

COASTAL OBSERVATION AND SEABIRD SURVEY TEAM

Reports 07-08

Breaking News

Better late than never! Swamped with verifying data on 8748 carcasses, 4 special research projects, 25 COASST trainings and socials, a website meltdown, a bycatch crisis, staff turnover and a new 'day job' for Julia, we admit we fell behind. Actually, *way* behind. But there was just so much interesting stuff going on last year, we had to let you know. So read fast, because we pledge to get this year's report out early!

Humboldt

Humboldt COASSTers really felt the heat of being situated next to one of the largest Common Murre colonies in the lower 48—between July and October, they cumulatively recorded 360 murre (more than 11 per kilometer in August!). In September, Pete Nelson and Doug Parkinson not only had quite a slough of murre, but an escapee as well. A Severe Macaw, no doubt a fly-away from some private residence. Its bright green mantle and blue primaries made this single wing a “pretty obvious find.”

Joe Ceriani spotted another rare visitor—an immature Glaucous Gull, much more uncommon than its closely related Glaucous-winged counterpart. Resident to the Bering and Beaufort Seas, most adult Glaucous Gulls stay north, even in the winter, but first and second-year birds appear to move farther south.

Good thing Joan Christy and Max Blair sent in the photos, and a note proclaiming, “this is no April Fools’ joke!” to certify that they indeed found a male Asian Ring-necked Pheasant on their April 1st survey.

Oregon South

Big storms throughout the winter months swept away years of accumulated sand and gave Barb Holler and Jim and Charlotte Maloney a chance to see the schooner *Bella*, a lumber ship blown ashore near Florence, Oregon in January 1906.

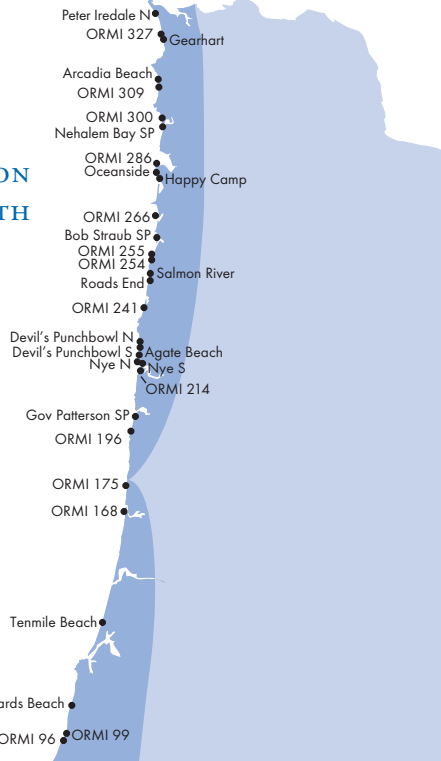
Storm erosion wasn't to blame for the changes Peter Witschi and Dave and Diane Bilderback saw on Oregon Mile 96 in January. They said, “15–20% of the beach has

APRIL 2009

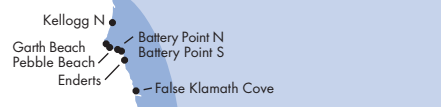


A whale of a tale: Max Blair and Joan Christy snapped a photo of this Sperm Whale near Crescent City, California in February.

