

Trends in seabird occurrence on Pacific Halibut surveys 2001-2012 (and a bit about data sets)



Levy Boitor

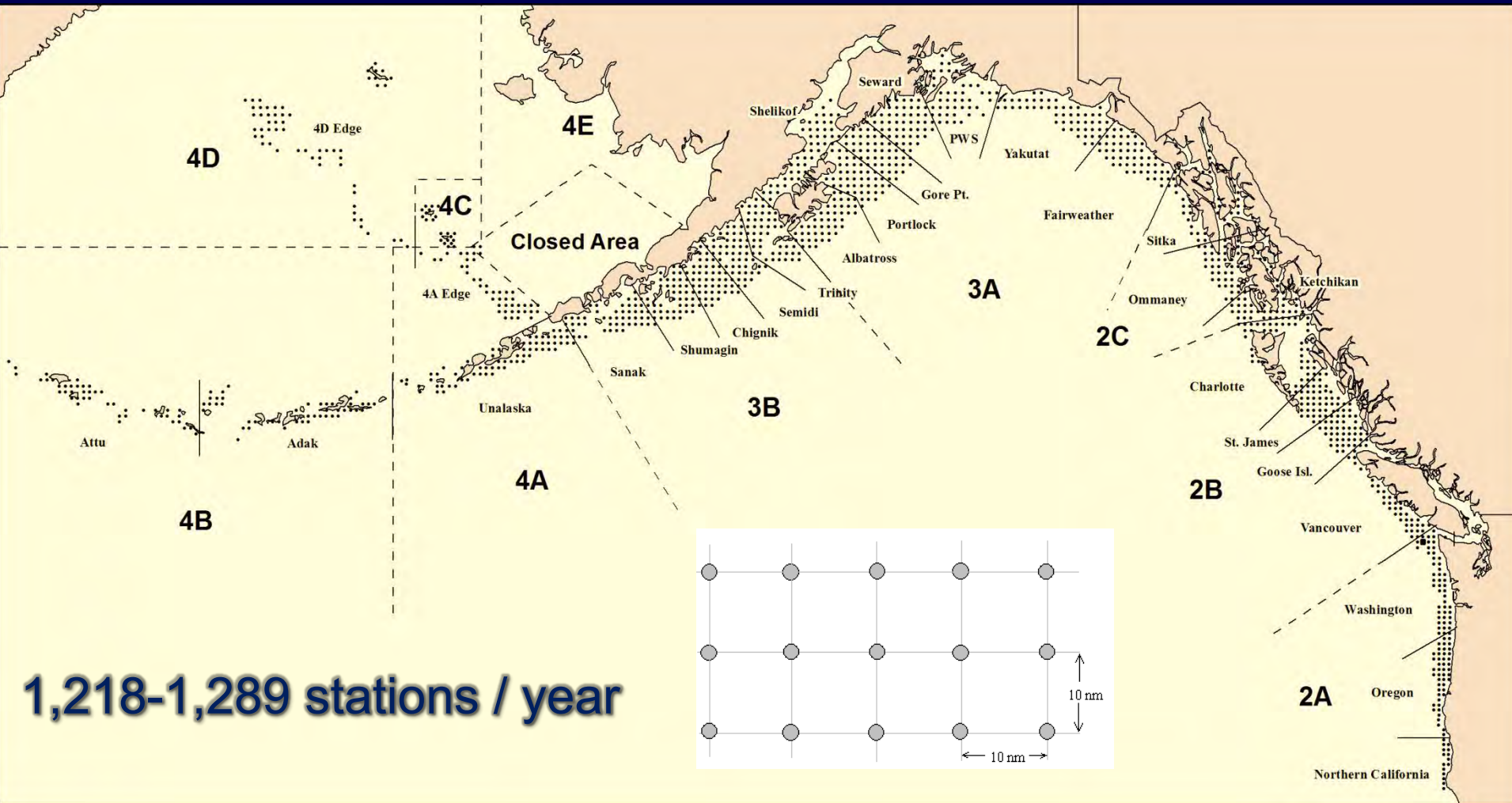


Sam Parker



Levy Boitor

IPHC stock assessment survey



History

- Seabird occurrence data have been collected on stock assessment surveys since 2002
- Initially a collaborative project between the IPhC, Washington Sea Grant, Alaska Department of Fish and Game and the National Marine Fisheries Service sablefish survey
- Collaboration ended in 2004, but IPhC permanently incorporated the seabird collection protocols into its survey program



Sam Parker 2013

After hauling, sampler estimates the number of birds by species, within a 50 m radius of the stern



Seabird Occurrence Form

Set	Vessel	Date			Trip	Station No.	Max. Visibility	Time Observed
		Mo.	Day	Year	No.			
02	AVN1	06	21	12	034284	4	0642	

Offal Discharge Y or N	Species Comp Different Y or N*
Y	N

*If different species are present in the area surrounding the vessel outside of sample zone, record Y. Record the species and numbers in the column marked "Outside count area". Record the location where these species were encountered in the comments field.

Maximum Visibility	
1	<50 m
2	50 m to 100 m
3	100 m to 1 km
4	> 1 km
5	Night

Common Name	Code	# Inside Count Area (≤50 m)	# Outside Count Area (>50 m)*
Northern Fulmar Dark	702	2	
Northern Fulmar Light	701		
Unidentified Northern Fulmar	604	1	2
Herring Gull	626	2	
Glaucous-Winged Gull	628	3	
Unidentified Gull	627		
Black-Footed Albatross	601	15	
Laysan Albatross	602		
Short-Tailed Albatross	666	1	
Fork-Tailed Storm Petrel	641	6	
Leach's Storm Petrel	640		
Unidentified Storm Petrel	632		
Black-Legged Kittiwake	609		
Red-Legged Kittiwake	630	20	
Unidentified Kittiwake	631		
Short-Tailed Shearwater	606	55	
Sooty Shearwater	605		
Unidentified Shearwater	608		
Unidentified Alcids	635	1	
Unidentified Murre	638		
Pomarine Jaeger	612		
Parasitic Jaeger	639		
Unidentified Jaeger	629		
Rhinoceros Auklet	613		
Arctic Tern	611		
Unidentified Tern	637		
Unidentified Cormorant	618		
Unidentified Puffin	633		
Unidentified Bird	619		
Other			
Other			

STAL Sighting Form completed

Comments:

