BMH	WM	9:00		GP	4	3	C	10	-	E	"Photo ct from ASLC West Main camera IMG_3903.JPG @ 0900"
5/18/13	17:00	BMH	SP	17:15	17:17	S	3	1	C	0	0	E	
5/18/13	17:00	BMH	SB	17:21	17:25	S	3	1	C	0	0	E	
5/18/13	17:00	BMH	FP	17:28	17:29	S	3	1	C	0	0	E	
5/18/13	17:00	BMH	FB	17:31	17:36	S	3	1	C	0	0	E	
5/18/13	17:00	RPM	CG	17:26	17:28	S	3	1	C	0	0	E	
5/18/13	17:00	RPM	BC	17:29	17:40	S	3	2	C	0	0	E	
5/18/13	17:00	RPM	FR	17:41	17:43	S	3	2	C	0	0	E	
5/18/13	17:00	RPM	NBC	17:48	17:50	S	3	2	C	0	1	E	
5/18/13	17:00	DCO	MB	18:08	18:14	S	3	2	C	128	4	G	
5/18/13	17:00	BMH	WM	17:00		GP	4	3	C	3	0	E	"Photo ct from ASLC West Main camera IMG_3928.JPG @ 1700"
5/19/13	14:00	RPM	SP	14:29	14:30	S	2	0	C	0	0	E	
5/19/13	14:00	RPM	SB	14:33	14:41	S	1	0	C	0	0	E	
5/19/13	14:00	RPM	FP	14:42	14:43	S	1	0	C	0	0	E	
5/19/13	14:00	RPM	FB	14:45	14:48	S	1	0	C	0	0	E	
5/19/13	14:00	BMH	CG	14:21	14:26	S	2	0	C	0	0	E	
5/19/13	14:00	BMH	BC	14:27	14:42	S	1	0	C	0	0	E	
5/19/13	14:00	BMH	FR	14:42	14:43	S	1	0	C	0	0	E	
5/19/13	14:00	BMH	NBC	14:51	14:52	S	1	0	C	0	0	E	
5/19/13	14:00	DCO	MB	15:10	15:25	S	1	0	C	595	9	G	
5/19/13	14:00	RPM	WM	14:00		GP	2	1	C	3	0	E	"Photo ct from ASLC West Main camera IMG_3942.JPG @ 1400"

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
5/20/13	14:00	BMH	SP	14:12	14:13	S	4	3	C	0	0	E	
5/20/13	14:00	BMH	SB	14:16	14:19	S	4	2	C	1	0	E	
5/20/13	14:00	BMH	FP	14:27	14:28	S	4	2	C	0	0	E	
5/20/13	14:00	BMH	FB	14:32	14:37	S	4	2	C	0	0	E	
5/20/13	14:00	RPM	CG	14:45	14:50	S	3	2	C	0	4	E	
5/20/13	14:00	RPM	BC	14:51	15:00	S	3	2	C	0	0	E	
5/20/13	14:00	RPM	FR	15:00	15:01	S	3	1	C	0	0	E	
5/20/13	14:00	RPM	NBC	15:10	15:12	S	3	1	C	0	0	E	
5/20/13	14:00	BMH	MB	15:27	15:34	S	3	1	C	1150	19	G	BMH/RPM variability count
5/20/13	14:00	BMH	WM	14:00		GP	3	2	C	0	0	E	"Photo ct from ASLC West Main camera IMG_3959.JPG @ 1400"
5/21/13	9:00	RPM	SP	9:17	9:18	S	4	3	C	0	0	E	
5/21/13	9:00	RPM	SB	9:21	9:24	S	4	3	C	0	0	E	
5/21/13	9:00	RPM	FP	9:26	9:27	S	4	3	C	0	0	E	
5/21/13	9:00	RPM	FB	9:29	9:34	S	4	3	C	0	3	E	
5/21/13	9:00	BMH	CG	9:51	9:54	S	4	3	C	0	6	E	
5/21/13	9:00	BMH	BC	9:55	10:07	S	4	3	C	0	0	E	
5/21/13	9:00	BMH	FR	10:08	10:09	S	4	3	C	0	0	E	
5/21/13	9:00	BMH	NBC	10:17	10:18	S	4	3	C	0	2	E	
5/21/13	9:00	DCO	MB	10:22	10:32	S	4	3	C	1200	26	G	
5/21/13	9:00	BMH	WM	9:00		GP	4	3	C	0	0	E	"Photo ct from ASLC West Main camera IMG_3971.JPG @ 0900"
5/22/13	17:00	BMH	SP	17:10	17:11	S	3	1	C	0	0	E	
5/22/13	17:00	BMH	SB	17:16	17:21	S	3	1	C	0	0	E	
5/22/13	17:00	BMH	FP	17:23	17:24	S	3	1	C	0	0	E	
5/22/13	17:00	BMH	FB	17:27	17:31	S	3	1	C	0	0	E	
5/22/13	17:00	RPM	CG	17:24	17:28	S	2	1	C	0	0	E	
5/22/13	17:00	RPM	BC	17:28	17:38	S	2	1	C	0	0	E	
5/22/13	17:00	RPM	FR	17:38	17:40	S	2	1	C	9	0	E	
5/22/13	17:00	RPM	NBC	17:48	17:49	S	2	0	C	0	0	E	
5/22/13	17:00	RPM	MB	18:03		GP	2	0	C	1878	-	E	"Photo ct"
5/22/13	17:00	BMH	WM	17:00		GP	2	2	C	0	0	E	"Photo ct from ASLC West Main camera IMG_3996.JPG @ 1700"
5/23/13	9:00	RPM	SP	9:25	9:27	S	1	0	C	0	0	E	
5/23/13	9:00	RPM	SB	9:30	9:34	S	1	0	C	0	0	E	
5/23/13	9:00	RPM	FP	9:35	9:36	S	1	0	C	0	0	E	
5/23/13	9:00	RPM	FB	9:38	9:42	S	1	0	C	0	0	E	
5/23/13	9:00	BMH	CG	9:40	9:43	S	1	0	C	1	0	E	
5/23/13	9:00	BMH	BC	9:44	9:53	S	1	0	C	3	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
5/23/13	9:00	BMH	FR	9:54	9:56	S	1	0	C	19	3	E	
5/23/13	9:00	BMH	NBC	10:06	10:07	S	1	0	C	0	0	E	
5/23/13	9:00	BMH	MB	10:22		GP	1	0	C	2540	-	E	"Photo ct"
5/23/13	9:00	BMH	WM	9:00		GP	2	2	C	132	0	E	"Photo ct from ASLC West Main camera IMG_4005.JPG @ 0900"
5/24/13	14:00	BMH	SP	14:30	14:32	S	1	0	C	0	0	E	
5/24/13	14:00	BMH	SB	14:36	14:41	S	1	0	C	45	0	E	
5/24/13	14:00	BMH	FP	14:43	14:44	S	1	0	C	0	0	E	
5/24/13	14:00	BMH	FB	14:56	14:57	S	1	0	C	125	11	E	
5/24/13	14:00	RPM	CG	14:27	14:30	S	0	0	C	7	5	E	
5/24/13	14:00	RPM	BC	14:31	14:47	S	0	0	C	11	2	E	
5/24/13	14:00	RPM	FR	14:47	14:51	S	0	0	C	21	4	E	
5/24/13	14:00	RPM	NBC	14:58	15:00	S	0	0	C	2	2	E	
5/24/13	14:00	RPM	MB	15:15		GP	0	0	C	2862	-	E	"Photo ct"
5/24/13	14:00	RPM	WM	14:00		GP	0	0	C	451	20	E	"Photo ct from ASLC West Main camera IMG_4027.JPG @ 1400."
5/25/13	14:00	RPM	SP	14:36	14:37	S	4	3	C	0	0	E	
5/25/13	14:00	RPM	SB	14:41	14:45	S	4	3	C	4	1	E	
5/25/13	14:00	RPM	FP	14:47	14:48	S	4	3	C	0	0	E	
5/25/13	14:00	RPM	FB	14:49	14:55	S	4	3	C	12	1	E	
5/25/13	14:00	BMH	CG	14:35	14:39	S	4	3	C	0	3	E	
5/25/13	14:00	BMH	BC	14:40	14:49	S	4	3	C	0	0	E	
5/25/13	14:00	BMH	FR	14:50	14:51	S	4	3	C	2	0	E	
5/25/13	14:00	BMH	NBC	14:54	14:55	S	4	3	C	0	1	E	
5/25/13	14:00	BMH	MB	15:00	15:13	S	4	2	C	620	3	G	
5/25/13	14:00	RPM	WM	14:00		GP	3	2	C	533	22	E	"Photo ct from ASLC West Main camera IMG_4044.JPG @ 1400."
5/26/13	14:00	BMH	SP	14:13	14:14	S	2	2	C	0	0	E	
5/26/13	14:00	BMH	SB	14:17	14:20	S	2	2	C	0	0	E	
5/26/13	14:00	BMH	FP	14:21	14:22	S	2	2	C	0	0	E	
5/26/13	14:00	BMH	FB	14:26	14:29	S	2	2	C	0	0	E	
5/26/13	14:00	RPM	CG	14:09	14:12	S	2	2	C	0	1	E	
5/26/13	14:00	RPM	BC	14:12	14:20	S	3	2	C	0	0	E	
5/26/13	14:00	RPM	FR	14:20	14:21	S	3	2	C	0	0	E	
5/26/13	14:00	RPM	NBC	14:27	14:28	S	3	2	C	0	0	E	
5/26/13	14:00	RPM	MB	14:30	14:37	S	3	2	C	14	1	E	
5/26/13	14:00	RPM	WM	14:00		GP	3	2	C	279	6	E	"Photo ct from ASLC West Main camera IMG_4061.JPG @ 1400."
5/27/13	9:00	RPM	SP	9:36	9:38	S	2	1	C	0	0	E	
5/27/13	9:00	RPM	SB	9:40	9:42	S	2	1	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
5/27/13	9:00	RPM	FP	9:45	9:46	S	2	1	C	0	0	E	
5/27/13	9:00	RPM	FB	9:50	9:55	S	2	1	C	0	0	E	
5/27/13	9:00	BMH	CG	9:42	9:47	S	3	2	C	0	0	E	
5/27/13	9:00	BMH	BC	9:48	9:54	S	3	2	C	0	0	E	
5/27/13	9:00	BMH	FR	9:55	9:56	S	3	2	C	0	0	E	
5/27/13	9:00	BMH	NBC	10:03	10:04	S	3	2	C	0	0	E	
5/27/13	9:00	BMH	MB	10:07	10:13	S	3	2	C	41	2	G	
5/27/13	9:00	BMH	WM	9:00		GP	2	1	C	200	0	E	"Photo ct from ASLC West Main camera IMG_4073.JPG @ 0900."
5/28/13	17:00	BMH	SP	17:21	17:22	S	1	0	C	0	0	E	
5/28/13	17:00	BMH	SB	17:26	17:28	S	1	0	C	0	0	E	
5/28/13	17:00	BMH	FP	17:30	17:31	S	1	0	C	0	0	E	
5/28/13	17:00	BMH	FB	17:33	17:40	S	1	0	C	3	1	E	
5/28/13	17:00	RPM	CG	17:29	17:31	S	2	0	C	0	1	E	
5/28/13	17:00	RPM	BC	17:31	17:38	S	2	0	C	0	1	E	
5/28/13	17:00	RPM	FR	17:38	17:45	S	2	0	C	6	1	E	
5/28/13	17:00	RPM	NBC	17:50	17:52	S	2	0	C	0	0	E	
5/28/13	17:00	RPM	MB	17:59	18:26	S	2	0	C	1400	31	G	
5/28/13	17:00	RPM	WM	20:05	20:13	S	1	0	C	439	25	G	
5/29/13	17:00	RPM	SP	17:10	17:11	S	1	0	C	0	0	E	
5/29/13	17:00	RPM	SB	17:14	17:18	S	1	0	C	0	0	E	
5/29/13	17:00	RPM	FP	17:19	17:20	S	1	0	C	0	0	E	
5/29/13	17:00	RPM	FB	17:21	17:25	S	1	0	C	53	3	E	
5/29/13	17:00	BMH	CG	17:25	17:27	S	1	0	C	0	1	E	
5/29/13	17:00	BMH	BC	17:28	17:36	S	1	0	C	0	2	E	
5/29/13	17:00	BMH	FR	17:37	17:38	S	1	0	C	8	0	E	
5/29/13	17:00	BMH	NBC	17:50	17:51	S	1	0	C	0	1	E	
5/29/13	17:00	BMH	MB	17:57	18:09	S	1	0	C	1835	74	G	
5/29/13	17:00	BMH	WM	19:30	19:42	S	1	1	C	359	19	G	
5/30/13	17:00	BMH	SP	17:24	17:25	S	1	0	C	0	0	E	
5/30/13	17:00	BMH	SB	17:27	17:30	S	1	0	C	1	0	E	
5/30/13	17:00	BMH	FP	17:32	17:33	S	1	0	C	0	0	E	
5/30/13	17:00	BMH	FB	17:35	17:45	S	1	0	C	90	1	E	
5/30/13	17:00	RPM	CG	17:01	17:05	S	1	0	C	0	4	E	
5/30/13	17:00	RPM	BC	17:06	17:13	S	1	0	C	0	0	E	
5/30/13	17:00	RPM	FR	17:14	17:15	S	1	0	C	10	1	E	
5/30/13	17:00	RPM	NBC	17:21	17:22	S	1	0	C	0	2	E	
5/30/13	17:00	RPM	MB	17:24	17:40	S	1	0	C	2010	38	G	
5/30/13	17:00	RPM	WM	18:42	19:00	S	1	0	C	616	37	G	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
5/31/13	17:00	RPM	SP	17:01	17:02	S	1	0	C	0	0	E	
5/31/13	17:00	RPM	SB	17:05	17:13	S	1	0	C	57	1	E	
5/31/13	17:00	RPM	FP	17:16	17:17	S	1	0	C	0	0	E	
5/31/13	17:00	RPM	FB	17:19	17:28	S	1	0	C	127	2	E	
5/31/13	17:00	BMH	CG	17:08	17:11	S	1	0	C	1	0	E	
5/31/13	17:00	BMH	BC	17:12	17:20	S	1	0	C	7	0	E	
5/31/13	17:00	BMH	FR	17:21	17:22	S	1	0	C	7	1	E	
5/31/13	17:00	BMH	NBC	17:27	17:28	S	1	0	C	0	0	E	
5/31/13	17:00	BMH	MB	17:31	17:48	S	1	0	C	2675	81	G	
5/31/13	17:00	BMH	WM	18:30	18:45	S	1	0	C	520	34	E	
6/1/13	17:00	BMH	SP	17:15	17:16	S	0	0	C	0	0	E	
6/1/13	17:00	BMH	SB	17:21	17:26	S	0	0	C	51	0	E	
6/1/13	17:00	BMH	FP	17:28	17:29	S	0	0	C	0	0	E	
6/1/13	17:00	BMH	FB	17:32	17:40	S	0	0	C	105	2	E	
6/1/13	17:00	RPM	CG	16:58	17:01	S	1	0	C	1	1	E	
6/1/13	17:00	RPM	BC	17:01	17:09	S	1	0	C	3	0	E	
6/1/13	17:00	RPM	FR	17:09	17:10	S	1	0	C	8	1	E	
6/1/13	17:00	RPM	NBC	17:15	17:16	S	1	0	C	1	1	E	
6/1/13	17:00	RPM	MB	17:17	17:32	S	1	0	C	2040	18	G	
6/1/13	17:00	RPM	WM	18:30	18:46	S	1	0	C	561	17	E	
6/2/13	14:00	RPM	SP	14:18	14:20	S	4	3	C	0	2	E	
6/2/13	14:00	RPM	SB	14:24	14:27	S	4	3	C	0	0	E	
6/2/13	14:00	RPM	FP	14:29	14:30	S	4	3	C	0	4	E	
6/2/13	14:00	RPM	FB	14:31	14:35	S	4	3	C	5	6	E	
6/2/13	14:00	BMH	CG	14:21	14:25	S	4	3	C	0	0	E	
6/2/13	14:00	BMH	BC	14:26	14:32	S	4	3	C	0	0	E	
6/2/13	14:00	BMH	FR	14:33	14:34	S	4	3	C	0	1	E	
6/2/13	14:00	BMH	NBC	14:37	14:38	S	4	3	C	0	2	E	
6/2/13	14:00	BMH	MB	14:40	14:48	S	4	3	C	124	2	G	
6/2/13	14:00	BMH	WM	15:20	15:36	S	4	3	C	370	28	E	
6/3/13	14:00	BMH	SP	14:14	14:15	S	2	2	C	0	0	E	
6/3/13	14:00	BMH	SB	14:18	14:21	S	2	2	C	0	0	E	
6/3/13	14:00	BMH	FP	14:23	14:24	S	2	2	C	0	0	E	
6/3/13	14:00	BMH	FB	14:26	14:29	S	2	2	C	1	0	E	
6/3/13	14:00	RPM	CG	14:09	14:12	S	3	2	C	0	0	E	
6/3/13	14:00	RPM	BC	14:12	14:19	S	3	2	C	0	0	E	
6/3/13	14:00	RPM	FR	14:19	14:20	S	3	2	C	0	0	E	
6/3/13	14:00	RPM	NBC	14:25	14:26	S	3	2	C	0	0	E	
6/3/13	14:00	RPM	MB	14:27	14:30	S	3	2	C	10	3	G	
6/3/13	14:00	RPM	WM	15:15	15:27	S	2	0	C	222	40	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
6/4/13	14:00	RPM	SP	14:14	14:15	S	1	0	C	0	0	E	
6/4/13	14:00	RPM	SB	14:19	14:22	S	1	0	C	0	0	E	
6/4/13	14:00	RPM	FP	14:23	14:24	S	1	0	C	1	0	E	
6/4/13	14:00	RPM	FB	14:27	14:31	S	1	0	C	0	1	E	
6/4/13	14:00	RPM	CG	14:37	14:40	S	1	0	C	0	0	E	
6/4/13	14:00	RPM	BC	14:40	14:48	S	1	0	C	0	0	E	
6/4/13	14:00	RPM	FR	14:48	14:50	S	1	0	C	0	0	E	
6/4/13	14:00	BMH	NBC	14:24	14:25	S	1	0	C	0	1	E	
6/4/13	14:00	BMH	MB	14:33	14:40	S	1	0	C	35	14	G	
6/4/13	14:00	BMH	WM	15:11	15:21	S	1	0	C	308	16	E	
6/5/13	14:00	BMH	SP	14:22	14:23	S	1	1	C	0	0	E	
6/5/13	14:00	BMH	SB	14:27	14:31	S	1	1	C	1	0	E	
6/5/13	14:00	BMH	FP	14:33	14:34	S	1	1	C	0	0	E	
6/5/13	14:00	BMH	FB	14:36	14:39	S	1	1	C	9	0	E	
6/5/13	14:00	BMH	CG	14:55	14:57	S	1	1	C	0	0	E	
6/5/13	14:00	BMH	BC	14:58	15:03	S	1	1	C	0	0	E	
6/5/13	14:00	BMH	FR	15:04	15:05	S	1	1	C	16	0	E	
6/5/13	14:00	RPM	NBC	14:19	14:20	S	1	1	C	0	0	E	
6/5/13	14:00	RPM	MB	14:22	14:35	S	1	0	C	880	29	G	
6/5/13	14:00	RPM	WM	16:00	16:16	S	1	0	C	370	35	E	
6/6/13	17:00	RPM	SP	17:15	17:17	S	2	1	C	0	0	E	
6/6/13	17:00	RPM	SB	17:19	17:22	S	2	1	C	0	0	E	
6/6/13	17:00	RPM	FP	17:24	17:25	S	2	1	C	0	0	E	
6/6/13	17:00	RPM	FB	17:27	17:31	S	2	1	C	1	0	E	
6/6/13	17:00	RPM	CG	17:38	17:41	S	2	1	C	0	0	E	
6/6/13	17:00	RPM	BC	17:41	17:50	S	2	1	C	1	0	E	
6/6/13	17:00	RPM	FR	17:50	17:51	S	2	1	C	0	0	E	
6/6/13	17:00	BMH	NBC	17:19	17:20	S	1	1	C	0	0	E	
6/6/13	17:00	BMH	MB	17:24	17:34	S	1	1	C	1150	14	G	
6/6/13	17:00	BMH	WM	18:11	18:21	S	0	0	C	520	38	G	
6/7/13	9:00	BMH	SP	9:24	9:25	S	2	0	C	0	0	E	
6/7/13	9:00	BMH	SB	9:30	9:36	S	2	0	C	47	0	E	
6/7/13	9:00	BMH	FP	9:38	9:39	S	2	0	C	0	0	E	
6/7/13	9:00	BMH	FB	9:41	9:48	S	2	0	C	40	1	E	
6/7/13	9:00	BMH	CG	10:06	10:12	S	2	0	C	0	0	E	
6/7/13	9:00	BMH	BC	10:13	10:19	S	2	0	C	0	0	E	
6/7/13	9:00	BMH	FR	10:20	10:21	S	2	0	C	9	1	E	
6/7/13	9:00	RPM	NBC	9:48	9:49	S	2	1	C	0	0	E	
6/7/13	9:00	RPM	MB	9:50	10:10	S	2	1	C	1700	25	G	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
6/7/13	9:00	RPM	WM	11:05	11:20	S	2	1	C	530	14	E	
6/8/13	14:00	RPM	SP	14:36	14:37	S	2	0	C	0	3	E	
6/8/13	14:00	RPM	SB	14:39	14:44	S	2	0	C	101	1	E	
6/8/13	14:00	RPM	FP	14:45	14:46	S	2	0	C	0	0	E	
6/8/13	14:00	RPM	FB	14:49	14:54	S	2	0	C	78	7	E	
6/8/13	14:00	RPM	CG	15:13	15:16	S	2	1	C	0	1	E	
6/8/13	14:00	RPM	BC	15:16	15:23	S	2	1	C	0	2	E	
6/8/13	14:00	RPM	FR	15:23	15:24	S	2	1	C	4	0	E	
6/8/13	14:00	BMH	NBC	14:30	14:31	S	3	2	C	0	0	E	
6/8/13	14:00	BMH	MB	14:33	14:46	S	3	1	C	1290	78	G	
6/8/13	14:00	BMH	WM	15:28	15:37	S	3	2	C	206	9	E	
6/9/13	9:00	BMH	SP	9:25	9:26	S	3	1	C	0	8	E	
6/9/13	9:00	BMH	SB	9:28	9:37	S	3	1	C	83	34	E	
6/9/13	9:00	BMH	FP	9:39	9:40	S	3	2	C	0	0	E	
6/9/13	9:00	BMH	FB	9:42	9:49	S	3	2	C	29	35	E	
6/9/13	9:00	BMH	CG	9:56	9:58	S	4	3	C	0	0	E	
6/9/13	9:00	BMH	BC	9:59	10:06	S	4	3	C	0	0	E	
6/9/13	9:00	BMH	FR	10:07	10:08	S	4	3	C	0	10	E	
6/9/13	9:00	RPM	NBC	9:47	9:48	S	4	3	C	0	4	E	
6/9/13	9:00	RPM	MB	9:49	9:58	S	4	3	C	270	22	G	
6/9/13	9:00	RPM	WM	10:35	10:52	S	4	3	C	31	5	E	young walrus observed at WM - no photo
6/10/13	14:00	RPM	SP	14:28	14:29	S	3	0	C	0	0	E	
6/10/13	14:00	RPM	SB	14:33	14:39	S	3	0	C	104	8	E	
6/10/13	14:00	RPM	FP	14:40	14:42	S	3	0	C	0	1	E	
6/10/13	14:00	RPM	FB	14:47	14:56	S	3	0	C	44	5	E	
6/10/13	14:00	RPM	CG	15:00	15:04	S	3	1	C	0	0	E	
6/10/13	14:00	RPM	BC	15:04	15:10	S	3	1	C	0	0	E	
6/10/13	14:00	RPM	FR	15:10	15:12	S	3	1	C	0	1	E	
6/10/13	14:00	BMH	NBC	14:57	14:58	S	3	2	C	0	0	E	
6/10/13	14:00	BMH	MB	15:02	15:12	S	2	1	C	247	32	G	
6/10/13	14:00	BMH	WM	15:48	15:49	S	2	2	C	0	1	E	443
6/11/13	14:00	BMH	SP	14:41	14:42	S	0	0	C	0	0	E	
6/11/13	14:00	BMH	SB	14:45	14:49	S	0	0	C	54	0	E	
6/11/13	14:00	BMH	FP	14:51	14:52	S	0	0	C	0	0	E	
6/11/13	14:00	BMH	FB	14:54	14:59	S	0	0	C	37	1	E	
6/11/13	14:00	BMH	CG	15:08	15:11	S	0	0	C	0	0	E	
6/11/13	14:00	BMH	BC	15:12	15:20	S	0	0	C	0	0	E	
6/11/13	14:00	BMH	FR	15:21	15:22	S	0	0	C	0	0	E	
6/11/13	14:00	RPM	NBC	14:47	14:48	S	1	0	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
6/11/13	14:00	RPM	MB	14:49	15:20	S	1	0	C	470	27	G	
6/11/13	14:00	RPM	WM	16:00	16:05	S	2	2	C	1	1	E	
6/12/13	14:00	RPM	SP	14:08	14:10	S	1	0	C	3	0	E	
6/12/13	14:00	RPM	SB	14:13	14:20	S	1	0	C	37	1	E	
6/12/13	14:00	RPM	FP	14:22	14:23	S	1	0	C	0	1	E	
6/12/13	14:00	RPM	FB	14:25	14:31	S	1	0	C	39	1	E	
6/12/13	14:00	RPM	CG	14:39	14:45	S	1	0	C	0	2	E	
6/12/13	14:00	RPM	BC	14:45	14:50	S	1	0	C	0	1	E	
6/12/13	14:00	RPM	FR	14:50	14:51	S	1	0	C	5	0	E	
6/12/13	14:00	BMH	NBC	14:40	14:41	S	0	0	C	0	0	E	
6/12/13	14:00	BMH	MB	14:44	14:53	S	0	0	C	325	30	G	
6/12/13	14:00	BMH	WM	15:30	15:31	S	1	1	C	0	0	E	
6/13/13	9:00	BMH	SP	9:20	9:21	S	1	0	C	0	0	E	
6/13/13	9:00	BMH	SB	9:24	9:28	S	1	0	C	14	0	E	
6/13/13	9:00	BMH	FP	9:30	9:31	S	1	0	C	0	0	E	
6/13/13	9:00	BMH	FB	9:33	9:43	S	1	0	C	66	13	E	
6/13/13	9:00	BMH	CG	10:09	10:12	S	1	0	C	6	2	E	
6/13/13	9:00	BMH	BC	10:13	10:20	S	1	0	C	0	0	E	
6/13/13	9:00	BMH	FR	10:21	10:22	S	1	0	C	16	7	E	
6/13/13	9:00	RPM	NBC	10:02	10:03	S	1	0	C	1	4	E	
6/13/13	9:00	RPM	MB	10:05	10:20	S	1	0	C	1100	60	G	
6/13/13	9:00	RPM	WM	12:20	12:28	S	1	0	C	128	20	E	
6/14/13	9:00	RPM	SP	9:16	9:17	S	1	0	C	0	0	E	
6/14/13	9:00	RPM	SB	9:21	9:27	S	1	0	C	74	33	E	
6/14/13	9:00	RPM	FP	9:29	9:30	S	1	0	C	1	3	E	
6/14/13	9:00	RPM	FB	9:32	9:40	S	1	0	C	89	42	E	
6/14/13	9:00	RPM	CG	9:45	9:49	S	1	0	C	12	33	E	
6/14/13	9:00	RPM	BC	9:49	9:56	S	1	0	C	0	15	E	
6/14/13	9:00	RPM	FR	9:56	10:00	S	1	0	C	16	29	E	
6/14/13	9:00	BMH	NBC	9:55	9:56	S	0	0	C	1	3	E	
6/14/13	9:00	RPM	MB	11:27		GP	0	0	C	1744	259	E	"photo ct"
6/14/13	9:00	BMH	WM	11:40	11:51	S	0	0	C	490	68	E	
6/15/13	14:00	BMH	SP	14:10	14:11	S	2	1	C	0	0	E	
6/15/13	14:00	BMH	SB	14:13	14:21	S	2	1	C	144	7	E	
6/15/13	14:00	BMH	FP	14:23	14:24	S	2	1	C	0	0	E	
6/15/13	14:00	BMH	FB	14:26	14:36	S	2	1	C	164	19	E	
6/15/13	14:00	BMH	CG	15:06	15:08	S	3	0	C	4	2	E	
6/15/13	14:00	BMH	BC	15:07	15:14	S	3	0	C	2	0	E	
6/15/13	14:00	BMH	FR	15:15	15:16	S	3	0	C	10	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
6/15/13	14:00	RPM	NBC	14:00	14:01	S	3	1	C	0	4	E	
6/15/13	14:00	RPM	MB	14:02	14:22	S	3	1	C	2110	66	G	
6/15/13	14:00	RPM	WM	15:29	15:35	S	2	3	C	271	10	E	
6/16/13	17:00	RPM	SP	16:48	16:50	S	1	0	C	2	1	E	
6/16/13	17:00	RPM	SB	16:52	17:00	S	1	0	C	118	7	E	
6/16/13	17:00	RPM	FP	17:02	17:03	S	1	0	C	0	4	E	
6/16/13	17:00	RPM	FB	17:05	17:16	S	1	0	C	219	20	E	
6/16/13	17:00	RPM	CG	17:22	17:24	S	1	0	C	0	1	E	
6/16/13	17:00	RPM	BC	17:25	17:30	S	1	0	C	2	1	E	
6/16/13	17:00	RPM	FR	17:30	17:31	S	1	0	C	6	5	E	
6/16/13	17:00	BMH	NBC	17:20	17:21	S	1	0	C	0	2	E	
6/16/13	17:00	BMH	MB	17:24	17:34	S	0	0	C	2040	52	E	
6/16/13	17:00	BMH	WM	18:38	18:39	S	1	1	C	4	0	E	
6/17/13	14:00	BMH	SP	14:18	14:19	S	0	0	C	0	0	E	
6/17/13	14:00	BMH	SB	14:23	14:32	S	0	0	C	120	4	E	
6/17/13	14:00	BMH	FP	14:34	14:35	S	0	0	C	0	0	E	
6/17/13	14:00	BMH	FB	14:36	14:44	S	0	0	C	102	8	E	
6/17/13	14:00	BMH	CG	14:57	14:59	S	3	0	C	0	1	E	
6/17/13	14:00	BMH	BC	15:00	15:07	S	3	0	C	1	0	E	
6/17/13	14:00	BMH	FR	15:08	15:09	S	3	0	C	8	3	E	
6/17/13	14:00	RPM	NBC	14:42	14:43	S	3	0	C	0	7	E	
6/17/13	14:00	RPM	MB	14:45	14:58	S	3	0	C	1025	53	G	
6/17/13	14:00	RPM	WM	16:00	16:02	S	4	3	C	0	5	E	
6/18/13	14:00	RPM	SP	14:05	14:06	S	2	0	C	1	1	E	
6/18/13	14:00	RPM	SB	14:09	14:14	S	2	0	C	44	0	E	
6/18/13	14:00	RPM	FP	14:15	14:16	S	2	0	C	0	0	E	
6/18/13	14:00	RPM	FB	14:19	14:25	S	2	0	C	76	0	E	
6/18/13	14:00	RPM	CG	14:32	14:35	S	2	1	C	0	0	E	
6/18/13	14:00	RPM	BC	14:35	14:42	S	2	1	C	0	0	E	
6/18/13	14:00	RPM	FR	14:42	14:43	S	2	1	C	0	0	E	
6/18/13	14:00	BMH	NBC	14:42	14:43	S	2	1	C	0	0	E	
6/18/13	14:00	BMH	MB	14:45	14:52	S	2	0	C	155	10	G	
6/18/13	14:00	BMH	WM	15:32	15:33	S	1	1	C	0	0	E	
6/19/13	9:00	BMH	SP	9:21	9:22	S	3	2	C	0	0	E	
6/19/13	9:00	BMH	SB	9:26	9:30	S	3	2	C	31	0	E	
6/19/13	9:00	BMH	FP	9:31	9:32	S	3	2	C	0	0	E	
6/19/13	9:00	BMH	FB	9:34	9:41	S	3	2	C	61	1	E	
6/19/13	9:00	BMH	CG	9:50	9:53	S	3	2	C	0	0	E	
6/19/13	9:00	BMH	BC	9:54	9:59	S	3	1	C	0	0	E	
6/19/13	9:00	BMH	FR	10:00	10:01	S	3	2	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibili ty	Land Count	Water Count	Count Quality	COMMENTS
6/19/13	9:00	RPM	NBC	9:46	9:47	S	2	1	C	0	0	E	
6/19/13	9:00	RPM	MB	9:49	9:59	S	2	2	C	260	4	G	
6/19/13	9:00	RPM	WM	10:50	10:52	S	2	1	C	3	16	E	
6/20/13	14:00	RPM	SP	14:23	14:24	S	4	3	C	0	1	E	
6/20/13	14:00	RPM	SB	14:26	14:28	S	4	3	C	11	1	E	
6/20/13	14:00	RPM	FP	14:30	14:31	S	4	3	C	0	1	E	
6/20/13	14:00	RPM	FB	14:32	14:37	S	4	3	C	42	2	E	
6/20/13	14:00	RPM	CG	14:43	14:45	S	4	3	C	0	2	E	
6/20/13	14:00	RPM	BC	14:45	14:52	S	4	2	C	0	2	E	
6/20/13	14:00	RPM	FR	14:52	14:54	S	4	2	C	8	1	E	
6/20/13	14:00	BMH	NBC	14:59	15:00	S	4	3	C	0	0	E	
6/20/13	14:00	BMH	MB	15:01	15:11	S	4	2	C	205	8	G	
6/20/13	14:00	BMH	WM	16:00	16:08	S	4	1	C	126	6	E	
6/21/13	17:00	BMH	SP	17:19	17:20	S	5	3	C	0	0	E	
6/21/13	17:00	BMH	SB	17:23	17:27	S	5	2	C	19	0	E	
6/21/13	17:00	BMH	FP	17:28	17:29	S	5	3	C	0	0	E	
6/21/13	17:00	BMH	FB	17:31	17:41	S	5	2	C	39	0	E	
6/21/13	17:00	BMH	CG	17:55	17:57	S	5	3	C	0	0	E	
6/21/13	17:00	BMH	BC	17:58	18:03	S	5	2	C	1	0	E	
6/21/13	17:00	BMH	FR	18:04	18:05	S	5	2	C	6	0	E	
6/21/13	17:00	RPM	NBC	17:19	17:20	S	4	2	C	0	0	E	
6/21/13	17:00	RPM	MB	17:23	17:33	S	4	2	C	625	2	G	
6/21/13	17:00	RPM	WM	18:24	18:35	S	3	1	C	389	19	E	
6/22/13	9:00	RPM	SP	9:20	9:22	S	6	3	C	0	0	E	
6/22/13	9:00	RPM	SB	9:28	9:32	S	6	3	C	0	0	E	
6/22/13	9:00	RPM	FP	9:33	9:34	S	6	3	C	0	1	E	
6/22/13	9:00	RPM	FB	9:35	9:39	S	6	3	C	0	0	E	
6/22/13	9:00	RPM	CG	9:43	9:45	S	6	3	C	0	0	E	
6/22/13	9:00	RPM	BC	9:45	9:53	S	6	3	C	0	0	E	
6/22/13	9:00	RPM	FR	9:53	9:54	S	6	3	C	0	0	E	
6/22/13	9:00	BMH	NBC	9:44	9:45	S	6	3	C	0	0	E	
6/22/13	9:00	BMH	MB	9:48	9:50	S	6	3	C	5	0	G	
6/22/13	9:00	BMH	WM	10:28	10:37	S	6	2	C	172	16	E	
6/23/13	9:00	BMH	SP	9:42	9:43	S	4	3	C	0	0	E	
6/23/13	9:00	BMH	SB	9:45	9:47	S	4	3	C	0	0	E	
6/23/13	9:00	BMH	FP	9:49	9:50	S	4	3	C	0	0	E	
6/23/13	9:00	BMH	FB	9:52	9:55	S	4	3	C	0	0	E	
6/23/13	9:00	BMH	CG	10:01	10:03	S	5	3	C	0	0	E	
6/23/13	9:00	BMH	BC	10:04	10:10	S	5	3	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
6/23/13	9:00	BMH	FR	10:11	10:12	S	5	3	C	0	0	E	
6/23/13	9:00	RPM	NBC	9:48	9:49	S	5	3	C	0	0	E	
6/23/13	9:00	RPM	MB	9:50	9:53	S	5	3	C	0	3	G	
6/23/13	9:00	RPM	WM	10:33	10:42	S	2	1	C	312	33	E	
6/24/13	14:00	RPM	SP	13:40	13:41	S	2	1	C	0	0	E	
6/24/13	14:00	RPM	SB	13:44	13:49	S	2	1	C	0	1	E	
6/24/13	14:00	RPM	FP	13:51	13:52	S	2	1	C	1	0	E	
6/24/13	14:00	RPM	FB	13:55	13:59	S	2	1	C	56	3	E	
6/24/13	14:00	RPM	CG	14:03	14:07	S	2	1	C	0	4	E	
6/24/13	14:00	RPM	BC	14:07	14:14	S	2	0	C	0	1	E	
6/24/13	14:00	RPM	FR	14:14	14:16	S	2	0	C	10	5	E	
6/24/13	14:00	BMH	NBC	14:45	14:46	S	1	0	C	0	1	E	
6/24/13	14:00	BMH	MB	14:47	14:54	S	1	0	C	505	43	G	
6/24/13	14:00	BMH	WM	15:30	15:37	S	1	2	C	585	18	G	
6/25/13	17:00	BMH	SP	17:20	17:21	S	0	0	C	0	0	E	
6/25/13	17:00	BMH	SB	17:23	17:31	S	0	0	C	180	2	E	
6/25/13	17:00	BMH	FP	17:33	17:35	S	0	0	C	54	0	E	
6/25/13	17:00	BMH	FB	17:37	17:48	S	0	0	C	172	5	E	
6/25/13	17:00	BMH	CG	17:55	17:58	S	1	0	C	0	1	E	
6/25/13	17:00	BMH	BC	17:59	18:12	S	1	0	C	91	1	E	
6/25/13	17:00	BMH	FR	18:13	18:14	S	1	0	C	33	0	E	
6/25/13	17:00	RPM	NBC	17:06	17:08	S	1	0	C	0	1	E	
6/25/13	17:00	RPM	MB	17:10	17:51	S	1	0	C	2535	26	G	
6/25/13	17:00	RPM	WM	18:35	18:49	S	2	1	C	490	9	E	
6/26/13	9:00	RPM	SP	9:31	9:35	S	3	1	C	2	24	E	
6/26/13	9:00	RPM	SB	9:38	9:51	S	3	0	C	205	90	E	
6/26/13	9:00	RPM	FP	9:53	9:56	S	3	0	C	90	21	E	
6/26/13	9:00	RPM	FB	9:58	10:12	S	3	0	C	216	63	E	
6/26/13	9:00	RPM	CG	10:18	10:20	S	3	1	C	0	5	E	
6/26/13	9:00	RPM	BC	10:20	10:28	S	3	1	C	52	3	E	
6/26/13	9:00	RPM	FR	10:28	10:30	S	3	2	C	3	13	E	
6/26/13	9:00	BMH	NBC	9:37	9:38	S	3	2	C	0	0	E	
6/26/13	9:00	BMH	MB	9:40	9:49	S	3	1	C	770	36	F	bino shake
6/26/13	9:00	BMH	WM	10:25	10:33	S	4	3	C	221	8	G	
6/27/13	9:00	BMH	SP	9:26	9:28	S	2	1	C	2	7	E	
6/27/13	9:00	BMH	SB	9:30	9:44	S	2	1	C	162	66	E	
6/27/13	9:00	BMH	FP	9:47	9:51	S	2	1	C	62	3	E	
6/27/13	9:00	BMH	FB	9:53	10:04	S	2	1	C	141	48	E	
6/27/13	9:00	BMH	CG	10:10	10:12	S	2	2	C	0	2	E	
6/27/13	9:00	BMH	BC	10:13	10:19	S	2	2	C	15	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
6/27/13	9:00	BMH	FR	10:20	10:21	S	3	2	C	6	0	E	
6/27/13	9:00	RPM	NBC	9:31	9:32	S	2	1	C	0	2	E	
6/27/13	9:00	RPM	MB	9:34	9:52	S	2	1	C	667	42	G	
6/27/13	9:00	RPM	WM	10:32	10:38	S	3	2	C	30	1	E	
6/28/13	17:00	RPM	SP	17:06	17:07	S	2	1	C	0	0	E	
6/28/13	17:00	RPM	SB	17:09	17:24	S	2	0	C	185	2	E	
6/28/13	17:00	RPM	FP	17:26	17:29	S	2	0	C	43	1	E	
6/28/13	17:00	RPM	FB	17:31	17:42	S	2	0	C	165	11	E	
6/28/13	17:00	RPM	CG	18:02	18:04	S	2	0	C	0	0	E	
6/28/13	17:00	RPM	BC	18:04	18:11	S	2	0	C	0	0	E	
6/28/13	17:00	RPM	FR	18:11	18:13	S	2	0	C	4	0	E	
6/28/13	17:00	BMH	NBC	17:36	17:37	S	1	0	C	0	0	E	
6/28/13	17:00	BMH	MB	17:39	17:48	S	1	0	C	300	8	G	
6/28/13	17:00	BMH	WM	18:25	18:26	S	2	2	C	0	1	E	
6/29/13	9:00	BMH	SP	9:34	9:35	S	2	2	C	0	3	E	
6/29/13	9:00	BMH	SB	9:37	9:43	S	2	1	C	34	16	E	
6/29/13	9:00	BMH	FP	9:45	9:47	S	2	2	C	10	0	E	
6/29/13	9:00	BMH	FB	9:51	9:58	S	2	2	C	36	16	E	
6/29/13	9:00	BMH	CG	10:05	10:08	S	2	2	C	0	0	E	
6/29/13	9:00	BMH	BC	10:09	10:16	S	2	0	C	0	1	E	
6/29/13	9:00	BMH	FR	10:17	10:18	S	2	2	C	4	3	E	
6/29/13	9:00	RPM	NBC	9:37	9:38	S	2	0	C	0	2	E	
6/29/13	9:00	RPM	MB	9:40	9:47	S	2	0	C	86	6	G	
6/29/13	9:00	RPM	WM	10:47	10:49	S	2	1	C	0	3	E	
6/30/13	9:00	RPM	SP	9:36	9:39	S	5	3	C	0	4	E	
6/30/13	9:00	RPM	SB	9:42	9:46	S	5	3	C	1	7	E	
6/30/13	9:00	RPM	FP	9:47	9:48	S	5	3	C	0	6	E	
6/30/13	9:00	RPM	FB	9:49	9:55	S	5	3	C	34	10	E	
6/30/13	9:00	RPM	CG	9:58	10:02	S	4	3	C	0	11	E	
6/30/13	9:00	RPM	BC	10:02	10:09	S	4	2	C	0	5	E	
6/30/13	9:00	RPM	FR	10:09	10:10	S	4	2	C	3	6	E	
6/30/13	9:00	BMH	NBC	9:44	9:45	S	4	2	C	0	1	E	
6/30/13	9:00	BMH	MB	9:49	9:52	S	4	3	C	37	2	G	
6/30/13	9:00	BMH	WM	10:31	10:32	S	4	3	C	0	3	E	
7/1/13	14:00	BMH	SP	14:35	14:36	S	5	3	C	0	0	E	
7/1/13	14:00	BMH	SB	14:38	14:44	S	5	3	C	80	0	E	
7/1/13	14:00	BMH	FP	14:46	14:47	S	5	2	C	0	0	E	
7/1/13	14:00	BMH	FB	14:48	14:57	S	5	3	C	117	8	E	
7/1/13	14:00	BMH	CG	15:11	15:14	S	5	3	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
7/1/13	14:00	BMH	BC	15:15	15:25	S	4	1	C	64	4	E	
7/1/13	14:00	BMH	FR	15:26	15:27	S	4	0	C	5	1	E	
7/1/13	14:00	RPM	NBC	14:22	14:24	S	3	1	C	0	2	E	
7/1/13	14:00	RPM	MB	14:26	14:33	S	3	1	C	237	35	G	
7/1/13	14:00	RPM	WM	15:21	15:22	S	5	3	C	0	0	E	
7/2/13	9:00	RPM	SP	9:28	9:29	S	3	2	C	0	4	E	
7/2/13	9:00	RPM	SB	9:32	9:37	S	2	1	C	48	3	E	
7/2/13	9:00	RPM	FP	9:38	9:39	S	2	1	C	0	2	E	
7/2/13	9:00	RPM	FB	9:42	9:48	S	2	1	C	69	6	E	
7/2/13	9:00	RPM	CG	9:52	9:55	S	2	1	C	0	1	E	
7/2/13	9:00	RPM	BC	9:55	10:04	S	2	1	C	69	4	E	
7/2/13	9:00	RPM	FR	10:04	10:06	S	2	1	C	6	2	E	
7/2/13	9:00	BMH	NBC	9:44	9:45	S	2	1	C	0	1	E	
7/2/13	9:00	BMH	MB	9:46	9:53	S	2	1	P	215	8	F	
7/2/13	9:00	BMH	WM	10:41	10:42	S	4	3	C	0	0	E	
7/3/13	17:00	BMH	SP	17:45	17:46	S	4	1	C	0	0	E	
7/3/13	17:00	BMH	SB	17:53	18:00	S	4	1	C	32	2	E	
7/3/13	17:00	BMH	FP	18:02	18:03	S	3	1	C	0	1	E	
7/3/13	17:00	BMH	FB	18:05	18:16	S	3	1	C	111	8	E	
7/3/13	17:00	BMH	CG	18:22	18:24	S	3	1	C	1	0	E	
7/3/13	17:00	BMH	BC	18:25	18:32	S	2	0	C	0	2	E	
7/3/13	17:00	BMH	FR	18:33	18:34	S	2	0	C	5	10	E	
7/3/13	17:00	RPM	NBC	16:55	16:56	S	2	0	C	0	0	E	
7/3/13	17:00	RPM	MB	16:58	17:10	S	2	0	C	330	12	G	
7/3/13	17:00	RPM	WM	17:43	17:45	S	3	2	C	0	0	E	
7/4/13	17:00	RPM	SP	17:11	17:12	S	3	1	C	0	2	E	
7/4/13	17:00	RPM	SB	17:15	17:22	S	3	0	C	55	1	E	
7/4/13	17:00	RPM	FP	17:24	17:25	S	3	0	C	0	0	E	
7/4/13	17:00	RPM	FB	17:27	17:42	S	3	0	C	176	2	E	
7/4/13	17:00	RPM	CG	17:56	18:00	S	2	0	C	0	1	E	
7/4/13	17:00	RPM	BC	18:00	18:08	S	2	0	C	0	0	E	
7/4/13	17:00	RPM	FR	18:09	18:10	S	2	0	C	7	0	E	
7/4/13	17:00	BMH	NBC	17:11	17:12	S	1	0	C	0	0	E	
7/4/13	17:00	BMH	MB	17:15	17:23	S	1	0	C	775	18	G	
7/4/13	17:00	BMH	WM	18:03	18:04	S	2	2	C	0	5	E	
7/5/13	17:00	EWV	SP	18:20	18:23	S	3	2	C	0	0	E	
7/5/13	17:00	EWV	SB	18:04	18:17	S	2	1	C	194	1	E	
7/5/13	17:00	EWV	FP	17:55	17:57	S	2	1	C	0	0	E	
7/5/13	17:00	EWV	FB	17:35	17:51	S	2	1	C	275	1	G	
7/5/13	17:00	RPM	CG	17:31	17:34	S	3	2	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
7/5/13	17:00	RPM	BC	17:34	17:49	S	3	2	C	147	0	E	
7/5/13	17:00	RPM	FR	17:49	17:50	S	3	2	C	7	0	E	
7/5/13	17:00	RPM	NBC	17:56	17:57	S	3	2	C	0	2	E	
7/5/13	17:00	RPM	MB	17:59	18:16	S	2	1	C	2060	15	G	
7/5/13	17:00	RPM	WM	17:00		GP	1	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_1036.JPG @ 1700."
7/6/13	9:00	EWW	SP	9:30	9:33	S	2	1	C	0	2	E	
7/6/13	9:00	EWW	SB	9:36	9:57	S	2	1	C	203	20	G	
7/6/13	9:00	EWW	FP	9:59	10:00	S	2	1	C	0	1	E	
7/6/13	9:00	EWW	FB	10:04	10:26	S	2	1	C	197	27	G	
7/6/13	9:00	RPM	CG	9:23	9:28	S	2	1	C	9	13	E	
7/6/13	9:00	RPM	BC	9:28	9:45	S	2	0	C	221	24	E	
7/6/13	9:00	RPM	FR	9:45	9:49	S	2	0	C	17	10	E	
7/6/13	9:00	RPM	NBC	9:54	9:55	S	2	1	C	5	3	E	
7/6/13	9:00	RPM	MB	9:57	10:23	S	2	1	C	2183	69	G	
7/6/13	9:00	RPM	WM	11:02	11:09	S	2	1	C	230	14	E	
7/7/13	9:00	EWW	SP	9:35	9:38	S	1	2	C	0	3	E	
7/7/13	9:00	EWW	SB	9:40	10:02	S	1	1	C	227	35	G	
7/7/13	9:00	EWW	FP	10:05	10:07	S	1	1	C	0	4	E	
7/7/13	9:00	EWW	FB	10:11	10:29	S	1	1	C	205	16	G	
7/7/13	9:00	RPM	CG	9:30	9:34	S	2	1	C	5	17	E	
7/7/13	9:00	RPM	BC	9:34	9:53	S	2	1	C	264	41	G	
7/7/13	9:00	RPM	FR	9:53	9:56	S	2	1	C	16	29	E	
7/7/13	9:00	RPM	NBC	10:00	10:02	S	2	1	C	0	6	E	
7/7/13	9:00	RPM	MB	10:05	10:33	S	2	1	C	2415	116	G	
7/7/13	9:00	RPM	WM	11:17	11:26	S	3	2	C	358	4	E	
7/8/13	9:00	EWW	SP	9:12	9:16	S	1	1	C	0	39	E	
7/8/13	9:00	EWW	SB	9:20	9:34	S	1	1	C	73	25	E	
7/8/13	9:00	EWW	FP	9:36	9:38	S	2	1	C	0	1	E	
7/8/13	9:00	EWW	FB	9:42	9:49	S	3	2	C	43	23	E	
7/8/13	9:00	EWW	CG	9:58	10:04	S	3	2	C	0	1	E	
7/8/13	9:00	EWW	BC	10:08	10:18	S	3	2	C	30	4	E	
7/8/13	9:00	EWW	FR	10:18	10:20	S	3	2	C	1	0	E	
7/8/13	9:00	RPM	NBC	9:25	9:26	S	3	1	C	0	4	E	
7/8/13	9:00	RPM	MB	9:29	9:43	S	3	1	C	440	11	G	
7/8/13	9:00	RPM	WM	10:28	10:32	S	4	2	C	27	3	E	
7/9/13	14:00	EWW	SP	13:55	13:56	S	1	1	C	0	0	E	
7/9/13	14:00	EWW	SB	14:00	14:20	S	1	0	C	97	4	E	
7/9/13	14:00	EWW	FP	14:26	14:28	S	1	0	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
7/9/13	14:00	EWW	FB	14:29	14:36	S	1	1	C	86	8	E	
7/9/13	14:00	EWW	CG	14:50	14:59	S	1	2	C	0	0	E	
7/9/13	14:00	EWW	BC	15:00	15:10	S	1	0	C	0	0	E	
7/9/13	14:00	RPM	FR	15:15	15:16	S	2	0	C	4	4	E	
7/9/13	14:00	RPM	NBC	15:20	15:21	S	2	0	C	0	2	E	
7/9/13	14:00	RPM	MB	15:40		GP	2	0	C	365	7	E	"photo ct"
7/9/13	14:00	RPM	WM	16:30	16:31	S	3	3	C	0	0	E	
7/10/13	17:00	EWW	SP	17:00	17:20	S	1	1	C	2	0	E	
7/10/13	17:00	EWW	SB	17:23	17:31	S	1	0	C	71	1	E	
7/10/13	17:00	EWW	FP	17:38	17:39	S	1	0	C	0	1	E	
7/10/13	17:00	EWW	FB	17:43	17:49	S	1	0	C	78	2	E	
7/10/13	17:00	RPM	CG	17:18	17:21	S	1	0	C	0	0	E	
7/10/13	17:00	RPM	BC	17:21	17:28	S	1	0	C	0	0	E	
7/10/13	17:00	RPM	FR	17:28	17:29	S	1	0	C	4	1	E	
7/10/13	17:00	RPM	NBC	17:34	17:35	S	1	0	C	0	1	E	
7/10/13	17:00	RPM	MB	17:37	17:50	S	1	0	C	350	7	G	
7/10/13	17:00	RPM	WM	18:32	18:33	S	2	1	C	0	0	E	
7/11/13	9:00	EWW	SP	9:26	9:30	S	1	0	C	0	2	E	
7/11/13	9:00	EWW	SB	9:35	9:43	S	1	0	C	78	24	E	
7/11/13	9:00	EWW	FP	9:45	9:50	S	1	1	C	0	0	E	
7/11/13	9:00	EWW	FB	9:53	10:00	S	1	1	C	64	14	E	
7/11/13	9:00	EWW	CG	10:15	10:18	S	1	1	C	0	2	E	
7/11/13	9:00	EWW	BC	10:18	10:25	S	1	1	C	0	0	E	
7/11/13	9:00	EWW	FR	10:25	10:28	S	1	1	C	10	2	E	
7/11/13	9:00	RPM	NBC	9:35	9:36	S	1	0	C	0	1	E	
7/11/13	9:00	RPM	MB	9:40	9:55	S	1	1	C	347	5	G	
7/11/13	9:00	RPM	WM	10:38	10:39	S	2	1	C	0	0	E	
7/12/13	9:00	RPM	SP	9:57	9:59	S	2	1	C	1	1	E	
7/12/13	9:00	RPM	SB	10:03	10:12	S	2	1	C	116	14	E	
7/12/13	9:00	RPM	FP	10:14	10:15	S	2	1	C	0	2	E	
7/12/13	9:00	RPM	FB	10:17	10:26	S	2	1	C	115	11	E	
7/12/13	9:00	RPM	CG	10:37	10:40	S	3	1	C	0	1	E	
7/12/13	9:00	RPM	BC	10:41	10:46	S	3	1	C	0	4	E	
7/12/13	9:00	RPM	FR	10:46	10:49	S	3	1	C	13	3	E	
7/12/13	9:00	BMH	NBC	10:21	10:22	S	2	2	C	0	2	E	
7/12/13	9:00	BMH	MB	10:26	10:33	S	2	2	C	265	11	G	
7/12/13	9:00	BMH	WM	11:07	11:08	S	2	1	C	1	7	E	
7/13/13	17:00	BMH	SP	17:26	17:27	S	1	0	C	15	10	E	
7/13/13	17:00	BMH	SB	17:29	17:39	S	1	0	C	215	18	E	
7/13/13	17:00	BMH	FP	17:42	17:43	S	1	0	C	3	3	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
7/13/13	17:00	BMH	FB	17:44	17:56	S	1	0	C	218	9	E	
7/13/13	17:00	BMH	CG	18:06	18:10	S	1	0	C	20	2	E	
7/13/13	17:00	BMH	BC	18:11	18:16	S	1	0	C	3	1	E	
7/13/13	17:00	BMH	FR	18:17	18:18	S	1	0	C	23	6	E	
7/13/13	17:00	RPM	NBC	17:00	17:02	S	0	0	C	0	12	E	
7/13/13	17:00	RPM	MB	17:05	17:20	S	0	0	C	1560	28	G	
7/13/13	17:00	RPM	WM	17:00		GP	0	0	C	0	0	E	"Photo ct from ASLC West Main camera IMG_7756.JPG @ 1700."
7/14/13	9:00	RPM	SP	9:32	9:34	S	2	1	C	0	4	E	
7/14/13	9:00	RPM	SB	9:40	9:49	S	2	1	C	174	53	E	
7/14/13	9:00	RPM	FP	9:51	9:52	S	2	1	C	18	8	E	
7/14/13	9:00	RPM	FB	9:55	10:08	S	2	1	C	236	62	E	
7/14/13	9:00	RPM	CG	10:39	10:42	S	2	1	C	2	62	E	
7/14/13	9:00	RPM	BC	10:42	11:01	S	2	1	C	78	8	E	
7/14/13	9:00	RPM	FR	11:01	11:04	S	2	1	C	22	19	E	
7/14/13	9:00	BMH	NBC	9:48	9:49	S	2	0	C	1	18	E	
7/14/13	9:00	RPM	MB	9:52		GP	2	0	C	1539	122	E	"photo ct"
7/14/13	9:00	RPM	WM	10:50	10:51	S	2	1	C	0	21	E	
7/15/13	17:00	RPM	SP	17:36	17:38	S	3	1	C	0	0	E	
7/15/13	17:00	RPM	SB	17:40	17:50	S	2	1	C	266	8	E	
7/15/13	17:00	RPM	FP	17:52	17:54	S	2	1	C	30	0	E	
7/15/13	17:00	RPM	FB	17:56	18:08	S	2	1	C	128	2	E	
7/15/13	17:00	RPM	CG	18:26	18:30	S	2	1	C	1	16	E	
7/15/13	17:00	RPM	BC	18:30	18:39	S	2	0	C	88	8	E	
7/15/13	17:00	RPM	FR	18:39	18:40	S	2	0	C	5	2	E	
7/15/13	17:00	BMH	NBC	17:24	17:25	S	1	0	C	0	1	E	
7/15/13	17:00	BMH	MB	17:28	17:40	S	1	0	C	2075	19	F	
7/15/13	17:00	RPM	WM	17:00		GP	3	2	C	0	0	E	"Photo ct from ASLC West Main camera IMG_9436.JPG @ 1700."
7/16/13	9:00	BMH	SP	9:42	9:43	S	2	1	C	0	3	E	
7/16/13	9:00	BMH	SB	9:46	9:59	S	2	0	C	226	36	E	
7/16/13	9:00	BMH	FP	10:01	10:04	S	2	0	C	33	0	E	
7/16/13	9:00	BMH	FB	10:05	10:15	S	2	1	C	136	31	E	
7/16/13	9:00	BMH	CG	10:20	10:23	S	2	1	C	2	9	E	
7/16/13	9:00	BMH	BC	10:24	10:37	S	2	0	C	84	26	E	
7/16/13	9:00	BMH	FR	10:38	10:40	S	2	0	C	5	12	E	
7/16/13	9:00	RPM	NBC	9:40	9:43	S	0	0	C	0	10	E	
7/16/13	9:00	RPM	MB	9:47	10:06	S	0	0	C	2141	180	G	
7/16/13	9:00	RPM	WM	9:00		GP	3	2	C	0	0	E	"Photo ct from ASLC West Main