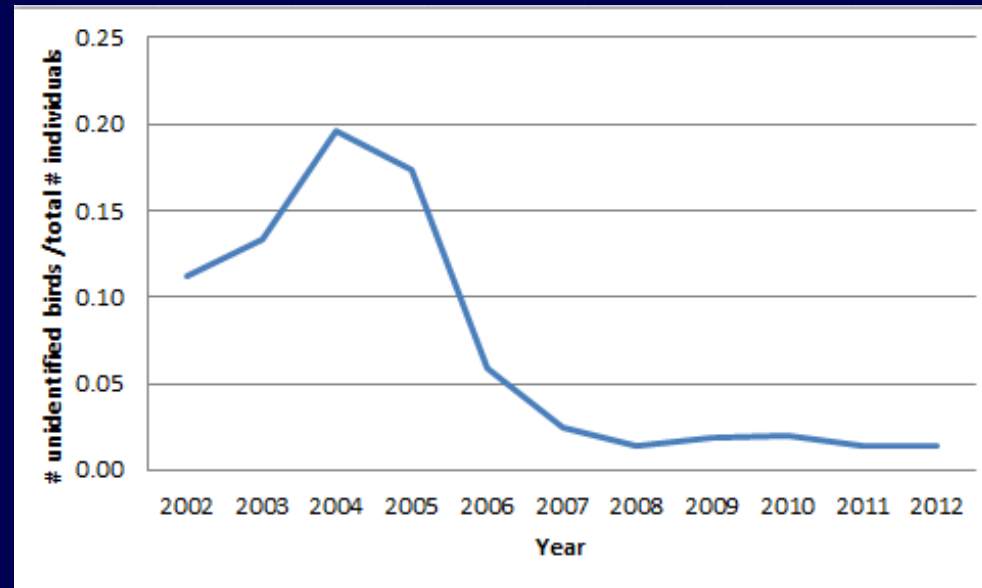
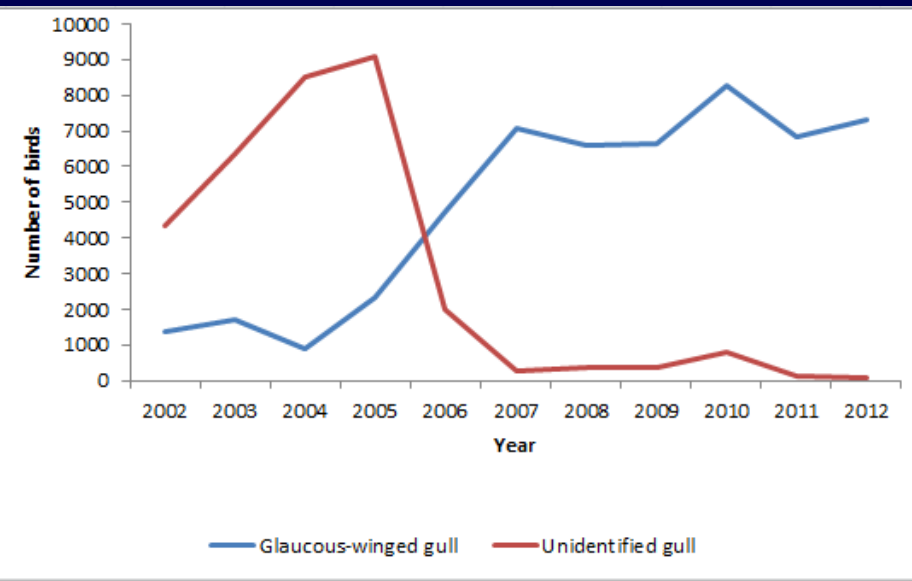
Figure 12-49. Seabird Occurrence Form example

Species	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Northern fulmar	40918	40150	31966	42345	45661	47775	43427	42346	46372	41784	40900	463644
Black-footed albatross	2465	3071	5520	4125	4507	4443	3314	4337	4630	4325	5207	45944
Laysan lbatross	964	742	806	487	621	221	612	816	775	1211	461	7716
Short-tailed albatross	6	19	22	10	30	22	30	14	27	24	17	221
Glaucous-winged gull	1375	1688	896	2310	4740	7067	6606	6642	8287	6816	7318	53745
Herring gull	9		20	274	276	98	144	26	686	1228	652	3413
Mew gull		100						14			1	115
Glaucous gull					30	3		33		16		82
Sabine's gull		3				2		5	2	6		18
Slaty-Backed gull					7							7
Ring-billed gull							5	1				6
Heermann's gull				4					5	4	74	87
Bonaparte's gull						1					5	6
Unidentified gull	4348	6373	8531	9109	1976	250	372	358	782	118	85	32302
Arctic tern	1							2				3
Unidentified tern	20	3					5					28
Pomarine jaeger	3		1	2	3	3	3	1	2	2	20	40
Parasitic jaeger	3	1	4	1	1		2		6	5	5	28
Long-tailed jaeger								3			4	7
Unidentified jaeger	8	5	10					3	12		1	39
South polar skua							1					1
Fork-tailed storm petrel	1052	920	1748	1171	1891	776	937	1416	1840	839	1129	13719
Leach's storm petrel	11	5	9	326	34	119	92	10	5	22	2	635
Unidentified storm petrel	973	754	541	669	642	495	359	140	32	8	9	4622
Black-legged kittiwake	211	271	78	185	817	661	317	357	380	205	614	4096
Red-legged kittiwake	3	17	3	5	25	4	9	2	10	21	5	104
Unidentified kittiwake	51	5	271	283	3	5	3	243	1	63	4	932
Short-tailed shearwater	15	511		10	47	595	327	38	8	13	4	1568
Sooty shearwater	77	90	15	130	276	15	4	88	77	150	126	1048
Flesh-footed shearwater											2	2
Pink-footed shearwater			62		1				6	3	1	73
Unidentified shearwater	418	174	636	676	1020	750	20	327	381	558	659	5619