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
													camera IMG_9796.JPG @ 0900."
7/17/13	17:00	RPM	SP	17:38	17:40	S	2	1	C	0	7	E	
7/17/13	17:00	RPM	SB	17:41	17:47	S	2	1	C	136	15	E	
7/17/13	17:00	RPM	FP	17:48	17:49	S	2	1	C	8	3	E	
7/17/13	17:00	RPM	FB	17:51	18:01	S	2	1	C	192	12	E	
7/17/13	17:00	RPM	CG	18:35	18:40	S	2	1	C	1	7	E	
7/17/13	17:00	RPM	BC	18:40	18:47	S	2	1	C	0	0	E	
7/17/13	17:00	RPM	FR	18:48	18:49	S	2	1	C	0	0	E	
7/17/13	17:00	BMH	MB	17:28	17:40	S	0	0	C	350	47	G	
7/17/13	17:00	RPM	WM	17:00		GP	2	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_1117.JPG @ 1700."
7/18/13	14:00	BMH	SP	14:41	14:42	S	2	0	C	0	2	E	
7/18/13	14:00	BMH	SB	14:45	14:54	S	2	0	C	109	4	E	
7/18/13	14:00	BMH	FP	14:56	14:57	S	2	0	C	0	1	E	
7/18/13	14:00	BMH	FB	14:58	15:12	S	2	0	C	161	4	E	
7/18/13	14:00	BMH	CG	15:25	15:27	S	1	0	C	1	0	E	
7/18/13	14:00	BMH	BC	15:28	15:35	S	1	0	C	0	1	E	
7/18/13	14:00	BMH	FR	15:36	15:37	S	1	0	C	4	2	E	
7/18/13	14:00	RPM	NBC	14:20	14:21	S	1	0	C	0	3	E	
7/18/13	14:00	RPM	MB	14:24	14:30	S	1	0	C	272	14	G	
7/18/13	14:00	RPM	WM	14:00		GP	1	1	O	0	0	E	"Photo ct from ASLC West Main camera IMG_1777.JPG @ 1400."
7/19/13	14:00	RPM	SP	14:31	14:32	S	1	0	C	0	0	E	
7/19/13	14:00	RPM	SB	14:34	14:42	S	1	0	C	117	2	E	
7/19/13	14:00	RPM	FP	14:45	14:47	S	1	0	C	0	0	E	
7/19/13	14:00	RPM	FB	14:50	15:02	S	1	0	C	164	2	E	
7/19/13	14:00	RPM	CG	15:10	15:13	S	1	0	C	1	0	E	
7/19/13	14:00	RPM	BC	15:13	15:20	S	1	0	C	0	0	E	
7/19/13	14:00	RPM	FR	15:20	15:21	S	1	0	C	5	0	E	
7/19/13	14:00	BMH	NBC	14:25	14:26	S	1	0	C	0	0	E	
7/19/13	14:00	BMH	MB	14:28	14:35	S	1	0	C	199	0	G	
7/19/13	14:00	BMH	WM	15:08	15:09	S	2	1	C	0	0	E	
7/20/13	17:00	BMH	SP	17:21	17:22	S	3	0	C	0	0	E	
7/20/13	17:00	BMH	SB	17:27	17:36	S	3	0	C	102	8	E	
7/20/13	17:00	BMH	FP	17:38	17:39	S	2	0	C	0	0	E	
7/20/13	17:00	BMH	FB	17:41	17:58	S	2	0	C	106	5	E	
7/20/13	17:00	BMH	CG	18:12	18:14	S	2	0	C	0	0	E	
7/20/13	17:00	BMH	BC	18:15	18:21	S	2	0	C	0	0	E	
7/20/13	17:00	BMH	FR	18:22	18:23	S	2	0	C	0	0	E	
7/20/13	17:00	RPM	NBC	16:47	16:49	S	1	0	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
7/20/13	17:00	RPM	MB	16:57	17:04	S	1	0	C	240	3	G	
7/20/13	17:00	EWW	WM	17:00		GP	2	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_3636.JPG @ 1700."
7/21/13	14:00	RPM	SP	14:40	14:42	S	1	0	C	1	3	E	
7/21/13	14:00	RPM	SB	14:43	14:55	S	1	0	C	68	4	E	
7/21/13	14:00	RPM	FP	14:59	14:51	S	1	0	C	0	0	E	
7/21/13	14:00	RPM	FB	15:03	15:11	S	1	0	C	90	3	E	
7/21/13	14:00	RPM	CG	15:18	15:21	S	1	0	C	1	0	E	
7/21/13	14:00	RPM	BC	15:21	15:27	S	1	0	C	0	0	E	
7/21/13	14:00	RPM	FR	15:27	15:29	S	1	0	C	7	0	E	
7/21/13	14:00	BMH	NBC	14:56	14:57	S	1	1	C	0	0	E	
7/21/13	14:00	BMH	MB	15:01	15:13	S	1	0	C	236	7	G	
7/21/13	14:00	EWW	WM	14:00		GP	2	2	C	0	0	E	"Photo ct from ASLC West Main camera IMG_4296.JPG @ 1400."
7/22/13	14:00	BMH	SP	14:10	14:11	S	1	1	C	0	0	E	
7/22/13	14:00	BMH	SB	14:15	14:22	S	1	0	C	59	5	E	
7/22/13	14:00	BMH	FP	14:24	14:25	S	2	0	C	0	0	E	
7/22/13	14:00	BMH	FB	14:26	14:35	S	2	0	C	138	14	E	
7/22/13	14:00	BMH	CG	14:42	14:44	S	2	1	C	0	2	E	
7/22/13	14:00	BMH	BC	14:45	14:52	S	2	1	C	0	0	E	
7/22/13	14:00	BMH	FR	14:53	14:54	S	2	1	C	11	0	E	
7/22/13	14:00	RPM	NBC	14:22	14:23	S	2	0	C	0	3	E	
7/22/13	14:00	RPM	MB	14:26	14:33	S	1	0	C	470	23	G	
7/22/13	14:00	RPM	WM	14:00		GP	2	2	C	0	0	E	"Photo ct from ASLC West Main camera IMG_5136.JPG @ 1400."
7/23/13	14:00	RPM	SP	14:27	14:29	S	4	1	C	0	1	E	
7/23/13	14:00	RPM	SB	14:31	14:42	S	4	0	C	156	28	E	
7/23/13	14:00	RPM	FP	14:43	14:44	S	4	0	C	0	3	E	
7/23/13	14:00	RPM	FB	14:46	14:53	S	4	1	C	191	12	E	
7/23/13	14:00	RPM	CG	14:57	15:00	S	4	2	C	0	4	E	
7/23/13	14:00	RPM	BC	15:00	15:06	S	4	2	C	0	3	E	
7/23/13	14:00	RPM	FR	15:06	15:07	S	4	2	C	5	3	E	
7/23/13	14:00	BMH	NBC	14:32	14:33	S	4	3	C	0	4	E	
7/23/13	14:00	BMH	MB	14:24	14:29	S	4	1	C	500	31	G	
7/23/13	14:00	RPM	WM	14:00		GP	3	2	C	0	0	E	"Photo ct from ASLC West Main camera IMG_5976.JPG @ 1400."
7/24/13	14:00	BMH	SP	14:44	14:45	S	4	0	C	0	2	E	
7/24/13	14:00	BMH	SB	14:47	14:55	S	4	0	C	197	18	E	
7/24/13	14:00	BMH	FP	14:57	14:58	S	4	1	C	0	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
7/24/13	14:00	BMH	FB	15:00	15:07	S	4	0	C	167	26	E	
7/24/13	14:00	BMH	CG	15:29	15:31	S	4	2	C	0	8	E	
7/24/13	14:00	BMH	BC	15:32	15:36	S	4	2	C	0	2	E	
7/24/13	14:00	BMH	FR	15:37	15:39	S	4	2	C	9	7	E	
7/24/13	14:00	RPM	NBC	13:57	13:59	S	3	1	C	0	11	E	
7/24/13	14:00	RPM	MB	14:02	14:03	S	3	0	C	1180	132	G	
7/24/13	14:00	RPM	WM	14:00		GP	2	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_6816.JPG @ 1400."
7/25/13	14:00	RPM	SP	14:40	14:44	S	0	0	C	4	2	E	
7/25/13	14:00	RPM	SB	14:47	14:56	S	0	0	C	210	9	E	
7/25/13	14:00	RPM	FP	14:58	14:59	S	0	0	C	46	4	E	
7/25/13	14:00	RPM	FB	15:02	15:11	S	0	0	C	210	19	E	
7/25/13	14:00	RPM	CG	15:16	15:18	S	0	0	C	0	13	E	
7/25/13	14:00	RPM	BC	15:18	15:26	S	0	0	C	2	8	E	
7/25/13	14:00	RPM	FR	15:26	15:27	S	0	0	C	19	4	E	
7/25/13	14:00	BMH	NBC	14:14	14:15	S	0	0	C	0	2	E	
7/25/13	14:00	BMH	MB	14:20	14:35	S	0	0	C	1430	111	G	
7/25/13	14:00	RPM	WM	14:00		GP	0	0	C	60	21	E	"Photo ct from ASLC West Main camera IMG_7656.JPG @ 1400."
7/26/13	14:00	BMH	SP	14:09	14:10	S	2	0	C	3	3	E	
7/26/13	14:00	BMH	SB	14:13	14:22	S	2	0	C	246	15	E	
7/26/13	14:00	BMH	FP	14:24	14:27	S	1	0	C	76	2	E	
7/26/13	14:00	BMH	FB	14:29	14:40	S	1	0	C	227	21	E	
7/26/13	14:00	BMH	CG	14:57	14:59	S	1	0	C	8	3	E	
7/26/13	14:00	BMH	BC	15:00	15:05	S	1	0	C	0	0	E	
7/26/13	14:00	BMH	FR	15:06	15:07	S	1	0	C	5	6	E	
7/26/13	14:00	RPM	NBC	13:56	13:59	S	0	0	C	0	6	E	
7/26/13	14:00	RPM	MB	14:31		GP	0	0	C	1892	90	G	"photo ct"
7/26/13	14:00	RPM	WM	14:55	15:02	S	0	0	C	125	6	E	
7/27/13	14:00	RPM	SP	13:54	13:57	S	1	0	C	28	3	E	
7/27/13	14:00	RPM	SB	14:00	14:09	S	1	0	C	241	6	E	
7/27/13	14:00	RPM	FP	14:12	14:16	S	1	0	C	86	8	E	
7/27/13	14:00	RPM	FB	14:19	14:32	S	1	0	C	261	20	E	
7/27/13	14:00	RPM	CG	14:41	14:45	S	1	0	C	16	5	E	
7/27/13	14:00	RPM	BC	14:45	14:51	S	1	0	C	1	5	E	
7/27/13	14:00	RPM	FR	14:51	14:52	S	1	0	C	0	3	E	
7/27/13	14:00	BMH	NBC	14:02	14:03	S	1	0	F	0	3	E	
7/27/13	14:00	BMH	MB	15:15	15:22	S	1	0	C	1430	57	G	
7/27/13	14:00	BMH	WM	14:45	14:46	S	2	2	F	55	0	E	
7/28/13	17:00	BMH	SP	17:45	17:46	S	2	0	C	6	0	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
7/28/13	17:00	BMH	SB	17:49	17:56	S	2	0	C	159	24	E	
7/28/13	17:00	BMH	FP	18:00	18:01	S	2	0	C	9	4	E	
7/28/13	17:00	BMH	FB	18:04	18:11	S	2	0	C	99	14	E	
7/28/13	17:00	BMH	CG	18:21	18:23	S	2	0	C	0	0	E	
7/28/13	17:00	BMH	BC	18:24	18:29	S	3	0	C	0	0	E	
7/28/13	17:00	BMH	FR	18:30	18:31	S	3	0	C	6	1	E	
7/28/13	17:00	RPM	NBC	17:47	17:49	S	2	0	C	0	2	E	
7/28/13	17:00	RPM	MB	17:55	18:23	S	2	0	C	240	8	G	
7/28/13	17:00	RPM	WM	17:00		GP	2	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_0357.JPG @ 1700."
7/29/13	17:00	RPM	SP	17:27	17:29	S	1	0	C	14	2	E	
7/29/13	17:00	RPM	SB	17:31	17:40	S	1	0	C	109	10	E	
7/29/13	17:00	RPM	FP	17:41	17:42	S	1	0	C	1	2	E	
7/29/13	17:00	RPM	FB	17:44	17:50	S	1	0	C	53	14	E	
7/29/13	17:00	RPM	CG	17:55	17:59	S	1	0	C	0	3	E	
7/29/13	17:00	RPM	BC	18:00	18:05	S	1	0	C	0	0	E	
7/29/13	17:00	RPM	FR	18:05	18:06	S	1	0	C	0	1	E	
7/29/13	17:00	BMH	NBC	17:25	17:26	S	0	0	C	0	0	E	
7/29/13	17:00	BMH	MB	17:11	17:18	S	0	0	C	165	2	G	
7/29/13	17:00	BMH	WM	17:00		GP	1	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_1197.JPG @ 1700."
7/30/13	14:00	BMH	SP	14:03	14:04	S	0	0	C	0	0	E	
7/30/13	14:00	BMH	SB	14:06	14:11	S	0	0	C	70	0	E	
7/30/13	14:00	BMH	FP	14:13	14:14	S	0	0	C	0	0	E	
7/30/13	14:00	BMH	FB	14:15	14:22	S	0	0	C	78	2	E	
7/30/13	14:00	BMH	CG	14:33	14:42	S	0	0	C	0	0	E	
7/30/13	14:00	BMH	BC	14:43	14:50	S	1	0	C	0	0	E	
7/30/13	14:00	BMH	FR	14:51	14:52	S	1	0	C	0	0	E	found broken tusk on FR
7/30/13	14:00	RPM	NBC	14:15	14:16	S	0	0	C	1	1	E	
7/30/13	14:00	RPM	MB	14:20	14:28	S	0	0	C	200	9	G	
7/30/13	14:00	RPM	WM	14:00		GP	0	0	C	0	0	E	"Photo ct from ASLC West Main camera IMG_1857.JPG @ 1400."
7/31/13	17:00	RPM	SP	17:09	17:12	S	4	3	C	0	0	E	
7/31/13	17:00	RPM	SB	17:14	17:19	S	4	3	C	47	2	E	
7/31/13	17:00	RPM	FP	17:21	17:22	S	4	3	C	0	0	E	
7/31/13	17:00	RPM	FB	17:24	17:34	S	4	3	C	213	4	E	
7/31/13	17:00	RPM	CG	17:39	17:43	S	4	3	C	0	2	E	
7/31/13	17:00	RPM	BC	17:43	17:50	S	4	3	C	0	0	E	
7/31/13	17:00	RPM	FR	17:50	17:51	S	4	3	C	13	2	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
7/31/13	17:00	BMH	NBC	18:30	18:31	S	4	2	C	0	0	E	
7/31/13	17:00	BMH	MB	18:03	18:09	S	4	2	C	410	11	G	counted from traverse trail
7/31/13	17:00	BMH	WM	17:24	17:25	S	1	1	C	0	0	E	
8/1/13	9:00	BMH	SP	9:24	9:25	S	5	3	C	0	0	E	
8/1/13	9:00	BMH	SB	9:28	9:34	S	5	3	C	58	0	E	
8/1/13	9:00	BMH	FP	9:35	9:36	S	5	3	C	0	0	E	
8/1/13	9:00	BMH	FB	9:38	9:55	S	5	3	C	194	17	E	
8/1/13	9:00	BMH	CG	10:00	10:02	S	5	3	C	0	0	E	
8/1/13	9:00	BMH	BC	10:03	10:10	S	5	2	C	39	1	E	
8/1/13	9:00	BMH	FR	10:11	10:12	S	5	3	C	12	0	E	
8/1/13	9:00	RPM	NBC	9:39	9:41	S	3	1	C	0	0	E	
8/1/13	9:00	RPM	MB	9:43	9:49	S	3	1	C	320	6	G	
8/1/13	9:00	RPM	WM	9:00		GP	1	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_3237.JPG @ 0900."
8/2/13	9:00	RPM	SP	9:28	9:29	S	3	3	C	0	0	E	
8/2/13	9:00	RPM	SB	9:31	9:34	S	3	3	C	1	0	E	
8/2/13	9:00	RPM	FP	9:35	9:36	S	3	3	C	0	0	E	
8/2/13	9:00	RPM	FB	9:38	9:46	S	3	2	C	73	6	E	
8/2/13	9:00	RPM	CG	9:50	9:53	S	3	2	C	0	0	E	
8/2/13	9:00	RPM	BC	9:53	9:59	S	3	1	C	0	0	E	
8/2/13	9:00	RPM	FR	9:59	10:00	S	3	1	C	0	0	E	
8/2/13	9:00	BMH	NBC	9:20	9:21	S	4	1	C	0	0	E	
8/2/13	9:00	BMH	MB	9:24	9:30	S	4	2	C	116	3	G	
8/2/13	9:00	RPM	WM	9:00		GP	1	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_4077.JPG @ 0900."
8/3/13	17:00	BMH	SP	17:27	17:28	S	2	0	C	0	0	E	
8/3/13	17:00	BMH	SB	17:32	17:36	S	2	0	C	1	0	E	
8/3/13	17:00	BMH	FP	17:37	17:38	S	2	0	C	0	0	E	
8/3/13	17:00	BMH	FB	17:40	17:46	S	2	0	C	233	1	E	
8/3/13	17:00	BMH	CG	17:53	17:55	S	2	0	C	0	0	E	
8/3/13	17:00	BMH	BC	17:56	18:03	S	2	0	C	0	0	E	
8/3/13	17:00	BMH	FR	18:04	18:05	S	2	0	C	7	0	E	
8/3/13	17:00	RPM	NBC	17:02	17:04	S	2	0	C	0	0	E	
8/3/13	17:00	RPM	MB	17:05	17:16	S	2	0	C	630	20	G	
8/3/13	17:00	RPM	WM	17:00		S	2	2	C	54	0	E	"Photo ct from ASLC West Main camera IMG_5397.JPG @ 1700."
8/4/13	17:00	RPM	SP	17:17	17:18	S	2	0	C	4	0	E	
8/4/13	17:00	RPM	SB	17:21	17:28	S	2	0	C	78	1	E	
8/4/13	17:00	RPM	FP	17:30	17:31	S	2	0	C	1	1	E	
8/4/13	17:00	RPM	FB	17:33	17:44	S	2	0	C	318	1	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
8/4/13	17:00	RPM	CG	17:52	17:55	S	2	0	C	11	1	E	
8/4/13	17:00	RPM	BC	17:55	18:04	S	2	0	C	32	2	E	
8/4/13	17:00	RPM	FR	18:04	18:06	S	2	0	C	23	1	E	
8/4/13	17:00	BMH	NBC	17:33	17:34	S	1	0	C	0	0	E	
8/4/13	17:00	BMH	MB	17:10		GP	1	1	C	1982	-	E	"photo ct"
8/4/13	17:00	BMH	WM	16:43	16:45	S	1	2	C	31	0	E	
8/5/13	9:00	BMH	SP	9:31	9:32	S	2	2	C	1	7	E	
8/5/13	9:00	BMH	SB	9:35	9:42	S	2	0	C	132	26	E	
8/5/13	9:00	BMH	FP	9:44	9:46	S	2	1	C	11	2	E	
8/5/13	9:00	BMH	FB	9:47	9:55	S	2	1	C	258	52	E	
8/5/13	9:00	BMH	CG	10:03	10:06	S	3	0	C	31	4	E	
8/5/13	9:00	BMH	BC	10:07	10:21	S	2	0	C	104	18	E	
8/5/13	9:00	BMH	FR	10:22	10:25	S	2	0	C	19	15	E	
8/5/13	9:00	RPM	NBC	9:44	9:45	S	2	0	C	4	6	E	
8/5/13	9:00	RPM	MB	9:47	10:02	S	2	0	C	2100	90	G	
8/5/13	9:00	RPM	WM	9:00		GP	2	1	C	83	0	E	"Photo ct from ASLC West Main camera IMG_6597.JPG @ 0900."
8/6/13	14:00	RPM	SP	14:23	14:24	S	5	3	C	0	2	E	
8/6/13	14:00	RPM	SB	14:26	14:29	S	5	3	C	29	0	E	
8/6/13	14:00	RPM	FP	14:30	14:31	S	5	3	C	0	0	E	
8/6/13	14:00	RPM	FB	14:33	14:40	S	5	3	C	66	3	E	
8/6/13	14:00	RPM	CG	14:47	14:49	S	5	3	C	0	3	E	
8/6/13	14:00	RPM	BC	14:49	14:55	S	5	3	C	0	5	E	
8/6/13	14:00	RPM	FR	14:55	14:56	S	5	3	C	0	3	E	
8/6/13	14:00	BMH	NBC	14:00	14:01	S	5	3	C	0	0	E	
8/6/13	14:00	BMH	MB	14:03	14:10	S	5	3	P	175	0	G	
8/6/13	14:00	RPM	WM	14:00		GP	1	1	C	98	0	E	"Photo ct from ASLC West Main camera IMG_7737.JPG @ 1400."
8/7/13	14:00	BMH	SP	14:14	14:15	S	6	3	C	0	0	E	
8/7/13	14:00	BMH	SB	14:16	14:19	S	6	3	C	0	0	E	
8/7/13	14:00	BMH	FP	14:20	14:21	S	6	3	C	0	0	E	
8/7/13	14:00	BMH	FB	14:22	14:26	S	6	3	C	0	0	E	
8/7/13	14:00	BMH	CG	14:31	14:33	S	6	3	C	0	0	E	
8/7/13	14:00	BMH	BC	14:34	14:39	S	6	3	C	0	0	E	
8/7/13	14:00	BMH	FR	14:40	14:41	S	6	3	C	0	0	E	
8/7/13	14:00	RPM	NBC	14:31	14:32	S	5	3	C	0	4	E	
8/7/13	14:00	RPM	MB	14:34	14:40	S	5	2	C	49	1	G	
8/7/13	14:00	RPM	WM	14:00		GP	2	1	C	195	1	E	"Photo ct from ASLC West Main camera IMG_8577.JPG @ 1400."

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
8/8/13	17:00	RPM	SP	16:58	17:00	S	3	2	C	0	2	E	
8/8/13	17:00	RPM	SB	17:02	17:04	S	3	2	C	0	1	E	
8/8/13	17:00	RPM	FP	17:05	17:06	S	3	2	C	0	0	E	
8/8/13	17:00	RPM	FB	17:08	17:31	S	3	2	C	0	1	E	
8/8/13	17:00	RPM	CG	17:48	17:50	S	3	1	C	0	0	E	
8/8/13	17:00	RPM	BC	17:50	17:56	S	3	1	C	0	0	E	
8/8/13	17:00	RPM	FR	17:56	17:57	S	3	1	C	0	2	E	
8/8/13	17:00	BMH	NBC	17:03	17:04	S	3	1	C	0	2	E	
8/8/13	17:00	BMH	MB	17:07	17:14	S	2	1	C	86	6	G	
8/8/13	17:00	RPM	WM	17:00		GP	3	2	C	106	5	E	"Photo ct from ASLC West Main camera IMG_9597.JPG @ 1700."
8/9/13	9:00	BMH	SP	9:25	9:26	S	3	2	C	0	0	E	
8/9/13	9:00	BMH	SB	9:29	9:32	S	3	1	C	0	0	E	
8/9/13	9:00	BMH	FP	9:34	9:35	S	3	1	C	0	0	E	
8/9/13	9:00	BMH	FB	9:36	9:40	S	3	1	C	1	1	E	
8/9/13	9:00	BMH	CG	9:46	9:48	S	3	0	C	0	0	E	
8/9/13	9:00	BMH	BC	9:49	9:54	S	2	0	C	1	0	E	
8/9/13	9:00	BMH	FR	9:55	9:56	S	2	0	C	0	4	E	
8/9/13	9:00	RPM	NBC	9:41	9:42	S	2	0	C	0	2	E	
8/9/13	9:00	RPM	MB	9:44	9:51	S	2	0	C	330	23	G	
8/9/13	9:00	RPM	WM	9:00		GP	2	1	C	81	0	E	"Photo ct from ASLC West Main camera IMG_9957.JPG @ 0900."
8/10/13	14:00	RPM	SP	14:29	14:31	S	2	1	C	0	1	E	
8/10/13	14:00	RPM	SB	14:32	14:36	S	2	1	C	1	3	E	
8/10/13	14:00	RPM	FP	14:37	14:38	S	2	1	C	0	0	E	
8/10/13	14:00	RPM	FB	14:40	14:44	S	2	1	C	0	4	E	
8/10/13	14:00	RPM	CG	14:54	14:56	S	2	1	C	0	2	E	
8/10/13	14:00	RPM	BC	14:56	15:01	S	2	0	C	0	1	E	
8/10/13	14:00	RPM	FR	15:01	15:02	S	2	0	C	16	1	E	
8/10/13	14:00	BMH	NBC	14:43	14:44	S	2	1	C	0	2	E	
8/10/13	14:00	BMH	MB	15:31	15:43	S	2	1	C	575	26	G	
8/10/13	14:00	RPM	WM	14:00		GP	2	1	C	0	0	E	"Photo ct from ASLC West Main camera IMG_1938.JPG @ 1400."
8/11/13	9:00	BMH	SP	9:34	9:35	S	1	1	C	0	2	E	
8/11/13	9:00	BMH	SB	9:41	9:44	S	1	1	C	0	10	E	
8/11/13	9:00	BMH	FP	9:45	9:46	S	1	0	C	0	0	E	
8/11/13	9:00	BMH	FB	9:48	9:55	S	0	1	C	45	26	E	
8/11/13	9:00	BMH	CG	10:08	10:11	S	0	0	C	9	10	E	
8/11/13	9:00	BMH	BC	10:12	10:22	S	0	0	C	10	1	E	
8/11/13	9:00	BMH	FR	10:23	10:25	S	0	0	C	36	11	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
8/11/13	9:00	RPM	NBC	9:34	9:36	S	1	0	C	0	7	E	
8/11/13	9:00	RPM	MB	9:40	9:56	S	1	0	C	1380	125	G	
8/11/13	9:00	RPM	WM	19:15	19:16	GP	2	2	C	2	0	E	"Photo ct from ASLC West Main camera IMG_1638.JPG @ 0900."
8/12/13	14:00	RPM	SP	14:16	14:17	S	0	0	C	17	2	E	
8/12/13	14:00	RPM	SB	14:19	14:27	S	0	0	C	227	12	E	
8/12/13	14:00	RPM	FP	14:28	14:29	S	0	0	C	0	2	E	
8/12/13	14:00	RPM	FB	14:31	14:42	S	0	0	C	326	24	E	
8/12/13	14:00	RPM	CG	14:47	14:50	S	1	0	C	0	10	E	
8/12/13	14:00	RPM	BC	14:50	14:56	S	1	0	C	65	8	E	
8/12/13	14:00	BMH	FR	14:48	14:50	S	0	0	C	18	4	E	
8/12/13	14:00	BMH	NBC	14:55	14:56	S	0	0	C	0	2	E	
8/12/13	14:00	BMH	MB	14:59	15:10	S	0	0	C	1250	135	G	
8/12/13	14:00	BMH	WM	16:05	16:06	S	0	0	C	0	24	E	
8/13/13	9:00	BMH	SP	9:24	9:25	S	4	3	C	0	8	E	
8/13/13	9:00	BMH	SB	9:28	9:39	S	3	3	C	268	17	E	
8/13/13	9:00	BMH	FP	9:41	9:42	S	3	3	C	18	1	E	
8/13/13	9:00	BMH	FB	9:43	9:51	S	3	3	C	171	30	E	
8/13/13	9:00	BMH	CG	9:56	9:58	S	3	3	C	7	1	E	
8/13/13	9:00	BMH	BC	9:59	10:02	S	3	1	C	51	5	E	
8/13/13	9:00	RPM	FR	10:06	10:08	S	3	1	C	19	21	E	
8/13/13	9:00	RPM	NBC	10:13	10:14	S	3	1	C	1	4	E	
8/13/13	9:00	RPM	MB	10:16	10:29	S	3	2	C	930	32	G	
8/13/13	9:00	RPM	WM	11:02	11:12	S	2	1	C	645	20	E	
8/14/13	17:00	RPM	SP	17:10	17:11	S	2	1	C	0	2	E	
8/14/13	17:00	RPM	SB	17:13	17:18	S	2	1	C	34	4	E	
8/14/13	17:00	RPM	FP	17:19	17:20	S	2	1	C	0	0	E	
8/14/13	17:00	RPM	FB	17:21	17:27	S	2	1	C	46	2	E	
8/14/13	17:00	RPM	CG	17:38	17:42	S	2	1	C	0	0	E	
8/14/13	17:00	RPM	BC	17:42	17:48	S	2	1	C	0	0	E	
8/14/13	17:00	BMH	FR	17:16	17:17	S	2	1	C	0	0	E	
8/14/13	17:00	BMH	NBC	17:21	17:22	S	2	0	C	0	0	E	
8/14/13	17:00	BMH	MB	17:23	17:31	S	1	1	C	620	21	G	
8/14/13	17:00	RPM	WM	17:00		S	2	2	C	173	0	E	"Photo ct from ASLC West Main camera IMG_4638.JPG @ 1700."
8/15/13	17:00	BMH	SP	17:01	17:02	S	0	1	C	0	1	E	
8/15/13	17:00	BMH	SB	17:05	17:12	S	0	1	C	31	15	E	
8/15/13	17:00	BMH	FP	17:13	17:14	S	0	1	C	0	0	E	
8/15/13	17:00	BMH	FB	17:19	17:21	S	0	1	C	0	5	E	

APPENDIX B

Date	Sched. Time	Observ	Beach	Start Time	End Time	Method	BSS	Beach Cond.	Visibility	Land Count	Water Count	Count Quality	COMMENTS
8/15/13	17:00	RPM	CG	16:30	16:33	S	2	1	C	0	3	E	Survey ran early due to camera exchange & closing duties.
8/15/13	17:00	RPM	BC	16:33	16:34	S	2	1	C	0	1	E	Survey ran early due to camera exchange & closing duties.
8/15/13	17:00	RPM	FR	16:35	16:36	S	2	1	C	0	0	E	Survey ran early due to camera exchange & closing duties.
8/15/13	17:00	RPM	NBC	15:45	15:46	S	2	1	C	0	2	E	Survey ran early due to camera exchange & closing duties.
8/15/13	17:00	RPM	MB	14:30		GP	2	1	C	274	69	G	Survey ran early due to camera exchange & closing duties.
8/15/13	17:00	BMH	WM	13:39	13:40	S	2	1	C	4	2	E	Survey ran early due to camera exchange & closing duties.
8/16/13	17:00	RPM	SP	17:21	17:22	S	3	2	C	0	0	E	
8/16/13	17:00	RPM	SB	17:24	17:30	S	3	2	C	44	0	E	
8/16/13	17:00	RPM	FP	17:31	17:32	S	3	2	C	0	0	E	
8/16/13	17:00	RPM	FB	17:34	17:38	S	3	2	C	0	1	E	
8/16/13	17:00	RPM	CG	17:43	17:45	S	3	2	C	0	0	E	
8/16/13	17:00	RPM	BC	17:45	17:51	S	3	2	C	0	0	E	
8/16/13	17:00	BMH	FR	17:51	17:52	S	3	2	C	0	0	E	
8/16/13	17:00	BMH	NBC	17:24	17:25	S	4	3	C	0	0	E	
8/16/13	17:00	BMH	MB	17:26	17:31	S	3	2	C	72	0	G	
8/16/13	17:00		WM			S							NO COUNT

APPENDIX C

Appendix C. 2013 walrus monitoring variability count summary.

DATE	BEACH	DCO	RPM	BMH	GP (BMH)	GP (RPM)	Average of Observer Counts	Absolute average difference from mean observer count or photo count %	DCO % difference from Photo Count or Avg Count	RPM % difference from Photo Count or Avg Count	BMH % difference from Photo Count or Avg Count
5/9/2013	MB	1119			1016		1119	10.14	10.14		
5/12/2013	MB	754		840			797	5.40	-5.40		5.40
5/13/2013	MB	1121	1048	897			1022	11.10	9.69	2.54	-12.23
5/14/2013	MB	1231	1309	1900			1480	18.92	-16.82	-11.55	28.38
5/15/2013	MB	1780	1632	1363			1592	9.58	11.83	2.53	-14.37
5/16/2013	MB	485	728	511			575	7.39	-15.60	26.68	-11.08
5/18/2013	MB	132	124	129			128	0.35	2.86	-3.38	0.52
5/19/2013	MB	297	288	290	361		292	0.38	-17.73	-20.22	-19.67
5/19/2013	MB	604	399	349	572		451	15.04	5.59	-30.24	-38.99
5/20/2013	MB		937	1212		1103	1075	12.80		-15.05	9.88
5/21/2013	MB	1226	1113	1424			1254	9.02	-2.26	-11.27	13.53
5/22/2013	MB		2040			1878	2040	8.63		8.63	
5/23/2013	MB			2300	2540		2300	9.45			-9.45
5/24/2013	MB		2350			2862	2350	17.89		-17.89	
5/28/2013	MB		1174	1047		1434	1111	5.72		-18.13	-26.99
5/28/2013	WM		464	496			480	3.33		-3.33	3.33
5/29/2013	MB		1815	1909			1862	2.52		-2.52	2.52
5/29/2013	WM		352	378			365	3.56		-3.56	3.56
6/7/2013	MB		1779	1486		1690	1633	8.97		5.27	-12.07
6/8/2013	MB		1557	1368			1463	6.46		6.46	-6.46
6/14/2013	MB		2003	1761			1882	6.43		6.43	-6.43
6/16/2013	MB		2151	2199	2011	2014	2175	1.10		6.80	9.35
6/24/2013	MB			548	564	539	552	0.63			-2.84
6/25/2013	MB		2561	2539			2550	0.43		0.43	-0.43
7/6/2013	MB		2252			2184	2252	3.11		3.11	
7/9/2013	MB		343			372	343	7.80		-7.80	
7/13/2013	MB		1588			1546	1588	2.72		2.72	
7/14/2013	MB			1210	1661		1210	27.15			-27.15
7/24/2013	MB		1312			1248	1312	5.13		5.13	
7/26/2013	MB		2280			1982	2280	15.04		15.04	
7/27/2013	MB			1487	1476		1487	0.75			0.75
8/4/2013	MB			2214	1982		2214	11.71			11.71
8/11/2013	MB		1505	1497		1499	1501	0.27		0.40	-0.13

APPENDIX D

Appendix D. Anthropogenic and disturbance events, Round Island, Alaska, 2013.