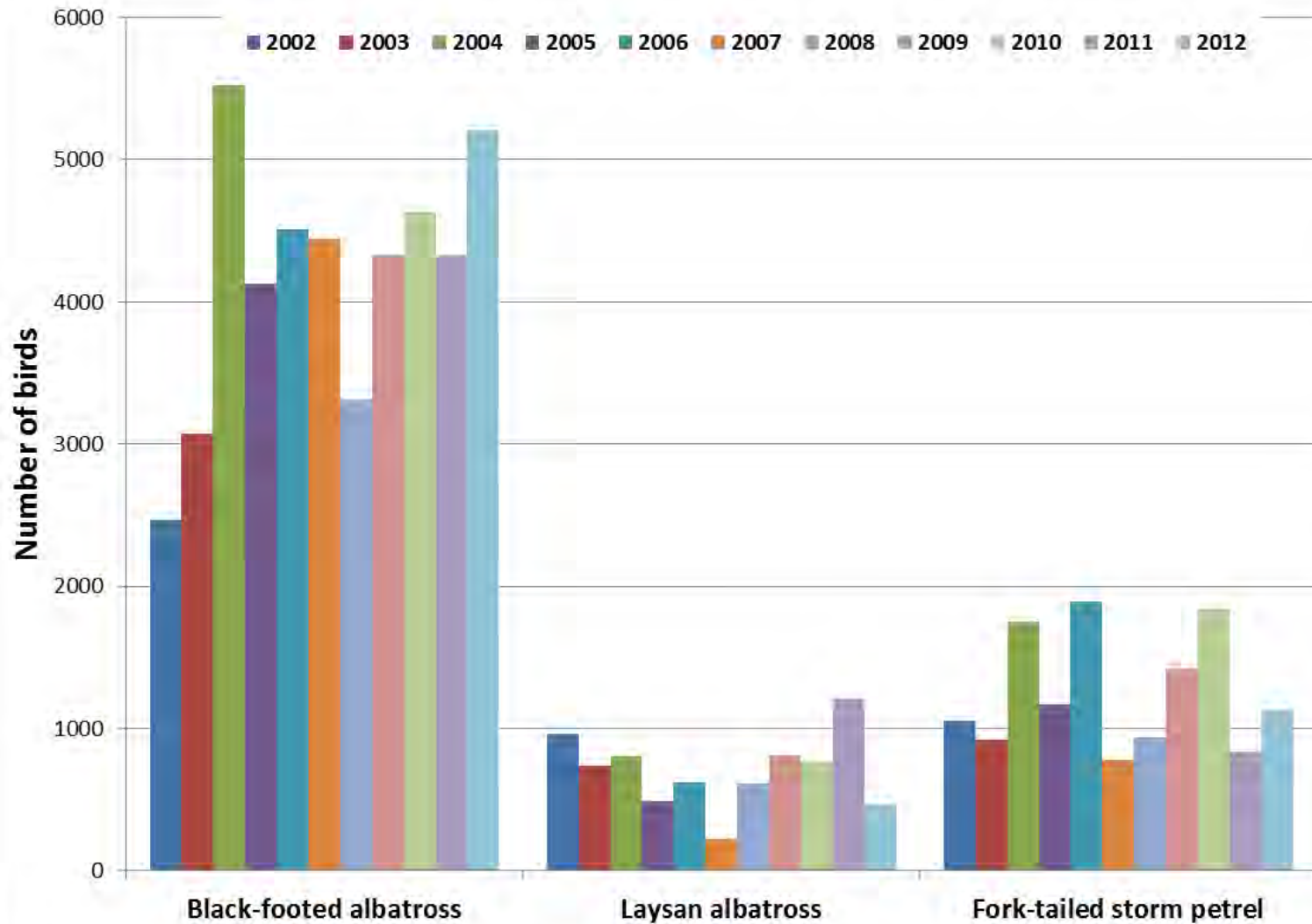
Grand total	53057	54950	51172	62214	62657	63396	56621	57254	64382	57448	57377	640528
Number of counts	1228	1218	1227	1222	1257	1255	1257	1260	1260	1284	1273	13741
Number of unique species	19	19	17	17	20	20	20	20	21	21	22	33

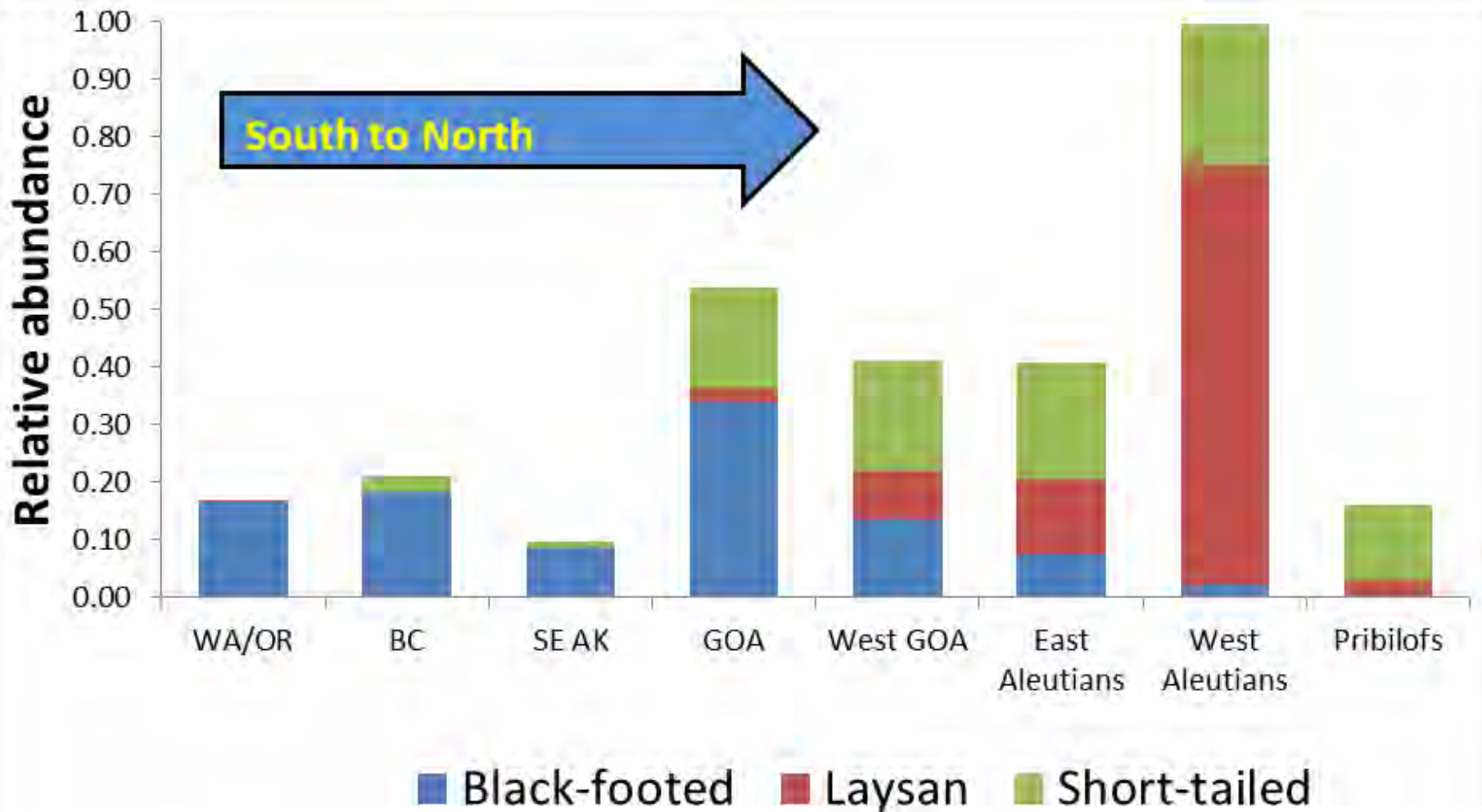
Unidentified puffin	1	15	16	28	7	11	9	13	27	6	26	159
Bald eagle		1	1									2
Unidentified alcid	72	1	1									74
Unidentified cormorant	1					1			1	1		4
Unidentified bird	32	16	1	53		3		3		10		118
Grand total	53057	54950	51172	62214	62657	63396	56621	57254	64382	57448	57377	640528