Date	Start time	End time	Source ID	Stimuli Type A/V/S	BMPs / Regs Violation	Closest approach (m)	Altitude (mAGL)	Beach ID	Walrus # on beach	# Walrus Disturbed	ND	HR	OR	DS
5/6/13	1245	1250	HEL	A/V	No	0	41	FR	4	UNK	UNK	UNK	UNK	UNK
5/6/13	1255	1300	HEL	A/V	No	0	41	FR	4	0	4	0	0	0
5/6/13	2045	2130	SHP	A/V	No	6482	0	FR	UNK	UNK	UNK	UNK	UNK	UNK
5/7/13	1305	1312	HEL	A/V	No	0	41	FR	6	6	0	4	0	2
5/7/13	1320	1330	LGB	A/V	No	400	0	FR	4	1	3	1	0	0
5/7/13	1504	1510	HEL	A/V	No	0	41	FR	4	1	3	1	0	0
5/7/13	1510	1518	HEL	A/V	No	0	41	FR	4	1	3	1	0	0
5/7/13	1518	1526	HEL	A/V	No	0	41	FR	4	1	3	1	0	0
5/7/13	1526	1532	HEL	A/V	No	0	41	FR	4	1	3	1	0	0
5/7/13	1532	1540	HEL	A/V	No	0	41	FR	4	1	3	1	0	0
5/7/13	1556	1610	LGB	A/V	No	400	0	FR	4	0	4	0	0	0
5/9/13	1038	1138	SMB	A/V	No	400	0	FR	3	0	3	0	0	0
5/9/13	1139	1152	SMB	A/V	No	400	0	FR	3	0	3	0	0	0
5/10/13	1038	1045	HEL	A/V	No	0	41	FR	4	0	4	0	0	0
5/10/13	1038	1045	HEL	A/V	No	0	41	MB	1100	0	1100	0	0	0
5/12/13	1534	1536	JET	A	No	0	9144	FB	0	0	0	0	0	0
5/13/13	1100	1120	LGB	A/V	No	7871	0	FR	2	0	2	0	0	0
5/15/13	1032	1100	LGB	A/V	No	400	0	FR	7	5	2	1	2	2
5/15/13	1300	1350	LGB	A/V	No	400	0	FR	4	0	4	0	0	0
5/15/13	1524	1527	Airplane	A/V	No	2778	2500	MB	1565	1565	0	200	1065	300
5/19/13	1005	1010	SMB	A/V	No	400	0	MB	300	0	300	0	0	0
5/19/13	1620	1630	SMB	A/V	No	400	0	MB	400	0	400	0	0	0
5/19/13	1900	-	SMB	A	No	18520	0	-	-	-	-	-	-	-
5/20/13	1030	1040	SMB	A/V	No	0	0	FR	0	0	0	0	0	0
5/22/13	1105	1120	SMB	A/V	No	0	0	FR	5	0	5	0	0	0
5/22/13	1300	1400	LGB	A/V	No	1852	0	FR	5	0	5	0	0	0
5/22/13	1400	1500	LGB	A/V	No	9260	0	FR	5	0	5	0	0	0
5/27/13	925	926	JET	A	No	0	9144	FR	0	0	0	0	0	0
5/27/13	925	926	JET	A	No	0	9144	FB	0	0	0	0	0	0
5/28/13	1310	1330	SHP	A/V	No	7871	0	FR	5	0	5	0	0	0
5/28/13	1310	1330	SHP	A/V	No	7871	0	FB	1	0	1	0	0	0
5/28/13	1350	1410	SHP	A/V	No	7871	0	FR	5	0	5	0	0	0
5/28/13	1350	1410	SHP	A/V	No	7871	0	FB	1	0	1	0	0	0
5/28/13	1721	1722	JET	A	No	0	9144	FR	6	0	6	0	0	0
5/28/13	1721	1722	JET	A	No	0	9144	FB	2	0	2	0	0	0
5/28/13	2030	2120	SHP	A/V	No	7871	0	MB	1100	0	1100	0	0	0
5/28/13	2030	2120	SHP	A/V	No	7871	0	FB	2	0	2	0	0	0
5/31/13	1445	1446	JET	A	No	0	9144	FB		0		0	0	0

APPENDIX D

Date	Start time	End time	Source ID	Stimuli Type A/V/S	BMPs / Regs Violation	Closest approach (m)	Altitude (mAGL)	Beach ID	Walrus # on beach	# Walrus Disturbed	ND	HR	OR	DS
6/1/13	2115	2210	SHP	A/V	No	6482	0	FB	100	0	100	0	0	0
6/3/13	1102	1202	SHP	A/V	No	7871	0	FB	1	0	1	0	0	0
6/3/13	1102	1202	SHP	A/V	No	12038	0	FB	1	0	1	0	0	0
6/4/13	1329	1420	SHP	A/V	No	9260	0	FB	1	0	1	0	0	0
6/11/13	750	820	SMB	A/V	No	0	0	FR	0	0	0	0	0	0
6/11/13	750	820	SMB	A/V	No	0	0	FB	32	0	32	0	0	0
6/12/13	1140	1255	SHP	A	No	15742	0	FR	6	0	6	0	0	0
6/12/13	1140	1255	SHP	A	No	15742	0	FB	39	0	39	0	0	0
6/12/13	1900	1915	SMB	A/V	Yes	1389	0	MB	320	0	320	0	0	0
6/12/13	1900	1915	SMB	A/V	Yes	1389	0	FR	5	0	5	0	0	0
6/12/13	1900	1915	SMB	A/V	Yes	1389	0	FB	44	0	44	0	0	0
6/14/13	2120	2200	SHP	A/V	No	6482	0	MB	3000	0	3000	0	0	0
6/14/13	2120	2200	SHP	A/V	No	6482	0	FR	15	0	15	0	0	0
6/15/13	1430	1530	SHP	A/V	No	6482	0	WM	271	0	271	0	0	0
6/15/13	1430	1530	SHP	A/V	No	6482	0	FB	164	0	164	0	0	0
6/17/13	915	935	SMB	A/V	No	0	0	FR	8	0	8	0	0	0
6/17/13	915	935	SMB	A/V	No	0	0	FB	96	0	96	0	0	0
6/17/13	1537	1538	JET	A	No	0	9144	MB	1000	0	1000	0	0	0
6/17/13	1537	1538	JET	A	No	0	9144	FB	102	0	102	0	0	0
6/17/13	1544	1545	JET	A	No	0	9144	MB	1000	0	1000	0	0	0
6/17/13	1544	1545	JET	A	No	0	9144	FB	102	0	102	0	0	0
6/17/13	1547	1549	UNK	-	-	-	-	MB	1000	350	650	0	150	200
6/17/13	1547	1549	UNK	-	-	-	-	FB	102	0	102	0	0	0
6/23/13	1400	1500	SHP	A/V	No	7593	0	FR	0	0	0	0	0	0
6/23/13	1400	1500	SHP	A/V	No	7593	0	FB	0	0	0	0	0	0
6/23/13	1501	1600	SHP	A/V	No	7593	0	FR	0	0	0	0	0	0
6/23/13	1501	1600	SHP	A/V	No	7593	0	FB	2	0	2	0	0	0
6/24/13	700	730	SMB	A/V	No	0	0	FR	9	5	4	4	1	0
6/24/13	700	730	SMB	A/V	No	0	0	FB	45	0	45	0	0	0
6/24/13	1315	1325	SMB	A/V	No	0	0	FB	65	11	54	0	1	10
6/24/13	1315	1325	SMB	A/V	No	0	0	FR	9	5	4	5	0	0
6/25/13	1140	1220	SHP	A	No	7408	0	FR	30	0	30	0	0	0
6/25/13	1140	1220	SHP	A	No	7408	0	FB	198	0	198	0	0	0
6/25/13	1335	1338	JET	A	No	0	9144	FR	30	0	30	0	0	0
6/25/13	1335	1338	JET	A	No	0	9144	FB	198	0	198	0	0	0
7/3/13	942	943	JET	A	No	0	9144	FB	100	0	100	0	0	0
7/3/13	1801	1802	UNK	-	-	-	-	MB	330	175	155	50	50	75
7/3/13	1801	1802	UNK	-	-	-	-	FB	111	0	111	0	0	0
7/5/13	705	800	SMB	A/V	No	0	0	FR	13	0	13	0	0	0

APPENDIX D

Date	Start time	End time	Source ID	Stimuli Type A/V/S	BMPs / Regs Violation	Closest approach (m)	Altitude (mAGL)	Beach ID	Walrus # on beach	# Walrus Disturbed	ND	HR	OR	DS
7/5/13	705	800	SMB	A/V	No	0	0	FB	176	0	176	0	0	0
7/9/13	2030	2107	LGB	A	No	7630	0	FB	86	0	86	0	0	0
7/9/13	955	1015	MNT	A	No	100	30	FB	51	0	51	0	0	0
7/9/13	1120	1150	MNT	A	No	180	15	FR	4	0	4	0	0	0
7/9/13	1502	1504	JET	A	No	0	9144	FR	4	0	4	0	0	0
7/9/13	1502	1504	JET	A	No	0	9144	FB	86	0	86	0	0	0
7/10/13	1255	1415	MNT	A	No	180	80	FR	7	0	7	0	0	0
7/10/13	1255	1415	MNT	A	No	402	80	FB	92	0	92	0	0	0
7/10/13	1310	1320	MNT	A	No	190	4	FR	7	0	7	0	0	0
7/10/13	1340	1350	MNT	A	No	140	4	FR	7	0	7	0	0	0
7/10/13	1445	1530	MNT	A	No	30	30	FB	78	0	78	0	0	0
7/10/13	1910	1943	SHP	A/V	Yes	3704	0	MB	350	0	350	0	0	0
7/10/13	1910	1943	SHP	A/V	Yes	3704	0	FB	78	0	78	0	0	0
7/10/13	1910	1943	SHP	A/V	Yes	3704	0	FR	4	0	0	0	0	0
7/11/13	939	943	LGB	A	No	7408	0	MB	347	0	347	0	0	0
7/11/13	939	943	LGB	A	No	7408	0	FB	64	0	64	0	0	0
7/12/13	740	815	SMB	A/V	No	0	0	FR	7	0	7	0	0	0
7/12/13	740	815	SMB	A/V	No	0	0	FB	115	0	115	0	0	0
7/13/13	1736	1737	JET	A	No	0	9144	FR	23	0	23	0	0	0
7/13/13	1736	1737	JET	A	No	0	9144	FB	218	0	218	0	0	0
7/13/13	2045	2130	LGB	A	No	7408	0	FB	218	0	218	0	0	0
7/14/13	10:00	10:45	SMB	A/V	No	463	0	FR	22	0	22	0	0	0
7/14/13	10:00	10:45	SMB	A/V	No	463	0	FB	236	0	236	0	0	0
7/14/13	10:46	11:38	SMB	A/V	No	463	0	FR	22	0	22	0	0	0
7/14/13	10:46	11:38	SMB	A/V	No	463	0	FB	236	0	236	0	0	0
7/14/13	21:00	21:30	SMB	A/V	No	2778	0	FB	-	-	-	-	-	-
7/14/13	21:00	21:30	SMB	A/V	No	2778	0	FB	-	-	-	-	-	-
7/14/13	21:00	21:30	SMB	A/V	No	2778	0	FB	-	-	-	-	-	-
7/15/13	8:45	9:15	SMB	A/V	No	100	0	BC	60	0	60	0	0	0
7/15/13	8:45	9:15	SMB	A/V	No	100	0	FB	99	0	99	0	0	0
7/15/13	8:45	9:15	SMB	A/V	No	100	0	BC	60	0	60	0	0	0
7/15/13	8:45	9:15	SMB	A/V	No	100	0	FB	99	0	99	0	0	0
7/15/13	8:45	9:15	SMB	A/V	No	100	0	BC	60	0	60	0	0	0
7/15/13	8:45	9:15	SMB	A/V	No	100	0	FB	99	0	99	0	0	0
7/15/13	15:35	15:55	SMB	A/V	No	100	0	BC	60	0	60	0	0	0
7/15/13	15:35	15:55	SMB	A/V	No	100	0	FB	128	0	128	0	0	0
7/15/13	15:35	15:55	SMB	A/V	No	100	0	BC	60	0	60	0	0	0
7/15/13	15:35	15:55	SMB	A/V	No	100	0	FB	128	0	128	0	0	0
7/15/13	15:35	15:55	SMB	A/V	No	100	0	BC	60	0	60	0	0	0

APPENDIX D

Date	Start time	End time	Source ID	Stimuli Type A/V/S	BMPs / Regs Violation	Closest approach (m)	Altitude (mAGL)	Beach ID	Walrus # on beach	# Walrus Disturbed	ND	HR	OR	DS
7/15/13	15:35	15:55	SMB	A/V	No	100	0	FB	128	0	128	0	0	0
7/17/13	13:00	14:00	MNT	A/V	No	30	30	FB	127	12	127	0	4	8
7/17/13	15:30	16:30	LGB	A/V	Yes	463	0	BC	0	0	0	0	0	0
7/17/13	15:30	16:30	LGB	A/V	Yes	463	0	FB	192	0	192	0	0	0
7/19/13	12:30	13:30	SMB	A/V	No	5741	0	FR	5	0	5	0	0	0
7/19/13	12:30	13:30	SMB	A/V	No	5741	0	FB	164	0	164	0	0	0
7/19/13	12:30	13:30	SHP	A	No	16668	0	FR	5	0	5	0	0	0
7/19/13	12:30	13:30	SHP	A	No	16668	0	FB	164	0	164	0	0	0
7/20/13	12:00	12:15	SMB	A/V	No	0	0	MB	240	0	240	0	0	0
7/20/13	12:00	12:15	SMB	A/V	No	0	0	FB	94	0	94	0	0	0
7/20/13	14:00	14:15	SMB	A/V	No	0	0	FR	0	0	0	0	0	0
7/21/13	11:30	11:50	SMB	A/V	No	0	0	FR	7	0	7	0	0	0
7/21/13	11:30	11:50	SMB	A/V	No	0	0	FB	80	0	80	0	0	0
7/21/13	13:00	13:15	SMB	A/V	No	0	0	FR	7	0	7	0	0	0
7/21/13	16:44	16:45	JET	A	No	0	9144	FR	7	0	7	0	0	0
7/21/13	16:44	16:45	JET	A	No	0	9144	FB	87	0	87	0	0	0
7/23/13	17:30	18:30	MNT	A	No	200	27	FR	5	0	5	0	0	0
7/24/13	9:15	9:44	SMB	A/V	No	200	0	FR	7	0	7	0	0	0
7/24/13	9:15	9:44	SMB	A/V	No	200	0	FB	183	0	183	0	0	0
7/24/13	9:50	10:10	SMB	A/V	No	0	0	FR	7	0	7	0	0	0
7/24/13	9:50	10:10	SMB	A/V	No	0	0	FB	183	0	183	0	0	0
7/24/13	16:05	16:24	SMB	A/V	No	200	0	FR	9	0	9	0	0	0
7/24/13	16:05	16:24	SMB	A/V	No	200	0	FB	167	0	167	0	0	0
7/24/13	16:51	17:16	SMB	A/V	No	0	0	FR	9	0	9	0	0	0
7/24/13	16:51	17:16	SMB	A/V	No	0	0	FB	167	0	167	0	0	0
7/25/13	17:50	18:00	SMB	A/V	No	0	0	FR	19	0	19	0	0	0
7/25/13	18:07	18:12	SMB	A/V	No	800	0	FB	210	150	60	120	20	10
7/25/13	19:40	20:00	SMB	A/V	No	0	0	FR	20	0	20	0	0	0
7/25/13	19:13	19:20	UNK	-	-	-	-	FB	99	0	99	0	0	0
7/25/13	19:13	19:20	UNK	-	-	-	-	WM	125	125	0	0	45	80
7/26/13	16:00	16:01	JET	A	No	0	9144	FB	226	0	226	0	0	0
7/26/13	16:04	16:05	JET	A	No	0	9144	MB	1900	0	1900	0	0	0
7/26/13	16:04	16:05	JET	A	No	0	9144	FB	226	0	226	0	0	0
7/26/13	17:39	17:40	JET	A	No	0	9144	FB	129	0	129	0	0	0
7/27/13	17:14	17:15	JET	A	No	0	9144	FB	187	0	187	0	0	0
7/30/13	1535	1536	JET	A	No	0	9144	FB	81	0	81	0	0	0
8/11/13	1730	1750	SMB	A/V	No	0	0	FR	36	36	0	0	0	0
8/11/13	1920	1925	SMB	A/V	No	0	800	MB	1400	200	1200	0	0	200
8/11/13	1920	1925	SMB	A/V	No	0	0	FB	90	0	90	0	0	0

APPENDIX D

Date	Start time	End time	Source ID	Stimuli Type A/V/S	BMPs / Regs Violation	Closest approach (m)	Altitude (mAGL)	Beach ID	Walrus # on beach	# Walrus Disturbed	ND	HR	OR	DS
8/11/13	2000	2020	SMB	A/V	No	0	0	FR	36	0	36	0	0	0
8/11/13	2000	2020	SMB	A/V	No	0	0	FB	110	0	110	0	0	0
8/15/13	13:38	13:39	UNK	-	-	-	-	MB	350	20	330	0	10	10
8/15/13	13:38	13:39	UNK	-	-	-	-	FB	25	0	25	0	0	0
8/15/13	13:43	13:44	UNK	-	-	-	-	MB	350	40	310	0	20	20
8/17/13	9:00	10:00	SMB	A/V	No	0	0	FR	8	0	8	0	0	0
8/17/13	10:15	10:35	SMB	A/V	No	50	0	FR	8	1	7	1	0	0

APPENDIX E

Appendix E. Steller sea lion daily count data for 2013, Round Island, Alaska

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
5/7/13	1000	1045	165	34	5	2	35	2	44	8	249	46	295	A378	Y	100
5/7/13	1000	1046												A745	Y	100
5/7/13	1000	1047												A415	Y	100
5/7/13	1000	1048												A462	Y	100
5/7/13	1000	1049												A420	Y	100
5/7/13	1000	1050												A843	Y	75
5/7/13	1000	1051												A751	Y	75
5/8/13	0935	1000	174	5	0	0	36	2	58	12	268	19	287	A745	Y	100
5/8/13	0935	1001												A378	Y	100
5/8/13	0935	1002												X442	Y	100
5/8/13	0935	1003												M717	Y	100
5/8/13	0935	1004												A196	Y	100
5/9/13	1529	1650	172	28	10	0	30	0	40	6	252	34	286	A29_	Y	75
5/9/13	1529	1650												A462	Y	100
5/9/13	1529	1650												A37_	Y	75
5/9/13	1529	1650												A745	Y	100
5/9/13	1529	1650												A196	Y	100
5/9/13	1529	1650												A230	Y	100
5/9/13	1529	1650												A483	N	100
5/9/13	1529	1650												A870	Y	100
5/10/13	1458	1633	142	45	8	0	42	5	62	25	254	75	329	A378	Y	100
5/10/13	1458	1633												T278	Y	100
5/10/13	1458	1633												A291	Y	100
5/10/13	1458	1633												A462	Y	100
5/10/13	1458	1633												A351	N	100
5/10/13	1458	1633												A196	Y	100
5/10/13	1458	1633												A729	Y	100
5/10/13	1458	1633												A745	N	100
5/10/13	1458	1633												A751	N	100
5/10/13	1458	1633												A554	Y	75
5/10/13	1458	1633												A843	Y	?
5/10/13	1458	1633												A84_	Y	?
5/11/13	1105	1217	174	51	7	0	37	14	37	3	255	68	323	A196	Y	100
5/11/13	1105	1217												A462	Y	100
5/11/13	1105	1217												A230	N	100
5/11/13	1105	1217												A751	Y	100
5/11/13	1105	1217												X79_	Y	10
5/12/13	1258	1346	47	80	0	6	34	12	58	23	139	121	260	A729	Y	100
5/12/13	1258	1346												A745	Y	100
5/12/13	1258	1346												A751	Y	100
5/12/13	1258	1346												A843	Y	100

APPENDIX E

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
5/12/13	1258	1346												A291	Y	100
5/12/13	1258	1346												A713	Y	50
5/12/13	1258	1346												T278	Y	100
5/12/13	1258	1346												_79	Y	50
5/13/13	1330	1415	118	19	1	1	34	1	36	1	189	22	211	A230	Y	100
5/13/13	1330	1415												X442	Y	100
5/13/13	1330	1415												A801	Y	100
5/13/13	1330	1415												A462	Y	100
5/14/13	1558	1650	184	15	2	0	44	12	0	60	230	87	317	X168	Y	75
5/14/13	1558	1650												A843	Y	100
5/14/13	1558	1650												A291	Y	100
5/14/13	1558	1650												A751	Y	50
5/14/13	1558	1650												A420	Y	100
5/14/13	1558	1650												A801	Y	100
5/14/13	1558	1650												_70	Y	50
5/14/13	1558	1650												A870	Y	100
5/14/13	1558	1650												T2_	Y	50
5/15/13	1712	1755	127	40	5	0	29	1	56	17	217	58	275	A280	Y	100
5/15/13	1712	1755												A415	Y	100
5/15/13	1712	1755												A420	Y	100
5/15/13	1712	1755												A230	Y	100
5/15/13	1712	1755												X44_	Y	75
5/15/13	1712	1755												A378	Y	100
5/15/13	1712	1755												A460	Y	100
5/15/13	1712	1755												A46_	Y	75
5/15/13	1712	1755												A196	Y	100
5/16/13	1100	1200	150	9	3	0	30	0	3	0	186	9	195	A801	Y	100
5/16/13	1100	1200												A713	Y	100
5/16/13	1100	1200												A280	Y	100
5/17/13	1430	1530	133	4	0	0	36	1	18	0	187	5	192	T278	Y	100
5/17/13	1430	1530												A2_3	Y	75
5/18/13	1154	1230	103	27	0	0	111	1	5	2	219	30	249	A554	Y	100
5/18/13	1154	1230												A420	Y	100
5/19/13	1212	1253	138	29	3	7	26	12	23	3	190	51	241	A196	Y	100
5/19/13	1212	1253												A253	Y	100
5/19/13	1212	1253												A230	Y	100
5/19/13	1212	1253												T278	Y	100
5/19/13	1212	1253												A415	Y	100
5/20/13	1317	1345	60	1	0	0	145	0	0	0	205	1	206	A713	Y	100
5/20/13	1317	1345												A462	Y	100
5/21/13	1235	1325	125	0	0	0	25	0	0	1	150	1	151	A79	Y	75
5/22/13	1330	1408	40	5	0	1	247	13	3	0	290	19	309	A291	Y	100

APPENDIX E

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
5/22/13	1330	1408												A196	Y	100
5/22/13	1330	1408												A420	Y	100
5/22/13	1330	1408												A801	Y	100
5/22/13	1330	1408												A729	Y	100
5/22/13	1330	1408												A637	Y	100
5/23/13	1440	1640	243	60	10	3	40	3	48	11	341	77	418	A196	Y	100
5/23/13	1440	1640												A230	Y	100
5/23/13	1440	1640												A415	Y	100
5/23/13	1440	1640												A554	Y	100
5/23/13	1440	1640												A611	Y	100
5/23/13	1440	1640												A637	Y	100
5/23/13	1440	1640												A713	Y	75
5/23/13	1440	1640												A745	Y	100
5/23/13	1440	1640												A843	Y	100
5/23/13	1440	1640												A858	Y	100
5/23/13	1440	1640												T278	Y	100
5/24/13	1315	1410	153	61	22	11	25	13	18	16	218	101	319	A420	Y	100
5/24/13	1315	1410												A858	Y	100
5/24/13	1315	1410												A729	Y	100
5/24/13	1315	1410												A870	Y	100
5/24/13	1315	1410												T278	Y	100
5/24/13	1315	1410												A230	Y	100
5/25/13	1330	1422	171	6	13	0	9	1	0	3	193	10	203	A637	Y	100
5/25/13	1330	1422												A611	Y	100
5/25/13	1330	1422												A731	Y	100
5/25/13	1330	1422												A843	Y	100
5/25/13	1330	1422												A801	Y	100
5/25/13	1330	1422												A196	Y	100
5/25/13	1330	1422												A415	Y	100
5/26/13	1318	1356	138	12	12	0	20	1	9	12	179	25	204	A415	Y	100
5/26/13	1318	1356												A751	Y	100
5/26/13	1318	1356												A778	Y	100
5/26/13	1318	1356												A196	Y	100
5/26/13	1318	1356												A460	Y	100
5/26/13	1318	1356												A729	Y	100
5/26/13	1318	1356												_420	Y	75
5/27/13	1450	1545	240	40	24	4	30	4	3	7	297	55	352	A843	N	100
5/27/13	1450	1545												A729	Y	100
5/27/13	1450	1545												_830	N	75
5/28/13	1605	1655	141	59	6	7	21	19	21	15	189	100	289	A751	Y	100
5/28/13	1605	1655												T278	Y	100
5/28/13	1605	1655												A843	Y	100

APPENDIX E

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
5/28/13	1605	1655												A830	Y	100
5/28/13	1605	1655												A729	Y	100
5/28/13	1605	1655												A460	Y	100
5/28/13	1605	1655												A196	Y	100
5/29/13	1608	1700	102	78	27	4	29	13	34	9	192	104	296	A637	Y	100
5/29/13	1608	1700												X425	Y	100
5/29/13	1608	1700												A801	Y	100
5/29/13	1608	1700												A420	Y	100
5/29/13	1608	1700												A291	Y	100
5/29/13	1608	1700												A196	Y	75
5/29/13	1608	1700												A745	Y	100
5/29/13	1608	1700												A843	Y	100
5/29/13	1608	1700												A230	Y	100
5/29/13	1608	1700												A870	Y	100
5/29/13	1608	1700												A778	Y	100
5/30/13	1450	1530	157	44	23	0	28	0	51	16	259	60	319	A369	Y	100
5/30/13	1450	1530												T278	Y	100
5/30/13	1450	1530												A751	Y	100
5/30/13	1450	1530												A729	Y	100
5/30/13	1450	1530												A858	Y	100
5/30/13	1450	1530												A745	Y	100
5/31/13	1815	1900	126	7	36	2	40	8	50	3	252	20	272	A778	Y	100
5/31/13	1815	1900												A801	Y	100
5/31/13	1815	1900												A830	Y	100
5/31/13	1815	1900												A870	Y	100
5/31/13	1815	1900												A874	Y	100
5/31/13	1815	1900												T388	Y	100
6/1/13	1550	1630	186	43	16	0	32	1	49	0	283	44	327	A554	Y	100
6/1/13	1550	1630												X399	Y	100
6/1/13	1550	1630												T278	Y	100
6/1/13	1550	1630												X425	Y	100
6/1/13	1550	1630												A874	Y	100
6/1/13	1550	1630												A637	Y	100
6/2/13	1324	1400	134	0	11	1	14	0	0	0	159	1	160	A801	Y	100
6/3/13	1320	1400	58	92	14	8	18	39	4	7	94	146	240	X399	Y	100
6/3/13	1320	1400												T278	Y	100
6/4/13	1609	1655	79	57	31	6	35	6	44	4	189	73	262	M896	Y	100
6/4/13	1609	1655												T278	Y	100
6/4/13	1609	1655												T388	Y	100
6/4/13	1609	1655												A874	Y	100
6/4/13	1609	1655												A745	Y	100
6/4/13	1609	1655												A460	Y	100

APPENDIX E

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
6/5/13	1550	1625	61	29	23	2	26	5	29	8	139	44	183	A801	Y	100
6/5/13	1550	1625												A751	Y	100
6/5/13	1550	1625												A712	Y	100
6/6/13	1613	1645	71	17	38	2	29	4	23	0	161	23	184	A801	Y	100
6/6/13	1613	1645												A778	Y	100
6/7/13	1345	1420	22	22	36	15	24	8	32	14	114	59	173	A870	Y	100
6/7/13	1345	1420												A460	Y	100
6/8/13	1304	1347	119	28	56	4	27	0	29	7	231	39	270	T388	Y	100
6/8/13	1304	1347												A611	Y	100
6/8/13	1304	1347												T278	Y	100
6/8/13	1304	1347												A712	Y	100
6/8/13	1304	1347												A637	Y	100
6/8/13	1304	1347												M896	Y	100
6/8/13	1304	1347												A653	Y	100
6/8/13	1304	1347												A858	Y	100
6/8/13	1304	1347												A745	Y	100
6/8/13	1304	1347												A843	Y	100
6/9/13	1420	1510	49	20	36	4	35	6	43	16	163	46	209	A637	Y	100
6/9/13	1420	1510												T278	Y	100
6/9/13	1420	1510												A554	Y	100
6/10/13	1625	1718	8	7	63	6	31	7	61	12	163	32	195	A611	Y	100
6/10/13	1625	1718												A870	Y	100
6/10/13	1625	1718												A745	Y	100
6/10/13	1625	1718												A554	Y	100
6/10/13	1625	1718												A712	Y	100
6/10/13	1625	1718												A858	Y	100
6/10/13	1625	1718												A801	Y	100
6/10/13	1625	1718												A778	Y	100
6/11/13	1330	1400	33	22	38	5	32	3	42	2	145	32	177	A801	Y	100
6/11/13	1330	1400												M896	Y	100
6/11/13	1330	1400												T388	Y	100
6/11/13	1330	1400												A870	Y	100
6/11/13	1330	1400												T278	Y	100
6/12/13	1705	1740	36	7	44	4	32	4	48	9	160	24	184	A653	Y	100
6/12/13	1705	1740												M896	Y	100
6/13/13	1610	1645	26	10	36	2	32	0	38	11	132	23	155	A731	Y	100
6/13/13	1610	1645												A801	Y	100
6/13/13	1610	1645												A830	Y	100
6/14/13	1130	1210	34	5	26	2	21	2	7	4	88	13	101	A554	Y	100
6/14/13	1130	1210												A731	Y	100
6/15/13	1335	1355	1	1	33	2	31	0	16	1	81	4	85	A843	Y	100
6/15/13	1335	1355												A778	Y	100

APPENDIX E

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
6/16/13	1530	1610	2	1	27	0	29	3	39	14	97	18	115	A712	Y	100
6/16/13	1530	1610												A870	Y	100
6/16/13	1530	1610												T388	Y	100
6/16/13	1530	1610												A745	Y	100
6/16/13	1530	1610												A554	Y	90
6/17/13	1745	1810	0	5	35	1	39	7	66	2	140	15	155	T278	Y	100
6/17/13	1745	1810												A745	Y	100
6/18/13	1601	1647	0	1	20	6	29	3	67	9	116	19	135	X399	Y	100
6/18/13	1601	1647												A729	Y	100
6/18/13	1601	1647												A637	Y	100
6/18/13	1601	1647												A870	Y	100
6/18/13	1601	1647												A745	Y	100
6/18/13	1601	1647												A77_	Y	75
6/19/13	1500	1515	0	0	33	0	24	0	9	0	66	0	66	A745	Y	100
6/20/13	1643	1707	0	0	35	0	30	1	8	0	73	1	74	A731	Y	100
6/20/13	1643	1707												A874	Y	100
6/21/13	1635	1655	22	1	55	0	31	27	7	0	115	28	143	A874	Y	100
6/21/13	1635	1655												A778	Y	100
6/21/13	1635	1655												A554	Y	100
6/22/13	1750	1813	0	2	1	2	1	2	0	2	2	8	10	-	-	-
6/23/13	1515	1540	0	1	61	0	37	0	5	1	103	2	105	A611	Y	100
6/24/13	1220	1300	0	3	71	1	39	3	8	18	118	25	143	A801	Y	100
6/24/13	1220	1300												A605	Y	100
6/24/13	1220	1300												T388	Y	100
6/24/13	1220	1300												A870	Y	100
6/24/13	1220	1300												A7--	Y	50
6/25/13	1645	1700	0	0	20	1	16	0	4	11	40	12	52	A843	Y	100
6/26/13	1232	1313	0	3	16	3	28	2	32	10	76	18	94	A843	Y	100
6/26/13	1232	1313												A729	Y	100
6/26/13	1232	1313												A745	Y	100
6/27/13	1400	1430	0	0	22	11	29	0	42	52	93	63	156	T388	Y	100
6/27/13	1400	1430												A801	Y	100
6/27/13	1400	1430												A843	Y	100
6/27/13	1400	1430												M896	Y	100
6/27/13	1400	1430												A745	Y	100
6/28/13	1626	1650	0	2	26	1	39	7	15	4	80	14	94	T388	Y	100
6/29/13	1540	1600	0	0	19	1	26	0	13	0	58	1	59	A801	Y	100
6/29/13	1540	1600												A745	Y	100
6/30/13	1710	1730	0	4	9	0	34	1	4	5	47	10	57	-	-	-
7/1/13	1340	1400	0	3	21	0	26	0	0	2	47	5	52	A731	Y	100
7/1/13	1340	1400												A712	Y	100
7/2/13	1534	1555	0	0	39	1	41	3	0	3	80	7	87	A712	Y	100

APPENDIX E

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
7/2/13	1534	1555												A843	Y	100
7/3/13	1640	1700	0	0	40	0	33	0	18	7	91	7	98	A678	Y	100
7/3/13	1640	1700												A731	Y	100
7/3/13	1640	1700												A751	Y	100
7/4/13	1628	1655	0	1	58	1	68	0	6	2	132	4	136	A843	Y	100
7/4/13	1628	1655												A751	Y	100
7/5/13	1635	1655	0	1	53	0	51	2	14	4	118	7	125	A843	Y	100
7/5/13	1635	1655												A712	Y	100
7/5/13	1635	1655												A745	Y	100
7/6/13	1421	1450	0	2	34	2	31	6	9	2	74	12	86	A843	Y	100
7/6/13	1421	1450												A712	Y	100
7/6/13	1421	1450												A745	Y	100
7/7/13	1133	1215	1	0	45	0	48	0	8	2	102	2	104	A678	Y	100
7/7/13	1133	1215												A729	Y	100
7/7/13	1133	1215												A751	Y	100
7/7/13	1133	1215												A745	Y	100
7/7/13	1133	1215												A843	Y	100
7/8/13	1140	1215	0	0	24	2	25	4	7	4	56	10	66	A712	Y	100
7/8/13	1140	1215												A729	Y	100
7/8/13	1140	1215												A843	Y	100
7/8/13	1140	1215												A751	Y	100
7/9/13	1334	1403	0	4	45	4	34	15	32	18	111	41	152	A678	Y	100
7/9/13	1334	1403												A712	Y	100
7/9/13	1334	1403												A801	Y	100
7/9/13	1334	1403												A729	Y	100
7/9/13	1334	1403												A745	Y	100
7/10/13	1610	1645	0	0	27	1	32	2	25	4	84	7	91	A843	Y	100
7/10/13	1610	1645												A6__	Y	50
7/11/13	1532	1615	0	1	33	4	36	4	51	14	120	23	143	A745	Y	100
7/11/13	1532	1615												A751	Y	100
7/11/13	1532	1615												A801	Y	100
7/11/13	1532	1615												A843	Y	100
7/11/13	1532	1615												A737	Y	100
7/12/13	1250	1326	0	2	19	1	30	6	42	5	91	14	105	A843	Y	100
7/12/13	1250	1326												A737	Y	100
7/12/13	1250	1326												A729	Y	100
7/12/13	1250	1326												A751	Y	100
7/12/13	1250	1326												A801	N	100
7/13/13	1645	1700	0	0	17	0	39	0	73	5	129	5	134	A801	N	100
7/13/13	1645	1700												A737	N	100
7/14/13	1725	1745	0	0	1	0	36	0	19	5	56	5	61	A843	Y	100
7/14/13	1725	1745												A737	Y	100

APPENDIX E

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
7/15/13	1335	1405	0	0	9	0	38	0	31	2	78	2	80	A745	Y	100
7/15/13	1335	1405												A843	Y	100
7/15/13	1335	1405												A737	Y	100
7/16/13	1650	1710	0	0	13	0	53	0	38	0	104	0	104	-	-	-
7/17/13	1404	1425	0	0	19	0	45	0	42	3	106	3	109	A745	Y	100
7/18/13	1650	1710	0	0	24	0	47	0	44	1	115	1	116	-	-	-
7/19/13	2006	2035	0	0	21	4	54	10	58	2	133	16	149	A751	Y	100
7/19/13	2006	2035												A729	Y	100
7/20/13	1650	1705	0	0	17	0	62	0	37	0	116	0	116	-	-	-
7/21/13	1202	1231	1	0	29	0	43	11	55	0	128	11	139	-	-	-
7/22/13	1550	1620	0	0	30	1	38	4	42	10	110	15	125	A843	Y	100
7/22/13	1550	1620												A729	Y	100
7/22/13	1550	1620												A801	Y	100
7/23/13	1350	1412	1	0	5	2	28	11	27	28	61	41	102	A729	Y	100
7/23/13	1350	1412												A801	Y	100
7/23/13	1350	1412												A637	Y	100
7/23/13	1350	1412												A843	Y	100
7/24/13	1350	1415	0	0	31	1	34	12	37	64	102	77	179	T333	Y	100
7/24/13	1350	1415												A843	Y	100
7/24/13	1350	1415												A751	Y	100
7/24/13	1350	1415												M896	Y	100
7/24/13	1350	1415												A801	Y	100
7/24/13	1350	1415												A637	Y	100
7/25/13	1407	1432	1	4	16	6	37	11	72	38	126	59	185	A843	Y	100
7/25/13	1407	1432												A737	Y	100
7/26/13	1615	1645	0	0	4	1	29	3	41	45	74	49	123	M896	Y	100
7/26/13	1615	1645												A751	Y	100
7/26/13	1615	1645												A737	Y	100
7/26/13	1615	1645												A801	Y	100
7/26/13	1615	1645												A729	Y	100
7/27/13	1548	1624	0	1	12	0	28	3	86	2	126	6	132	A843	Y	100
7/27/13	1548	1624												M896	Y	100
7/28/13	1650	1710	0	0	14	4	20	1	76	28	110	33	143	A843	Y	100
7/28/13	1650	1710												A712	Y	100
7/28/13	1650	1710												A737	Y	100
7/29/13	1657	1715	0	0	3	0	34	0	150	2	187	2	189	A801	Y	100
7/29/13	1657	1715												A843	Y	100
7/29/13	1657	1715												M896	Y	100
7/29/13	1657	1715												A737	Y	100
7/29/13	1657	1715												A751	Y	100
7/30/13	1320	1345	0	0	17	0	33	0	90	24	140	24	164	A843	Y	100
7/30/13	1320	1345												A637	Y	100

APPENDIX E

Date	Start Time	Finish Time	V1 Land	V1 Water	V2 Land	V2 Water	V3 Land	V3 Water	V4 Land	V4 Water	Total Land	Total Water	Total	Brand	Photo	% Certain
7/30/13	1320	1345												A751	Y	100
7/30/13	1320	1345												A737	Y	100
7/31/13	1232	1245	0	0	0	0	26	1	0	1	26	2	28	A843	Y	100
8/1/13	1335	1355	0	0	0	0	29	1	0	0	29	1	30	A751	Y	100
8/1/13	1335	1355												A737	Y	100
8/2/13	1112	1139	1	3	11	0	49	1	8	6	69	10	79	A751	Y	100
8/3/13	1634	1655	11	0	25	0	49	0	31	0	116	0	116	A843	Y	100
8/4/13	1649	1703	0	0	24	0	40	1	36	2	100	3	103	A843	Y	100
8/5/13	1645	1715	7	0	19	0	36	0	16	0	78	0	78	A843	Y	100
8/6/13	1354	1406	0	9	0	0	34	0	0	0	34	9	43	A843	Y	100
8/7/13	1335	1355	5	2	0	0	35	1	0	38	40	41	81	A843	Y	100
8/7/13	1335	1355												A801	Y	100
8/8/13	1607	1634	0	0	16	0	92	1	0	1	108	2	110	A843	Y	100
8/8/13	1607	1634												A637	Y	100
8/8/13	1607	1634												A751	Y	100
8/9/13	1400	1420	7	0	17	0	51	1	2	7	77	8	85	A751	Y	100
8/9/13	1400	1420												A843	Y	100
8/10/13	1352	1406	0	0	7	0	72	2	4	2	83	4	87	A843	Y	100
8/10/13	1352	1406												A751	Y	100
8/11/13	1838	1839	0	0	0	0	60	0	82	0	142	0	142	-	-	-
8/12/13	1600	1625	1	4	5	2	39	7	85	41	130	54	184	A637	Y	100
8/12/13	1600	1625												A843	Y	100
8/12/13	1600	1625												A737	Y	100
8/13/13	1555	1615	0	0	0	0	29	0	22	1	51	1	52	A637	Y	100
8/14/13	1434	1453	0	1	0	0	60	0	26	0	86	1	87	A843	Y	100
8/14/13	1434	1453												A712	Y	100
8/15/13	1600	1620	0	0	13	0	36	1	96	5	145	6	151	A801	Y	100
8/15/13	1600	1620												A605	Y	100
8/15/13	1600	1620												A737	Y	100
8/15/13	1600	1620												A843	Y	100
8/15/13	1600	1620												A637	Y	100
8/15/13	1600	1620												A554	Y	100
8/16/13	1651	1708	0	0	0	0	67	0	21	1	88	1	89	A843	Y	100

APPENDIX F

Appendix F. 2013 Pelagic Cormorant Productivity Data, CG, FP & SB Index Plots, Round Island, Alaska.

2013 Pelagic Cormorant Productivity Cabin																																				
Nest #	5/15	5/16	5/18	5/19	5/22	5/25	5/29	6/1	6/4	6/7	6/10	6/13	6/16	6/19	6/23	6/25	6/28	7/1	7/4	7/7	7/10	7/13	7/16	7/19	7/22	7/25	7/28	7/31	8/3	8/6	8/9	8/12	8/15			
1	E1	IP	E2	E2	E2	E2+	E3	E4	E4	E3+	E4	E4	E1C1	C3+	C1+	C3	C3	C3	C3	C3	C3	C2+	C3	C3	C3	C3	C3	C3	C3	F2C1	F3	F3	F3	F3		
2	E1	E1	E2+	E3	E3	E3+	E3	E3	E3+	E4	E3+	E4	E2C1	C2+	C2	C4	C3+	C3+	C2+	C3	C2	C3	C3	C3	C3	C3	C3	C3	C3	F1C2	F3	F3	F3	F3		
3	E2	IP	E2+	E3	E3	E1+	E3	E3	E3	E3	E3	C1+	C1+	C1+	C3	C2+	C3	C2+	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	F1C2	F1C2	F3	F3	F3			
4	E1	IP	E2	E3	IP	B	N	N	N	N	N	N	N	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
5	-	E1	E2	E2+	E2+	E3	E2+	E3	E2+	E3	E3	E3+	C1+	E1C1	E1C2	C2+	C2	C2	C2	C2+	C1	C2	C2	C2	C2	C2	C2	C2	F1C1	F2	F2	F2	F2			
6	-	-	E1	E1	E2+	E3	E2+	E3	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	B	N	B	N	N	N	N	N	N		
7	-	-	-	E1	E1	E3+	E2+	E2+	E2+	E3	E2+	E2+	E2+	E4	C2+	C1+	C1+	C2+	C2+	C2+	C2+	C2+	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	F2	F2		
8	-	-	-	E1	IP	E3+	E2+	E4	E4	E4	E3+	E4	E4	E2+	BP	C1+	BP	C1+	C1+	C2+	C2	C2+	C2	C2	C2	C2	C2	C2	C2	C2	C2	F1C1	F2	F2		
9	-	-	-	-	E1	E1+	E2	E2+	E3	E2+	IP	E4	E5	E3+	C1+	BP	BP	C2+	C2+	C2+	C2+	C2+	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	F2	F2		
10	-	-	-	-	E1	E1+	E2	E3	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
11	-	-	-	-	E1	E1+	E2	E2+	E3	E3	E3	IP	E2+	IP	IP	BP	C1+	C1+	C1+	C1+	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	F1	F1		
12	-	-	-	-	-	E1	E2+	E3	E3+	E2+	E3	E2+	IP	E2+	E1C1	BP	C1+	E1C2+	C2+	C1+	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	F1	F1		
13	-	-	-	-	-	E2	E2	E4	E4	E4	E3+	E4	E3+	E3+	E3+	E1C1	BP	BP	C1+	C2+	C2	C2	C2	C2	C2	C2	C1+	C2	C2	C2	C2	C2	F2	F2		
14	-	-	-	-	-	-	-	E1+	E3	E3	E2+	E3+	E2C1	IP	C2+	C1+	C2+	C1+	C1+	C2+	C2	C2+	C2	C2+	C3	C3	C2	C2	C3	C3	F1C2	F3	F3	F3		
2013 Pelagic Cormorant Productivity First Prime Pinnacle North (FPPN)																																				
Nest #	5/16	5/18	5/19	5/22	5/25	5/29	6/1	6/4	6/7	6/10	6/13	6/16	6/19	6/23	6/25	6/28	7/1	7/4	7/7	7/10	7/13	7/16	7/19	7/22	7/25	7/28	7/31	8/3	8/6	8/9	8/12	8/15				
1	IP	E3	E1+	E3	E3	E3	E1+	E3	E3	E3	E1+	BP	C3	C2+	C2	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	F1C2	F2C1	F2C1	F3	F3			
2	IP	E2	E2	E2	IP	E2	E3	E4	E3+	IP	E2+	C1+	IP	C2+	C2	C2	C2	C2+	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	F2C1	F2C1	F2C1	F3		
3	IP	E2+	E1+	E2+	E3	E3	E3	E3+	E3+	E4	E1+	E3	C1+	C2+	C2+	C2+	C2	C3	C3	C3	C3	C2+	C3	C3	C3	C3	C3	C3	C3	C3	C3	F2C1	F3			
4	IP	E3	E3	E3+	E3	E3	E4	E3	E4	E4	IP	E2+	C3	C2+	C3	E1C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	F1C2	F2C1	F3	F3	F3			
5	IP	E1	E1	E1+	E3	E3	E2+	E2+	E1+	E3	E2+	E2+	E1C2	BP	C1+	C1+	C1+	C2+	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	F1C2	F1C2	F3	F3	F3			
6	IP	E1	E2	E3	E4	E4	E3+	E2+	E4	E4	E3+	E4	C1E2	C1+	C3	C3	C2+	C3	C3	C3	C3	C4	C4	C4	C4	C4	C4	C4	C4	F2C2	F2C2	F4	F4			
7	IP	E1+	E1	E3	E3	E2+	E3	E3	E3	E3	C1+	C1+	IP	C2	C1+	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	F1C2	F3	F3	F3	F3			
8	IP	E1	E2+	IP	IP	E1+	IP	E2	E1+	E2+	E2+	E2+	IP	C1+	BP	C2+	C1+	C1+	C2+	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	F1C1	F2	F2	F2	F2		
9	-	E1+	E1+	E4	E3+	E3	E4	E2+	E3+	E4	E4	C2+	C2+	C2+	C3	C3	C3	C3	C3	C3	C3	C3	C3	C4	C3+	C4	C4	F3C1	F4	F4	F4	F4	F4			
10	-	E1+	E2	E3	E4	E4	E3+	E2+	E1+	E2+	E2C1	E2+	C1+	C1+	C2+	BP	C4	C2+	C2+	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	F1C1	F2	F2	F2	F2		
11	-	-	-	E1	E2+	IP	E4+	E4	IP	IP	E5	E4+	E5	E4+	C1+	BP	E1C2+	C1+	C1+	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	F2	F2	
2013 Pelagic Cormorant Productivity First Prime Pinnacle South (FPPS)																																				
Nest #	5/14	5/15	5/17	5/18	5/21	5/24	5/27	5/30	6/3	6/5	6/8	6/15	6/20	6/25	6/30	7/5	7/10	7/15	7/20	7/25	7/30	8/4	8/9	8/14												
1	E2	E2	IP	E2	E3	E3+	E3	E3	E4	B	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
2	-	E3	E3	E3	E3	E4	E2+	E3+	E4	B	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
3	-	E1	IP	N	N	N	N	N	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
4	-	-	E1	IP	IP	E1+	E2+	E2+	E4	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
5	-	-	E1	E1	E1	E2	N	B	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
6	-	-	-	-	E1	E1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
7	-	-	-	-	E1	E2	E1+	E1+	N	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
8	-	-	-	-	-	-	E3	E4	E4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

APPENDIX G

Appendix G. 2012 Black-Legged Kittiwake Productivity Data, OP Index Plots, Round Island, Alaska.