Learning

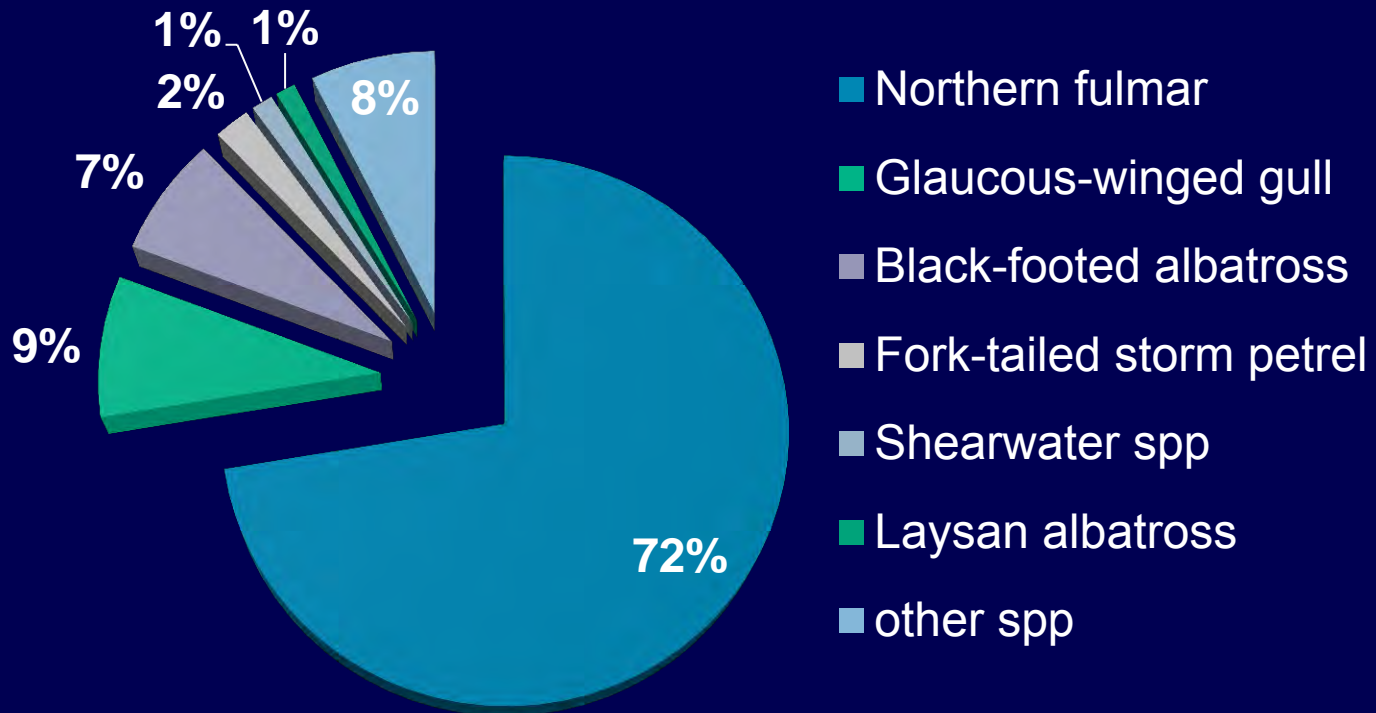


Common bird trends

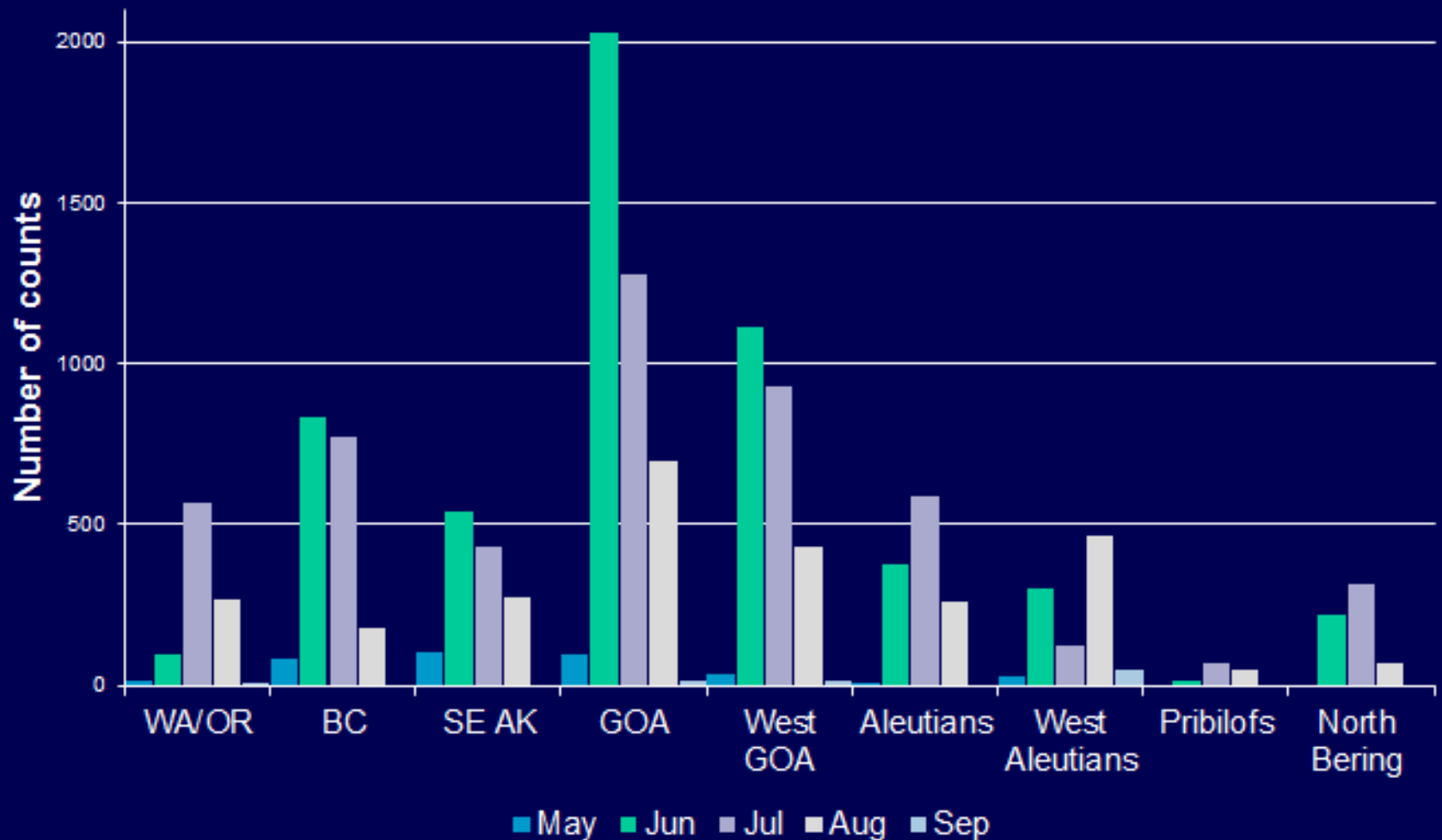




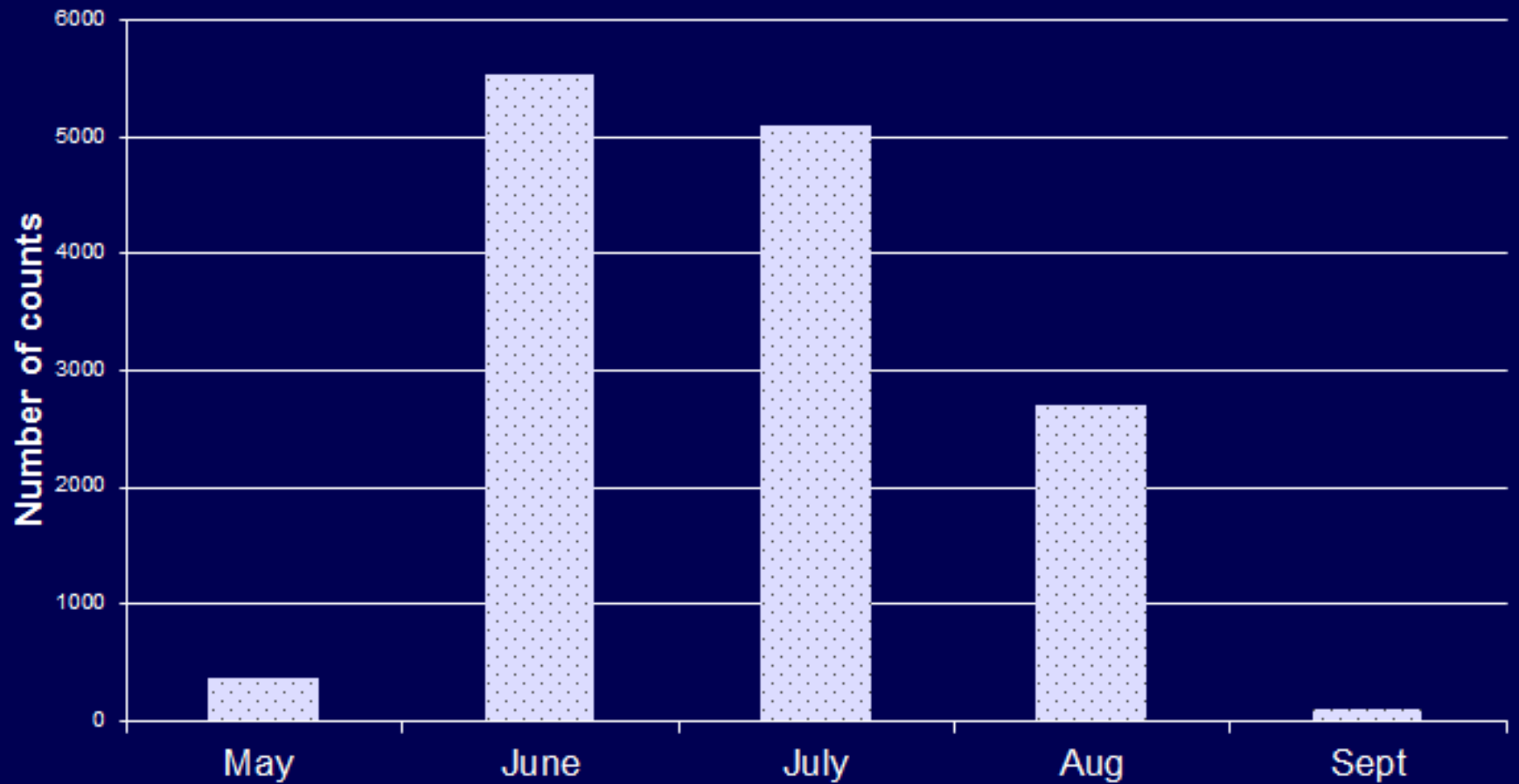
Common birds seen on survey



Counts by area 2002-2012



Total counts by month 2002-2012



Marine mammal data

- Opportunistic via sighting forms 2001-present
- Depredation records since 2009



MARINE MAMMAL SIGHTING



NOAA/NMFS/AFSC/NMML
Platforms of Opportunity
7800 Sand Point Way NE
Seattle, WA 98115

Observer(s) Dean Gaidra, Pender Isle

year month day local time (24 hr. clock) +/- GMT
 12 06 08 13:40 +/-

latitude N/S general location of vessel (optional)
 49° 40' 9" N Starboard side

longitude E/W sighting conditions Beaufort +/- water temp.
 127° 29' 0" W
 0 1 2 3 4 5 6 7 8 9 10 +/- 1 2 3 4 5 6 7 8 9 10 C

species (common and/or scientific name) Please fill out a form for each species confidence
 Sperm whale 0 1 2 3 4 5 6 7 8 9 10

sighting cue 0 1 2 3 4 5 6 7 8 9 10
 Faint Blow; Square head, definite Sperm whale

closest approach number sighted (best) number (minimum) number (maximum)
 105 1 1 1

For Office Use Only

observer 0 1 2 3 4 5 6 7 8 9 10

platform 0 1 2 3 4 5 6 7 8 9 10

vis 0 1 2 3 4 5 6 7 8 9 10

species 0 1 2 3 4 5 6 7 8 9 10

port 0 1 2 3 4 5 6 7 8 9 10

sighting cue 0 1 2 3 4 5 6 7 8 9 10

photos 0 1 2 3 4 5 6 7 8 9 10

roll 0 1 2 3 4 5 6 7 8 9 10

trains 0 1 2 3 4 5 6 7 8 9 10

behaviors, cues and interactions 0 1 2 3 4 5 6 7 8 9 10

behaviors, cues and interactions 0 1 2 3 4 5 6 7 8 9 10

length (m) 0 1 2 3 4 5 6 7 8 9 10

Narrative

Make identifications only on specific features seen. Mention them here. Include body features, markings and coloration, associated organisms, elaborate on behaviors, etc. The most valuable sightings contain a good amount of detailed information.