2013 BLKI Productivity Plot 2 - Observation Point																												
Nest #	6/4	6/5	6/6	6/7	6/10	6/13	6/16	6/19	6/22	6/25	6/28	7/1	7/4	7/7	7/10	7/13	7/16	7/19	7/22	7/25	7/29	7/31	8/3	8/6	8/9	8/12	8/15	
1	E1	E1	E1	E1	E1	E1	E2	E1	E1+	E1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	F	F	
2	E1	E1	E1	E1	E1+	E2	E2	E2	E2	E1	E2	IP	E2	IP	N	N	N	N	N	N	N	N	N	N	N	N	B	B
3	E2	E2	E2	E2	E2	E2	E2	E2	E1+	E2	E1+	C1	N	N	N	B	B	N	B	N	B	N	B	N	N	B	B	
4	E1	E1	IP	E1	E2	E2	E1+	E2	E2	E2	E2	C2	C2	IP	C1+	C1	N	N	N	N	B	N	B	N	N	N	B	
5		E1	E1	E1	E2	E2	E2	E2	E2	E2	E2	IP	E2	IP	N	N	N	N	N	B	B	N	N	N	N	N	N	
6		E2	E2	IP	IP	E2	E2	E2	E2	E2	E1C1	C1	B	B	B	B	N	B	N	B	B	B	B	B	N	N	N	
7		E1	E2	E2	E2	E2	E2	E2	E2	E2	E2	E2	C1+	N	B	B	B	B	B	N	B	B	B	N	N	N	N	
8		E1	E1	E1	IP	E1+	E1+	E1+	E2	E2	E1+	IP	E1+	B	B	N	N	B	B	B	B	B	B	N	N	B	B	
9			E2	E2	E2	E2	E2	E2	E2	E2	E2	IP	C2	N	N	B	B	B	B	B	B	B	B	N	N	B	B	
10			E1	E1	E1	E1	E1	E1+	IP	IP	C2	C1+	C1+	C1	C1	C1	C1	C1	C1	C1	C1	C1	N	B	N	B	B	
11			E1	E1	E1	E1	E2	E1+	E2	E1	E1	C1	N	N	N	N	N	N	N	N	N	B	N	N	N	N	N	
12			E1	E1	E2	E2	E2	E2	E1+	E2	E2	E2	N	N	N	N	N	N	N	N	N	B	N	N	N	N	N	
13			E2	E2	E1+	E2	IP	E2	E2	E2	E2	IP	C2	C1+	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	F	
14			E1	E1	E2	E2	E2	IP	E1+	IP	E2	IP	IP	IP	B	B	B	N	N	B	B	N	B	N	N	N	N	
15				E1	E1	IP	E2	E2	E2	E2	E2	E2	C1	C1	N	B	B	N	N	N	N	B	B	N	N	N	N	
16				E1	E2	E1+	E2	E1+	E2	E2	E2	IP	C1	N	N	B	N	N	N	N	B	B	B	B	N	N	B	
17				E1	E1	E1	E2	E2	IP	E2	E2	IP	IP	IP	E2	E	E	E	E	E	E	B	N	N	B	N	N	
18				E1	E1	E1	E1	E1	E1	IP	E1+	C1	C1	C1	B	B	B	N	N	B	B	N	N	N	N	B	N	
19				E1	IP	E2	E2	E2	IP	E2	E2	E2	E1C1	C1+	C1	C1	C1	N	N	B	B	N	N	N	N	B	B	
20				E1	E1	E1	E2	E2	E1+	E2	E2	IP	IP	C1+	C1	C1	C1	B	B	N	N	B	N	B	N	B	B	
21				E2	E2	E2	E2	E2	E2	E2	E2	IP	C2	C1+	C1	C1	BP	C1	C1	C1	C1	C1	C1	C1	C1	C1	F	
22				E2	IP	E2	E2	IP	E1+	E1	E2	E2	C1	IP	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	F	
23				E1	E1	E1	E2	E2	E2	IP	E2	E2	IP	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	B	B	N	B	
24					E1	E1	IP	E1	IP	E1	E1	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	B	
25					E1	E1+	E2	E2	E2	E2	E2	E1C1	E1C1	N	N	N	B	N	N	N	N	N	B	N	N	N	B	

APPENDIX G

2013 BLKI Productivity Plot 3 - Observation Point																											
Nest #	6/4	6/5	6/6	6/9	6/12	6/15	6/18	6/21	6/24	6/27	6/30	7/3	7/6	7/9	7/12	7/15	7/18	7/21	7/24	7/27	7/30	8/2	8/5	8/8	8/11	8/14	
1	E1	IP	E1	IP	E1	E1	E1+	E2	E1	IP	E1	C1	C1	C1	C1	N	N	N	N	N	B	N	N	B	N	N	
2	E1	IP	IP	E2	IP	E2	E2	E2	E2	E2	IP	IP	C1+	C1+	C1	B	B	N	B	B	B	B	B	B	N	N	
3	E1	E1	E2	IP	E2	E2	E2	E2	E2	E2	IP	C1+	C1E1	B	B	B	N	N	N	B	N	N	N	B	N	B	
4	E1	E1	IP	E1	E2	E2	E2	E2	E2	E2	IP	C1+	C1+	C1	N	B	B	N	N	B	B	N	N	B	N	N	
5	E1	IP	E2	E2	E2	E2	E2	E2	E2	E2	IP	E2	E2	E2	N	N	N	N	N	B	B	B	B	B	B	B	
6	E1	E1	IP	E2	E2	E2	E2	E2	IP	E2	E2	C1+	N	B	B	B	N	B	B	B	N	N	B	B	B	N	
7	E1	E1	IP	E2	E2	E2	E2	E2	IP	E2	E2	E2	E1	IP	B	B	N	N	N	B	B	B	N	N	N	N	
8		E2	IP	IP	IP	E1	IP	IP	E1+	E1	E2	IP	E1+	E2	E1+	IP	IP	E	E	N	B	N	B	B	B	N	
9		E1	IP	E2	E2	E2	E1+	E2	E2	E2	IP	E1+	E2	B	B	B	N	B	B	B	B	B	B	B	N	N	
10		E1	E1	IP	E2	E2	E2	E2	E1+	E2	IP	E1C1	C1+	C1+	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	
11		E1	IP	E1	E2	IP	E2	E2	E1+	IP	IP	IP	IP	IP	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	
12		E1	E1	E1	E1+	E1	E1+	E1+	IP	E2	E2	E1C1	C1	B	N	B	N	B	B	N	B	N	N	B	B	B	
13		E1	E2	E2	E1+	E2	E2	E2	E2	E2	IP	E2	C1+	C1+	C1	BP	N	N	N	B	B	N	N	B	N	N	
14		E1	IP	E1	E2	E2	E2	E1+	IP	E2	IP	C1+	C1+	C1	C1	C1	C1	BP	BP	C1	C1	C1	C1	C1	C1	C1	
15		E1	E2	E2	E2	IP	E2	E2	E2	E2	E1C1	E1C1	N	B	N	N	N	N	N	B	B	N	N	B	N	B	
16		E1	E1	E1	E1+	E2	E2	E2	E2	E2	IP	E1	N	N	B	B	N	N	B	N	B	N	B	B	N	N	
17		E1	IP	IP	E1	IP	E1	E1	E1	E1	E1	IP	E1	IP	E1	IP	IP	E	E	B	B	B	B	B	N	N	
18		E1	E1	E1	E2	E2	E2	E2	E2	E2	E2	C1+	C1	IP	BP	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	
19		E2	IP	IP	E2	E2	E2	E1+	E2	E2	E2	E2	E2	E1	E1	E1	E	E	E	E	E	E	E	E	B	N	B
20		E2	E1+	IP	E2	E2	E2	E1+	E2	E2	C1+	C2	B	B	B	B	N	N	N	N	N	N	N	B	N	N	
21			E1	IP	E2	E2	E2	IP	E1+	E1+	E2	N	N	N	N	B	B	N	N	N	B	B	B	N	B	N	
22			E1	E2	E1+	IP	E2	E1+	E2	E1+	E2	C1+	C1+	C1	C1	C1	BP	C1	C1	C1	C1	C1	C1	C1	C1	C1	
23			E1	E1	E2	E2	E1+	E2	E2	E2	E1+	C1+	IP	C1E1	C1E1	C1	C1	B	N	B	B	B	B	N	B	N	
24			E1	E2	E2	E2	E2	E2	E2	IP	E1+	C1+	IP	IP	C1	C1	C1	C1	BP	C1	C1	B	B	B	N	B	
25			E1	E1	E1	E1	IP	E1	E1	E1	C1	C1	C1	C1	B	B	B	N	B	B	B	B	B	B	B	B	
26																											

N=empty nest and is used when the egg or chick that was in the nest has been lost and the adult was not present.
 B= Bird, Adult bird occupying a site, with no egg or chick present. Used when observer is sure the bird has no egg or chick.
 P= Bird, present and don't know if egg or chick present (this is recommended by Byrd and Dragoo but not found in the above report).
 E= Egg, Egg present, with no adult. If the egg is obviously damaged, record it as Eded (dead egg).
 C= Chick, Chick present. C3 (three chicks) C3+ (three chicks plus possibly more).
 F= Chick fledged (chick left the nest, survival unknown)
 BP= Brooding posture
 IP= Incubating posture

APPENDIX H

13		IP	E1	IP	IP	E1	IP	IP	IP	E1	E1	IP	IP	C1	C1	C1	C1	C1	BP	C1	BP	F	
14		E1	N	N	N	N	N	N	N	B	N	N	N	N	N	N	N	N	N	N	N	N	N
15		IP	IP	IP	E1	E1	IP	IP	E1	E1	IP	E1	IP	IP	IP	B	B	B	B	B	B	B	B
16		E1	E1	E1	E1	E1	E1	E1	IP	IP	E1	E1	C1	C1	BP	BP	B	B	B	B	B	B	B
17		E1	E1	E1	E1	E1	IP	E1	E1	E1	E1	IP	IP	E1	B	B	B	B	B	B	B	B	N
18			E1	E1	E1	E1	IP	IP	E1	IP	E1	IP	IP	IP	B	B	B	B	B	B	B	B	B
19			E1	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1	C1	C1	C1	C1	C1	C1	F	F
20			E1	IP	N	B	B	B	B	B	B	B	N	N	N	N	N	N	N	N	N	N	B
21			E1	IP	E1	E1	E1	E1	E1	E1	E1	E1	B	B	B	B	B	B	N	N	N	B	N
22			E1	B	N	N	N	B	B	B	N	N	B	N	N	N	B	B	N	N	N	B	B
23			E1	IP	E1	IP	IP	IP	IP	IP	IP	E1	IP	IP	B	B	B	B	N	N	N	B	B
24			E1	E1	E1	E1	E1	IP	E1	E1	E1	IP	IP	C1	BP	BP	C1	BP	BP	BP	BP	F	F
25			E1	E1	E1	IP	IP	IP	IP	E1	E1	E1	IP	IP	IP	B	B	B	N	N	N	B	B

2013 COMU Productivity Plot 4 - Observation Point

Nest #	6/14	6/15	6/16	6/20	6/23	6/27	6/29	7/3	7/5	7/8	7/11	7/14	7/17	7/20	7/23	7/26	7/29	8/1	8/4	8/7	8/10	8/13	
1	E1	E1	E1	E1	E1	E1	E1	E1	B	N	N	N	N	N	N	N	B	N	B	N	N	N	N
2	E1	E1	E1	E1	IP	E1	E1	IP	IP	E1	E1	B	B	B	B	B	B	B	B	B	B	N	N
3		E1	E1	E1	E1	E1	IP	E1	IP	E1	E1	IP	IP	IP	IP	B	B	N	B	B	N	N	N
4		E1	E1	E1	E1	E1	IP	E1	E1	IP	IP	IP	IP	IP	IP	C1	C1	C1	C1	C1	C1	F	F
5			E1	E1	IP	B	B	IP	IP	E1	E1	E1	E1	E1	E1	E1	IP	IP	B	B	N	B	B
6			E1	E1	IP	E1	E1	IP	E1	E1	E1	IP	IP	IP	IP	C1	BP	C1	BP	BP	BP	F	F
7			E1	E1	IP	E1	E1	IP	E1	E1	B	B	B	B	B	B	B	B	B	B	B	B	B
8			E1	E1	IP	E1	IP	E1	E1	E1	E1	E1	IP	E1	E1	IP	B	N	B	N	N	N	B
9			E1	E1	E1	E1	IP	IP	IP	E1	IP	IP	IP	C1	BP	BP	C1	C1	C1	BP	F	F	F
10			E1	E1	E1	E1	E1	E1	E1	E1	E1	IP	E1	E1	E1	IP	E1	E1	E1	E1	E1	B	B
11			E1	IP	E1	IP	E1	IP	E1	E1	B	B	IP	IP	IP	IP	C1	BP	BP	BP	BP	C1	F
12			E1	E1	IP	IP	E1	IP	E1	BP	IP	IP	IP	BP	BP	C1	BP	BP	C1	BP	F	F	F
13			E1	IP	E1	IP	IP	IP	IP	E1	E1	IP	IP	IP	IP	IP	E1	E1	IP	BP	BP	F	F
14			E1	IP	IP	E1	IP	IP	IP	IP	E1	IP	IP	IP	B	N	B	B	B	B	B	B	N
15			E1	E1	E1	E1	E1	E1	E1	E1	E1	IP	E1	C1	BP	BP	C1	BP	C1	BP	C1	F	F
16				E1	IP	B	B	IP	IP	E1	E1	IP	C1	C1	BP	C1	BP	C1	BP	C1	C1	F	F
17				E1	IP	E1	IP	IP	E1	IP	IP	E1	BP	BP	BP	BP	C1	C1	BP	C1	F	F	F
18				E1	E1	IP	E1	IP	IP	E1	E1	IP	IP	IP	IP	BP	C1	BP	C1	BP	BP	F	F
19				E1	E1	E1	E1	IP	E1	E1	E1	E1	E1	E1	IP	IP	B	B	B	B	B	B	B
20				E1	E1	B	B	B	N	N	N	B	B	B	B	B	B	B	N	B	B	N	N
21				E1	E1	E1	IP	IP	E1	E1	E1	E1	C1	BP	BP	BP	B	B	B	B	B	B	B

APPENDIX H

22				E1	E1	E1	E1	IP	E1	E1	E1	IP	C1	BP	BP	BP	C1	BP	C1	C1	F	F
23				E1	E1	E1	E1	E1	E1	E1	E1	E1	C1	C1	BP	C1	C1	C1	C1	C1	F	F
24				E1	E1	E1	E1	E1	E1	B	B	B	B	B	B	B	B	B	B	N	B	B
25				E1	IP	E1	E1	E1	E1	E1	E1	IP	E1	BP	BP	BP	B	B	B	B	B	B

N=empty nest and is used when the egg or chick that was in the nest has been lost and the adult was not present.
B= Bird, Adult bird occupying a site, with no egg or chick present. Used when observer is sure the bird has no egg or chick.
P= Bird, present and don't know if egg or chick present (this is recommended by Byrd and Dragoo but not found in the above report).
E= Egg, Egg present, with no adult. If the egg is obviously damaged, record it as *E_{dea}* (dead egg).
C= Chick, Chick present. *C*³ (three chicks) *C*³⁺ (three chicks plus possibly more).
F= Chick fledged (chick left the nest, survival unknown)
BP= Brooding posture
IP= Incubating posture

APPENDIX I

Appendix I. 2012 Population Counts, Observation Point Index Plots, Round Island, Alaska.

Date	Count #	Start Time	Finish Time	# BLKI	# BLKI Nests	# COMU	# PECO Nests	#PECO	# HOPU	# TUPU
Plot 1 - Observation Point										
6/15	1	15:40	15:42	23	20	90			0	0
6/15	2	15:43	15:46	24	20	89			0	0
6/18	1	14:17	14:20	25	21	67	3	3	0	0
6/18	2	14:20	14:22	25	20	66	3	3	0	0
6/21	1	16:58	17:00	27	23	88	3	4	0	0
6/21	2	17:00	17:02	27	23	90	3	4	0	0
6/24	1	17:33	17:35	29	22	50	1	1	0	0
6/24	2	17:36	17:37	28	22	52	1	1	0	0
6/27	1	19:20	19:22	26	23	71	1	1	0	0
6/27	2	19:22	19:24	27	23	69	1	1	0	0
6/30	1	11:18	11:21	24	22	55	1	1	0	0
6/30	2	11:22	11:23	23	20	51	1	1	0	0
7/3	1	16:22	16:23	18	18	57	1	1	0	0
7/3	2	16:24	16:25	18	18	52	1	1	0	0
7/6	1	11:56	11:58	20	15	54			0	0
7/6	2	11:58	12:00	18	14	50			0	0
7/9	1	17:15	17:16	20	20	106			0	0
7/9	2	17:17	17:20	20	20	105			0	0
7/12	1	18:20	18:22	20	18	37	1	1	0	0
7/12	2	18:23	18:24	22	17	36	1	1	0	0
7/15	1	18:08	18:10	22	20	58	2	1	0	0
7/15	2	18:11	18:12	23	20	56	2	1	0	0
Plot 2 - Observation Point										
6/15	1	15:48	15:52	72	61	131			0	0
6/15	2	15:52	15:56	73	58	128			0	0
6/18	1	14:27	14:30	76	64	158	1	1	0	0
6/18	2	14:31	14:34	77	65	164	1	1	0	0
6/21	1	16:40	16:40	75	61	97			0	0
6/21	2	16:40	16:40	75	61	97			0	0
6/24	1	17:12	17:17	75	66	124	2	3	0	0
6/24	2	17:18	17:21	75	63	120	2	2	0	0
6/27	1	19:27	19:29	74	66	135			0	0
6/27	2	19:30	19:33	72	64	136			0	0
6/30	1	11:30	11:33	69	62	95	1	1	0	0
6/30	2	11:34	11:36	72	63	100	2	2	0	0
7/3	1	16:29	16:31	60	57	77	2	2	0	0
7/3	2	16:31	16:34	58	55	78	2	2	0	0
7/6	1	12:03	12:05	64	58	90			0	0
7/6	2	12:05	12:08	62	56	92			0	0
7/9	1	17:24	17:27	62	56	145			0	0
7/9	2	17:27	17:30	64	58	147			0	0
7/12	1	18:11	18:15	58	51	70	2	2	0	0
7/12	2	18:16	18:18	58	54	70	2	2	0	0
7/15	1	18:00	18:03	57	50	86	1	1	0	0
7/15	2	18:04	18:06	61	50	86	1	1	0	0

APPENDIX I

Plot 3 - Observation Point										
6/15	1	15:56	15:59	69	62	29	0	0	0	0
6/15	2	16:00	16:02	65	58	31	0	0	0	0
6/18	1	14:35	14:37	65	57	29	0	0	0	0
6/18	2	14:38	14:40	66	57	30	0	0	0	0
6/21	1	16:41	16:41	76	66	11	0	0	0	0
6/21	2	16:41	16:41	76	66	11	0	0	0	0
6/24	1	17:05	17:08	76	62	16	0	0	0	0
6/24	2	17:09	17:11	71	61	16	0	0	0	0
6/27	1	19:33	19:35	74	66	26	0	0	0	0
6/27	2	19:35	19:37	72	64	27	0	0	0	0
6/30	1	11:34	11:36	63	61	18	0	0	0	0
6/30	2	11:37	11:38	67	61	19	0	0	0	0
7/3	1	16:34	16:37	54	52	8	0	0	0	0
7/3	2	16:37	16:39	54	52	8	0	0	0	0
7/6	1	12:08	12:11	58	53	6	0	0	0	0
7/6	2	12:11	12:14	58	53	6	0	0	0	0
7/9	1	17:30	17:34	66	56	22	0	0	0	0
7/9	2	17:34	17:37	64	55	23	0	0	0	0
7/12	1	18:03	18:06	65	52	8	0	0	0	0
7/12	2	18:07	18:10	63	51	8	0	0	0	0
7/15	1	17:54	17:57	56	53	6	0	0	0	0
7/15	2	17:58	17:59	55	50	6	0	0	0	0
Plot 4 - Observation Point										
6/15	1	16:20	16:27	107	72	310	0	0	0	0
6/15	2	16:27	16:33	109	76	339	0	0	0	0
6/18	1	14:49	14:49	97	79	595	0	0	0	0
6/18	2	14:49	14:49	96	79	595	0	0	0	0
6/21	1	16:41	16:41	90	76	431	0	0	0	0
6/21	2	16:41	16:41	90	76	431	0	0	0	0
6/24	1	17:41	17:41	125	79	501	0	0	0	0
6/24	2	17:41	17:41	125	79	501	0	0	0	0
6/27	1	19:44	19:44	104	81	547	0	0	0	0
6/27	2	19:44	19:44	104	81	547	0	0	0	0
6/30	1	11:40	11:40	82	76	390	0	0	0	0
6/30	2	11:40	11:40	82	76	390	0	0	0	0
7/3	1	16:48	16:48	81	73	366	0	0	0	0
7/3	2	16:48	16:48	83	75	366	0	0	0	0
7/6	1	12:20	12:20	76	67	390	0	0	0	0
7/6	2	12:20	12:20	76	67	390	0	0	0	0
7/9	1	17:50	17:50	78	57	572	0	0	0	0
7/9	2	17:50	17:50	78	57	572	0	0	0	0
7/12	1	18:26	18:26	85	53	386	0	0	0	0
7/12	2	18:26	18:26	85	53	386	0	0	0	0
7/15	1	18:17	18:17	81	52	353	0	0	0	0
7/15	2	18:17	18:17	81	52	353	0	0	0	0

APPENDIX I

Plot 5 - Observation Point										
6/15	1	16:07	16:09	27	21	82	0	0	0	0
6/15	2	16:08	16:10	30	23	86	0	0	0	0
6/18	1	14:44	14:44	13	13	156	0	0	0	0
6/18	2	14:44	14:44	13	13	157	0	0	0	0
6/21	1	17:44	17:44	23	21	94	0	0	0	0
6/21	2	17:44	17:44	23	21	100	0	0	0	0
6/24	1	17:45	17:47	16	15	107	0	0	0	0
6/24	2	17:48	17:49	14	14	111	0	0	0	0
6/27	1	19:42	19:42	28	22	167	0	0	0	0
6/27	2	19:42	19:42	28	21	167	0	0	0	0
6/30	1	11:44	11:46	14	13	97	0	0	0	0
6/30	2	11:47	11:48	14	14	95	0	0	0	0
7/3	1	16:42	16:43	29	23	112	0	0	0	0
7/3	2	16:43	16:45	29	21	119	0	0	0	0
7/6	1	12:18	12:18	33	25	90	0	0	0	0
7/6	2	12:18	12:18	33	25	90	0	0	0	0
7/9	1	17:45	17:45	27	20	217	0	0	0	0
7/9	2	17:45	17:45	27	20	217	0	0	0	0
7/12	1	18:30	18:33	10	8	50	0	0	0	0
7/12	2	18:34	18:35	11	9	48	0	0	0	0
7/15	1	18:25	18:25	5	5	86	0	0	0	0
7/15	2	18:25	18:25	5	5	86	0	0	0	0

APPENDIX J

Appendix J. 2013 Daily Observations, Round Island, Alaska.

DATE	SPECIES	NUMBER	LOCATION	COMMENTS
5/6	Bald Eagle	1		immature
5/6	Gray Whales	2		2+ gray whales
5/6	Harlequin Duck	12		breeding plumage
5/6	Black-legged Kittiwake	many		first sighting
5/6	Common Murre	many		first sighting
5/6	Pelagic Cormorant	many		first sighting
5/6	Red Fox	2	Camp	2+ red fox close to cabin
5/7	Bald Eagle	2	Camp	mature
5/7	Gray Whales	15+	East Side, East Cape	large number of whales spotted throughout the day, close to shore and far offshore
5/8	gray crowned rosy finch	1		from photo records
5/8	Gray Whales	2	FB	photo
5/8	Harlequin Duck	20	FB SB	
5/8	Northern Pintail	1	MB	male
5/8	Northern Shoveler	1	FP	male
5/8	parakeet auklet	6	FB	from photos
5/9	Lapland Longspur	1	EC pass	
5/9	Northern Harrier	2	West from summit	talon locking
5/9	Pacific Walrus	1	CG	one young walrus with two tusks on left side at 45 deg angle, right side normal length 12" and left side stunted 8"
5/10	grass			first grass greening seen on trail to V4 - EC
5/10	Northern Shoveler	1	FB	female
5/11	Green Winged Teal	1	BC	female
5/11	Northern Harrier	1	Cabin	male - white
5/12	gray crowned rosy finch	1		from photo records
5/12	Gray Whales	3	1 mile off Cabin	Mother playing with two young calves
5/12	Horned Grebe	2	BC	
5/13	Fox Sparrow	1	cabin	
5/13	Golden Crowned Sparrow	1	SB	
5/13	Horned Puffin		FB	many FB to SB
5/13	Horned Puffin		SB	many FB to SB
5/13	Least Sandpiper	1	CG	uncertain ID
5/13	Savannah Sparrow	1	SB	
5/14	Jellyfish	1	FP	Chrysaora melanaster?
5/14	Pelagic Cormorant		FP	First eggs!
5/14	Red fox	2	CG	screaming
5/14	Short-eared owl	1	cabin	
5/15	Gray Whales	2	CG	2+ gray whales close to camp
5/15	Long tailed duck	7	NBC	from photos
5/15	parakeet auklet	3	CG	from photos
5/15	Tufted Puffin	2		from photos
5/15	Wandering Tattler	1	BC	
5/16	Northern Harrier	1		male
5/16	Wooly lousewort	1		blossoming
5/17	Dunlin	12		observed after storm blew through approximately 10 - 12
5/17	Peregrine falcon	2		Mating flight?
5/17	Short billed Dowitcher	1	Cabin	photos IMG_1765 thru 1768
5/17	Western Sandpiper			
5/18	Dunlin	12		observed after storm blew through approximately 10 - 12
5/18	Horned Puffin	22	FB	lots of Horned Puffins in the water at FB
5/19	Bald Eagle	1		about 4 years old - head changing to white

APPENDIX J

DATE	SPECIES	NUMBER	LOCATION	COMMENTS
5/19	Crested Auklet	5	NBC	
5/19	Fox Sparrow	4	FB	in willows above FB
5/19	Golden Crowned Sparrow	1	cabin	Same bird as in previous years?
5/19	Gray Whales	1	EC	Last gray whale seen off coast at East Cape.
5/19	Short-eared owl	3		group of three owls seen together twice
5/20	Horned Grebe	1	CG	fishing just off alternate site
5/20	Steller Sea Lion	1	BC	first sighting of an entangled sea lion - see photo
5/21	Chocolate Lily		EC pass	pre-bloom
5/21	Green Winged Teal	2	BC FB	male and female
5/22	Horned Grebe	2	BC	Mating dance? Two HOGR facing each other in the water, stretching bodies vertically
5/22	unknown fish	1	BC	unknown fish caught among the rocks in BC by visitor just before arrival of the Lindsay Mary - see photo
5/23	bumble bee	1	cabin	first sighting
5/24	Cliff Swallows	3	EC	
5/24	Common Raven	1	SB	eating vole/shrew
5/24	Savannah Sparrow	1	cabin	1 SASP flew inside the cabin via the front door. BMH tried to herd it back out using the Alaska Atlas and Gazetteer but it flew upstairs and then back downstairs and into the office. It eventually left via the office window.
5/24	Tufted Puffin	2	EC	fighting in the water just off V4 - see photos
5/25	Anemone narcissis			first bloom
5/25	Black oxytrope			
5/27	White-crowned sparrow	2	Cabin	flying around the cabin and shed
5/28	American Tree Sparrow	1	EC pass	photo
5/28	Arctic willow			photo
5/28	Warbler sp	1		
5/29	Unknown moths			many moths with white wings
5/30	Dark eyed Junco	1	TT	first sighting
5/31	Northern Harrier	1		
6/1	Few-flowered clorydalis	1	EC pass	first sighting
6/1	Montane shrew	1	EC pass	dead on trail
6/2	Sea anemones	7	FB tidal pool	down on beach with mort
6/3	Yellow fin sole	1	CG	sea lion trying to eat big sole
6/4	Black-legged Kittiwake		OP	first BLKI eggs - many
6/4	marsh violet	1	MB	first bloom
6/4	Osprey	1	Cabin	
6/4	Pacific Walrus	1	WM	pup/very small individual - photos
6/4	Rock Jasmine	1	MB	first bloom
6/4	Roseroot/King's Crown	1	EC	first bloom
6/4	Spotted Seal	1	CG	Seal resting on beach below CG for about 12 hours. Unable to positively ID - spotted or harbor seal. Many photos. ID'd by photos.
6/5	Forget-me-not	1	BC	first bloom
6/5	yellow anemone	1	FB	first bloom
6/6	Mountain Harebell / Bluebell	1	EC pass	first bloom
6/6	Nootka Lupine	1	EC pass	first bloom
6/7	Cuckoo flower	1	SB	first bloom
6/7	Northern anemone	1	FB	first bloom
6/7	Purple Cress / Bitter Cress	1	cabin trail	first bloom
6/7	Wild geranium	1	cabin	first bloom
6/8	Dwarf Dogwood	1	trails	first bloom

APPENDIX J

DATE	SPECIES	NUMBER	LOCATION	COMMENTS
6/9	Cow parsnip	1	cabin	
6/10	Common Murre	1	OP	1st COMU egg seen - plot 2
6/10	Common Raven	1	OP	stealing egg from COMU - plot 2
6/10	Red fox	1	cabin	carrying dead HOPU
6/11	Bistort	1	FB	first bloom
6/11	Brown Lemming	1	cabin	Dead on trail. Photo
6/11	Chocolate Lily	1	EC pass	first bloom
6/11	Stream Violet / Yellow Violet	1	FB	first bloom
6/11	Valerian / Mountain Heliotrope	1	Summit	observed by Ruth Wood
6/12	One flowered cinquefoil	1	CG	first bloom
6/12	Steller Sea Lion	1	Cabin	catching fish offshore
6/13	Smelowskia	1	FR	observed by Ruth Wood
6/14	Alaska Boykinia / Bear Flower	1		observed by Ruth Wood
6/14	Alaska poppy	1	NBC	1st bloom
6/14	Alpine Azalea	1	Summit	observed by Ruth Wood
6/14	Colts Foot	1		observed by Ruth Wood
6/14	Panya	1		observed by Ruth Wood
6/14	Pigeon Guillemot	2	FP	from photos
6/17	Hairy Arctic Milk Vetch	1	SP	1st bloom
6/17	Wedge-leaved Primrose	1	EC	1st bloom
6/18	Seal sp	1	MB	mortality; tentatively ID'd as spotted seal; possible entanglement. See photos IMG2501-IMG2504
6/22	cloud berry	1	shed	
6/22	Nagoon berry	1	shed	
6/23	Vole sp	1		dead - photo
6/25	Duck sp	1	FP	female - photos
6/27	Alpine Arnica	1	TT	blooming
6/27	Iris		EC	blooming
6/27	Yarrow		EC	blooming
7/2	Rough Legged Hawk	1	FP	
7/3	Harlequin Duck	1	SP	Female or male in non-blooming plumage - photos
7/5	King Eider	1	NBC	Female
7/6	Common Murre	1	TT	dead chick
7/6	Golden Crowned Sparrow	1	TT	alive chick
7/6	Iris	1	FB	
7/6	Monkshood	1	EC pass	
7/9	gray crowned rosy finch	1	TT	Ed observed on TT photos taken - from photo records
7/9	Red fox	3	Cabin	3 red fox kits with mom near tool shed - photos
7/9	vole or lemming	1	Cabin	baby vole or lemming on trail between BC & Cabin small and fuzzy
7/10	Red fox	4	Cabin	There are four red fox kits
7/11	Pacific Loon	1	EC	Pacific loon feeding out by EC - photos
7/12	Dragon Fly	1	ED	photo
7/14	Common Cuckoo	1	TT	photos 2013 IMG_2741 - 2747
7/14	Red fox	2	EC	Adult and one kit seen at EC between V1 and V2
7/16	Common murre	1	OP	1st murre chick, plot 2 OP
7/17	red fox	1	Cabin	Fox comes through with mouthful of food, mammals and COMU chick
7/17	Star Flower	1	EC	first bloom
7/19	red fox	9	Cabin & EC	3 kits at EC den, 6 kits at Cabin den
7/20	Harlequin Duck	3	SP	1 male 2 female,

APPENDIX J

DATE	SPECIES	NUMBER	LOCATION	COMMENTS
7/20	walrus	1	WM	1 mort, 1 beach cast tusk recovered
7/22	Crested Auklet		NBC	
7/22	Goldenrod	1	NBC	blooming
7/23	Osprey	1	cabin	
7/27	Lousewort / Bumblebee Flower	1	NBC	not first bloom
7/27	Peregrine falcon	1	EC	
7/28	Wandering Tattler	1	MB	
7/29	Spring Beauty	1	EC	not first bloom
8/1	Wandering Tattler	1	FB	from photos
8/2	Harlequin Duck	6		from photo records
8/2	Peregrine falcon	1	EC	Better photo
8/2	Pigeon Guillemot	12	SB	from photos
8/6	Peregrine falcon	1	EC	falcon dive bombing birds offshore EC pass
8/7	red fox	1	Cabin	Fox at cabin with dead fledgling PECO
8/8	gray crowned rosy finch	1	BC	
8/8	Pigeon Guillemot	6	FB	from photos
8/8	red fox	0		haven't seen kits at cabin for ~ 7 days
8/8	Savannah Sparrow	9	water tank	lots at water tank
8/8	Tufted Puffin	2		from photos
8/8	Wandering Tattler	1	FB	from photos
8/9	Horned Puffin		RI	Horned Puffins present 5/13/2013 through at least 8/9/2013 per photo records.
8/9	Pelagic Cormorant	18	Cabin	18 fledged PECO chicks around Cabin plot
8/9	red fox	3	Cabin	3 kits return to den
8/12	Black Legged Kittiwake	1	CG	fledgling seen flying

APPENDIX K

Appendix K. 2013 Daily weather observations, Round Island, Alaska.

Date	Time	Cloud Cover	Wind Speed	Wind Dir	Precip	Barom AM	Barom PM	Tide	Max Temp	Min Temp
5/6/2013	14:00	F	0		N			H		
5/7/2013	9:00	F	2	N	N		1024.0	R	37	33
5/8/2013	14:00	B	10	SE	N		1023.0	H	41	31
5/9/2013	17:00	O	0		N		1023.5	F		34
5/10/2013	9:00	C	5	N	N	1022.7	1018.3	F	40	33
5/11/2013	17:00	S	30	W	N	1012.5	1010.0	H	41	38
5/12/2013	14:00	C	27	NW	N	1007.4	1004.6	R	44	37
5/13/2013	14:00	C	14	W	N	1004.6	1006.4	R	43	36
5/14/2013	17:00	C	10	W	N	1007.2	1006.9	R	39	32
5/15/2013	14:00	C	3	NE	N	1004.7	1003.1	L	42	33
5/16/2013	14:00	C	35	NW	N	1002.3	1002.3	L	39	32
5/17/2013	9:00	C	40	NW	N	1006.7	1013.8	H	32	23
5/18/2013	17:00	C	30	W	N	1016.5	1027.5	L	27	35
5/19/2013	14:00	C	14	E	N	1020.8	1035.4	F	37	31
5/20/2013	14:00	O	40	E	R	1032.0	1028.9	F	39	35
5/21/2013	9:00	O	53	E	R	1023.1	1016.4	R	40	38
5/22/2013	17:00	O	31	E	N	1015.0	1017.9	F	44	38
5/23/2013	9:00	C	15	SE	F	1020.5	1021.7	L	47	38
5/24/2013	14:00	C	2	W	N	1021.9	1015.5	H	52	40
5/25/2013	14:00	B	35	SE	N	1009.0	1005.7	H	51	41
5/26/2013	14:00	F	11	E	N	1008.5	1008.1	R	56	40
5/27/2013	9:00	C	6	W	N	1009.3	1008.1	R	51	43
5/28/2013	17:00	C	6	NW	N	1008.4	1007.7	H	65	46
5/29/2013	17:00	C	1	S	N	1006.2	1004.4	R	76	47
5/30/2013	17:00	C	20	SE	N	1008.1	1014.0	R	57	40
5/31/2013	17:00	C	0	E	N	1018.1	1020.0	L	53	44
6/1/2013	17:00	O	0	E	N	1021.1	1019.2	L	53	46
6/2/2013	14:00	O	21	E	N	1017.1	1012.9	F	51	43
6/3/2013	14:00	B	11	E	N	1011.1	1006.9	L	55	44
6/4/2013	14:00	S	13	W	N	1005.8	1006.2	R	57	47
6/5/2013	14:00	C	14	SE	N	1010.0	1009.5	H	55	43
6/6/2013	17:00	S	4	SW	N	1010.9	1010.4	F	60	44
6/7/2013	9:00	F	21	W	N	1013.3	1015.5	L	67	50
6/8/2013	14:00	C	24	W	N	1022.9	1025.2	R	56	46
6/9/2013	9:00	B	31	W	N	1029.2	1029.3	L	49	43
6/10/2013	14:00	C	24	W	N	1030.9	1028.4	R	59	43
6/11/2013	14:00	C	10	NW	N	1025.2	1019.2	L	59	54
6/12/2013	14:00	F	0		N	1015.0	1013.1	L	57	52
6/13/2013	9:00	C	21	SE	N	1016.0	1021.0	F	59	52
6/14/2013	9:00	O	16	SE	N	1025.3	1024.2	H	55	49
6/15/2013	14:00	S	20	SE	N	1022.3	1022.3	F	60	50
6/16/2013	17:00	C	6	E	N	1024.1	1023.6	L	59	49
6/17/2013	14:00	C	26	SE	N	1022.3	1018.4	F	69	52
6/18/2013	14:00	C	14	W	N	1012.3	1004.8	L	79	54
6/19/2013	9:00	C	18	SE	N	1007.3	1008.0	R	56	53
6/20/2013	14:00	S	29	E	N	1010.3	1012.3	F	53	49
6/21/2013	17:00	O	31	E	N	1012.4	1008.5	F	51	48
6/22/2013	9:00	O	69	E	R	1000.3	998.2	L	51	47
6/23/2013	9:00	O	23	E	N	1000.5	1003.9	L	55	49
6/24/2013	14:00	O	19	SW	N	1006.2	1005.7	H	60	52
6/25/2013	17:00	C	5	W	N	1006.7	1006.9	H	67	52

APPENDIX K

6/26/2013	9:00	C	32	W	N	1009.4	1011.6	F	63	53
6/27/2013	9:00	C	13	W	N	1016.5	1017.5	H	63	52
6/28/2013	17:00	C	13	NE	N	1019.5	1019.8	R	55	47
6/29/2013	9:00	B	21	SE	N	1017.0	1012.4	H	53	46
6/30/2013	9:00	O	34	SE	R	1008.0	1000.7	H	49	46
7/1/2013	14:00	O	29	SE	RF	998.2	998.1	F	46	44
7/2/2013	9:00	O	26	E	R	1002.1	1007.1	R	45	44
7/3/2013	17:00	O	16	SE	R	1009.6	1008.7	F	47	44
7/4/2013	17:00	S	18	NW	N	1013.7	1017.0	L	47	43
7/5/2013	17:00	O	21	E	R	1015.4	1011.0	F	49	40
7/6/2013	9:00	O	11	SE	R	1007.7	1003.3	R	48	47
7/7/2013	9:00	O	13	NW	N	1003.4	1005.5	L	53	48
7/8/2013	9:00	O	44	NW	R	1011.3	1010.9	L	51	45
7/9/2013	14:00	C	27	W	N	1017.6	1021.7	R	60	46
7/10/2013	17:00	C	5	NE	N	1022.2	1019.0	H	56	48
7/11/2013	9:00	S	13	SE	N	1015.7	1012.7	F	68	53
7/12/2013	9:00	C	13	S	N	1012.9	1013.7	L	72	56
7/13/2013	17:00	F	3	SW	N	1015.3	1017.2	R	67	58
7/14/2013	9:00	O	32	SE	R	1021.4	1024.1	H	59	51
7/15/2013	17:00	O	14	SE	RF	1025.1	1024.2	R	53	50
7/16/2013	9:00	O	8	S	N	1025.3	1022.8	H	53	51
7/17/2013	17:00	O	6	V	N	1020.7	1021.2	L	57	51
7/18/2013	14:00	O	19	SE	R	1021.0	1024.9	L	56	50
7/19/2013	14:00	O	26	SW	R	1030.0	1028.5	L	54	49
7/20/2013	14:00	O	37	SW	R	1028.9	1026.1	F	55	51
7/21/2013	14:00	C	13	W	N	1023.4	1022.3	H	65	52
7/22/2013	14:00	C	14	W	N	1024.1	1023.4	H	72	57
7/23/2013	14:00	S	31	W	N	1024.2	1021.9	H	65	57
7/24/2013	14:00	C	43	W	N	1021.8	1018.0	R	68	58
7/25/2013	14:00	C	5	N	N	1019.6	1019.5	R	74	60
7/26/2013	14:00	C	23	S	N	1022.2	1024.0	L	71	58
7/27/2013	14:00	C	5	E	N	1026.4	1026.2	L	69	55
7/28/2013	17:00	S	26	W	N	1025.9	1023.1	R	69	53
7/29/2013	17:00	C	8	W	N	1022.6	1021.9	L	63	55
7/30/2013	14:00	C	16	E	N	1023.6	1021.5	F	62	52
7/31/2013	17:00	O	42	E	N	1018.4	1014.7	L	61	57
8/1/2013	9:00	O	31	SE	N	1011.1	1007.0	R	58	56
8/2/2013	9:00	O	21	SE	N	1006.3	1001.8	R	59	52
8/3/2013	17:00	O	32	ESE	N	997.5	1005.2	F	56	52
8/4/2013	17:00	B	13	SE	N	1010.6	1010.4	F	55	52
8/5/2013	9:00	O	11	SE	R	1007.2	1005.9	L	54	51
8/6/2013	14:00	O	26	NE	R	1001.9	996.7	H	58	53
8/7/2013	14:00	O	45	E	R	1000.4	1002.6	R	56	50
8/8/2013	17:00	B	23	ESE	N	997.5	998.3	H	53	51
8/9/2013	9:00	O	21	ESE	R	1000.4	1002.5	F	53	50
8/10/2013	14:00	C	6	E	N	1004.2	1018.3	F	52	51
8/11/2013	9:00	F	23	E	N	1016.7	1011.9	H	59	51
8/12/2013	17:00	O	14	S	N	1012.1	1011.3	L	63	51
8/13/2013	9:00	F	23	E	N	1011.2	1011.9	H	61	54
8/14/2013	17:00	O	14	S	N	1012.1	1011.3	L	55	52
8/15/2013	17:00	B	11	SE	N	1009.7	1005.6	L	55	49
8/16/2013	17:00	O	19	SE	N	1002.4	1001	L		