Near the end of Hauling (hook 65 skate
 1 (cheeked backpack) set 30) a sperm
 whale was noted floating/resting on
 the surface of the water ~105 meters
 off starboard bow. This was the closest
 the whale came before we philled heavily
 and steamed away. No bite marks, lips only
 or bent hooks noted.

Sketches

When possible, make a sketch noting pigmentation, anatomical features, scarring, posture, anatomical anomalies, group positioning, etc.



Body Length Estimate

- < 3 m (< 10')
 3-8 m (10-25')
 8-15 m (25-50')
 15-25 m (50-80')
 > 25 m (> 80')

Some common behaviors
 (circle these or add your own in narrative section)

Small cetaceans

- Bow riding
 Leaping entirely out of water
 Porpoising (swimming fast, body out of the water)
 Rooster-tailing (usually a Dall's porpoise cue)
 Slow rolling

Large cetaceans

- Blow visible from a distance
 Breaching
 Flipper slapping
 Group feeding
 Lob-tailing
 Spy-hopping
 Tail raised on dive
 Side wake riding
 Stern wake riding

Pinnipeds

- Jug handle (flippers in air)
 Porpoising (swimming fast, at least partially out of the water)
 Flating
 Spooked from haulout
 Vocalizing

Fishing Interactions

- Contact with gear
 Contact with vessel
 Entangled in gear
 Feeding on discards
 Feeding from gear
 Following vessel while fishing
 Swimming near gear

Photos/Video (optional)

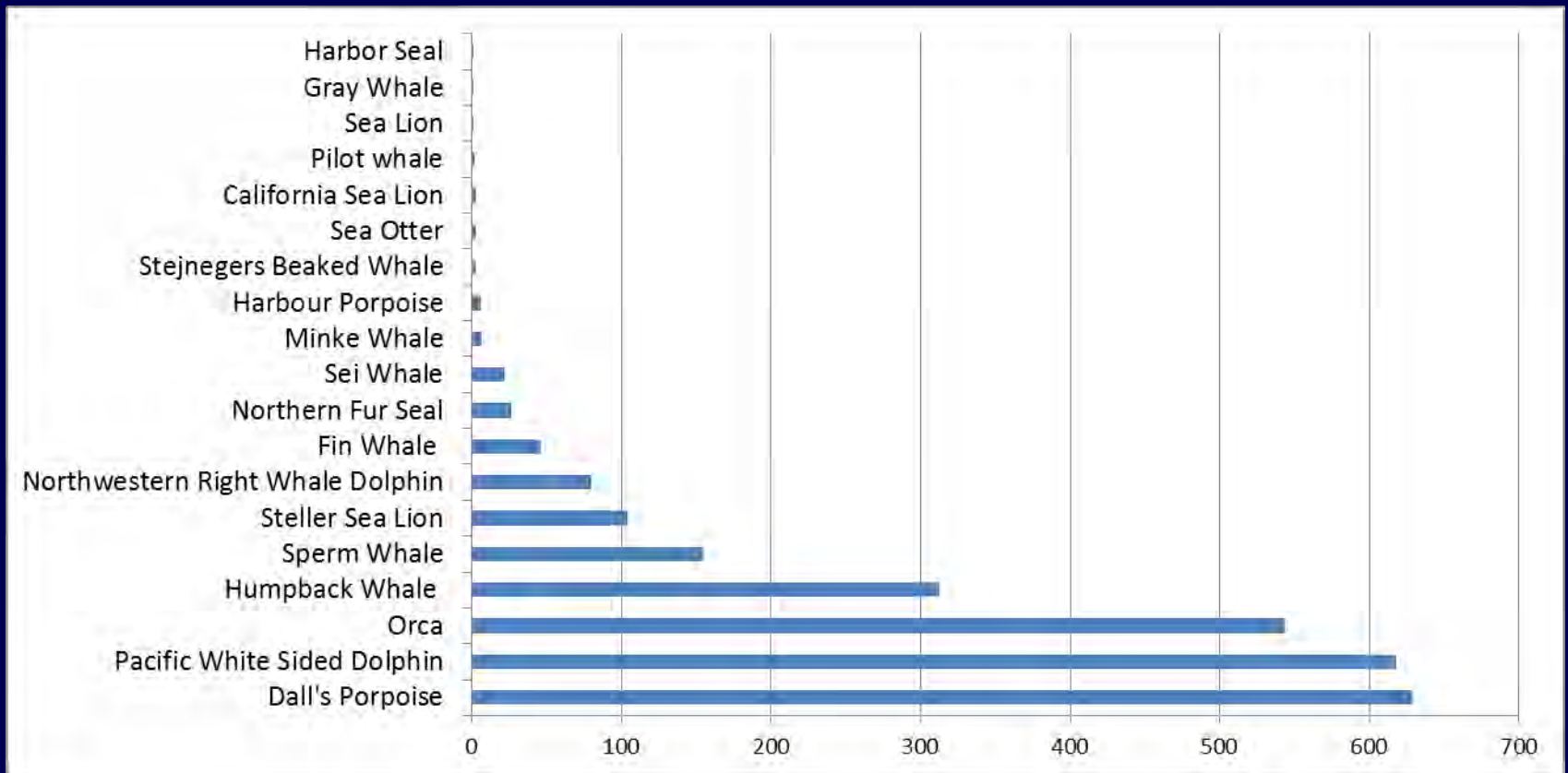
- photographs
 video

roll/tape # _____

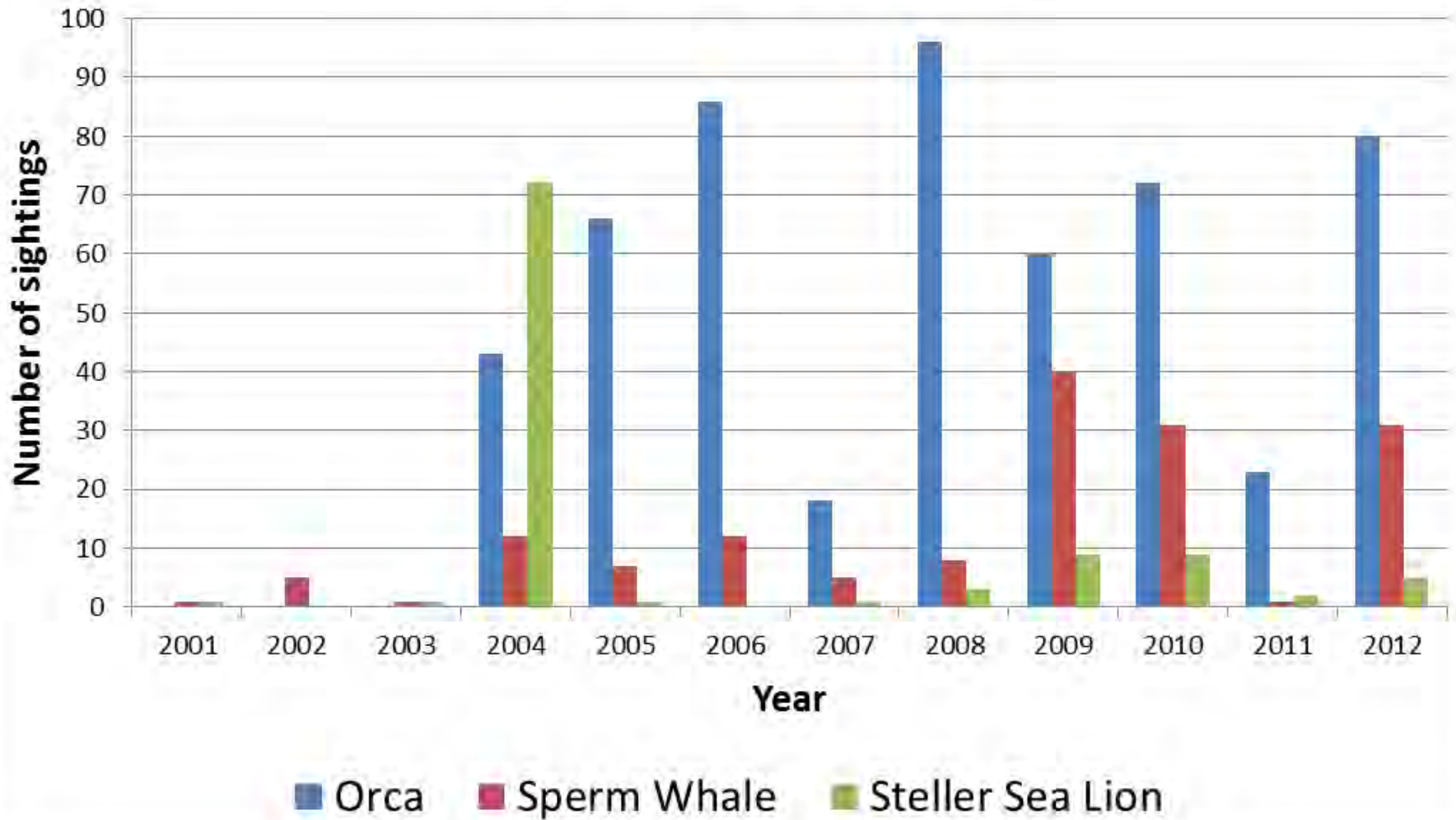
frame(s) _____

- Check here if there was more than one species of marine mammal present at this sighting.

Mammal sighting data 2001-2012



Marine Mammals of Concern



Depredation tracking

- Started in 2009
- Gear damage by toothed whales and pinnipeds



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Marine Mammal Depredation Tracking Form

Toothed whales and pinnipeds

Set	Vessel	Year	Station no.
029	UN1	2012	4286

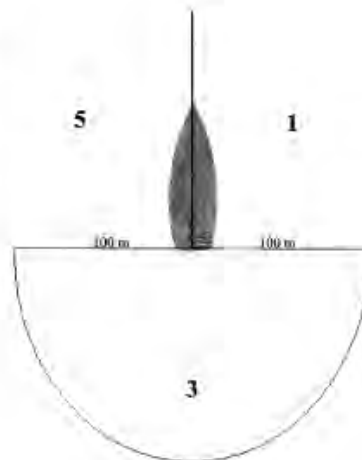
Hints:
 • Offal Sector refers to location, not presence or absence.
 • Avoid code U if possible; if you did not observe a particular behavior, the answer is N.

Species	Code	Sector	Number Sighted	Closest Approach (meters)	Time of First Sighting	Visibility	Hook no. at First Sighting	Hook no. at Last Sighting
Dall's Porpoise	731	1	15	50	1301	4	400	600

	Sector	Steller Sea Lion: 623 Northern Fur Seal: 624 Killer Whale: 720 Sperm Whale: 721 Pacific White-sided Dolphin: 730 Dall's Porpoise: 731
Gear	4	
Offal	4	

Observations	Y, N or U
Damaged halibut.	N
Observed feeding on halibut from gear	N
Damaged bycatch (note below)	N
Observed feeding on bycatch from gear (note below)	N
Feeding on discards	N
Present beyond 100m during haulback	Y
Depredator caught, snagged or entangled in gear	N
Sudden, significant drop in halibut catch	N

Damaged Bycatch	
Species	Code

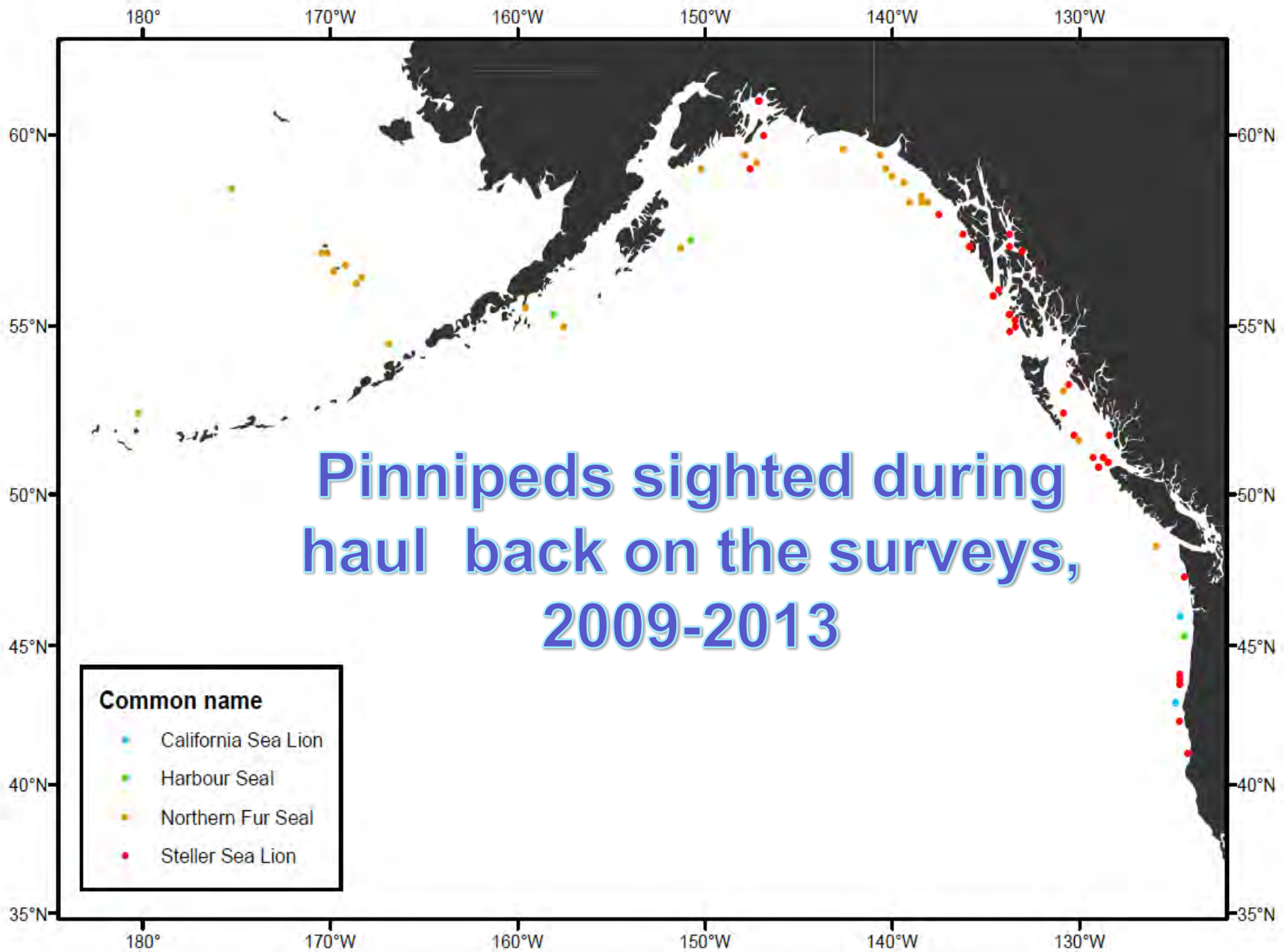


Notes

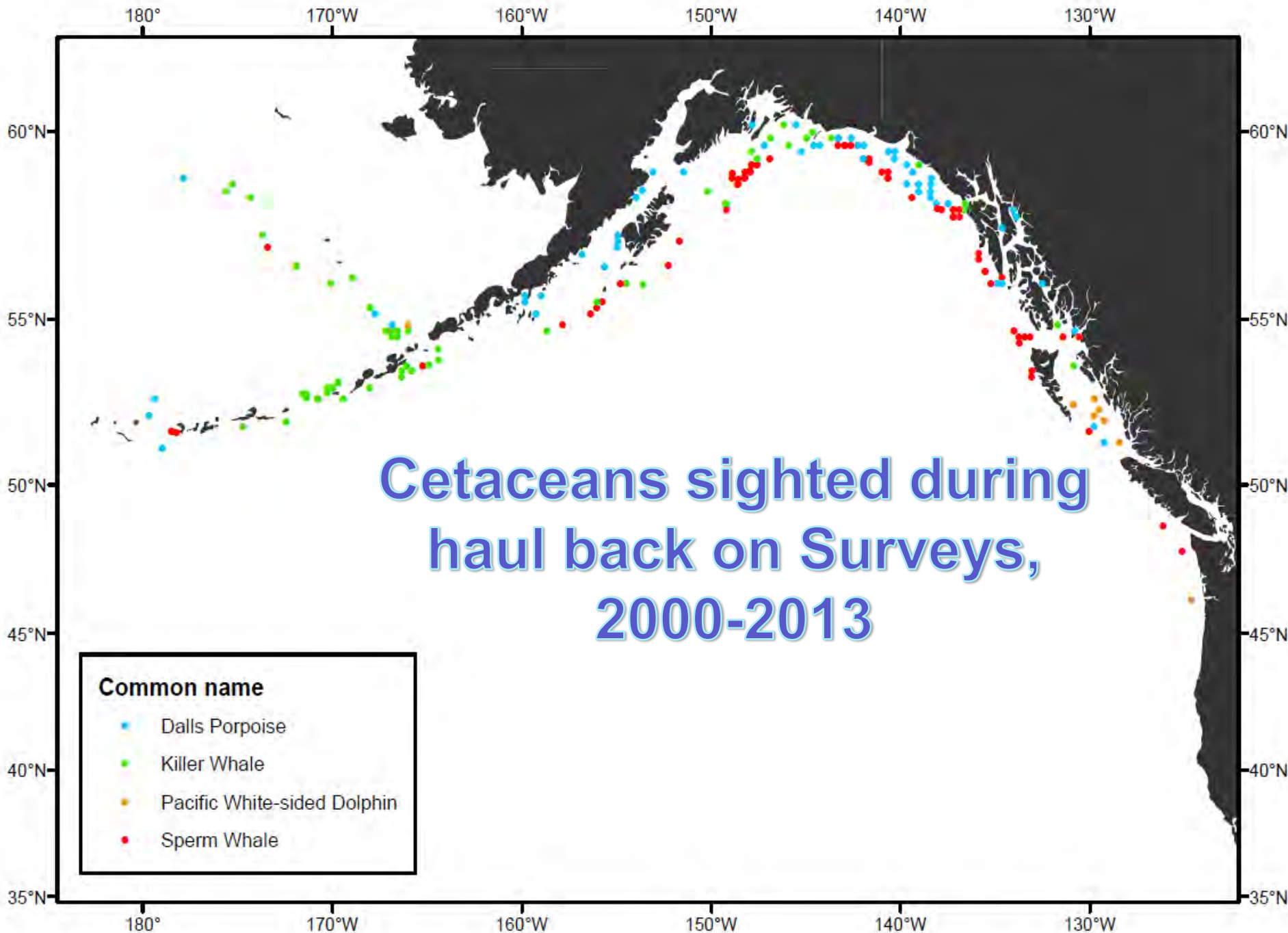
Include green logbook page numbers

A small pod of Dall's porpoises approached the boat during haulback. They didn't appear to be eating anything off the line, but since they came within 100m of the boat we completed this form. See page 76 of our logbook.

Figure 13-52. Depredation form example.



Pinnipeds sighted during haul back on the surveys, 2009-2013



Summary

- Pros
 - Long data series of repeatable stations
 - Large geographic scope
 - Publically available though not well known
- Cons
 - Only in summer
 - Gaps in coverage
 - Samplers aren't experts (rarities might be under-reported)
 - Marine mammal sightings are opportunistic
 - Depredation records are only toothed mammals

- Other data sets

In a continuing project that began in 2009, the IPHC deployed water column profilers from its survey vessels to collect oceanographic data from southern Oregon northward along the coast all the way through the Aleutian Islands and into the Bering Sea

http://www.ecofoci.noaa.gov/projects/IPHC/efoci_IPHCData.shtml