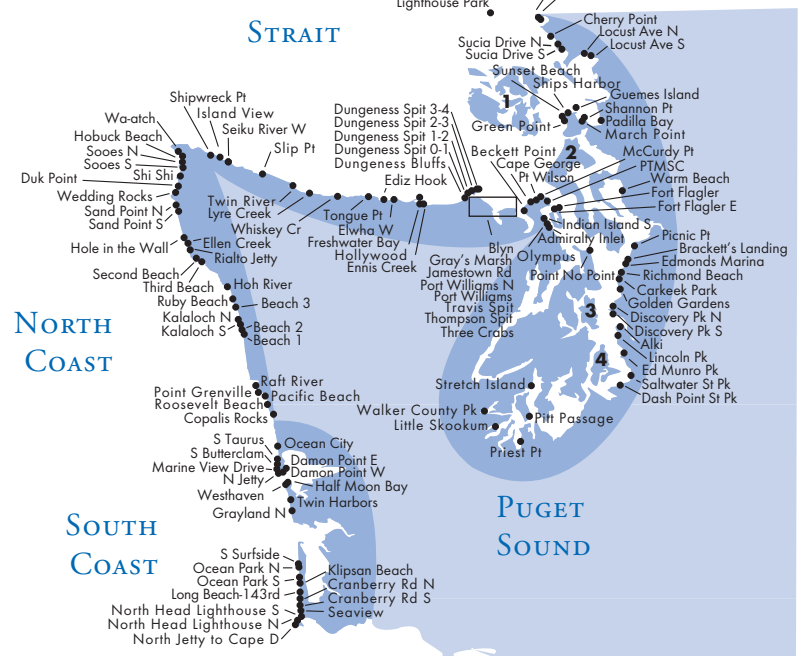
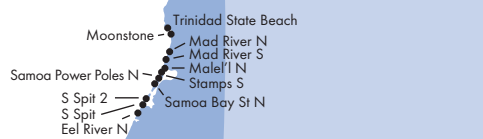
OREGON NORTH



OREGON SOUTH



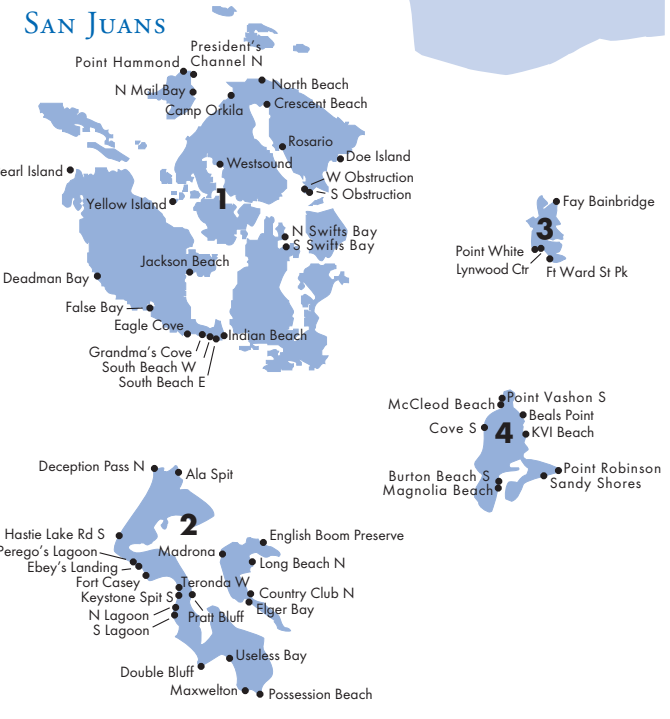
HUMBOLDT, CA



NORTH COAST

SOUTH COAST

PUGET SOUND



SAN JUANS

been bulldozed over for Snowy Plover habitat restoration.” That’s a lot of sand moved around for one very tiny (46 gram/1.6 oz) bird! The coastal breeding Western Snowy Plover prefers dune areas with sparse native beachgrasses, so thickets of European beachgrass get removed progressively each winter to make way for plover ‘summer homes.’

Quite a ways short of its summer home, Oregon Mile 175’s super team of Mary Lou Letsom, Anne Caples, Val Knox, Cindy Burns, Liz Cosko, and Dave and Diane Bilderback found a Bonaparte’s Gull—just a wing, no more.

Oregon North

With the bar set at 10 days straight every month, Oregon Mile 286 uncovered a Whimbrel (the first since 03–04) found in September by Kathleen and Steve Confer. In general, the 286 team just finds more of everything. Their top find, fulmars, came in at over 90 this year! Of course, it always helps to increase searching eyes (and noses)—during the October deluge they upped the ante by adding “an extra person and five dogs—got through many more birds!”

Oregon Mile 327, another fast-tracked daily survey beach, had its day in the sun (several, in fact): Vince Reynolds and Jann Luesse spotted the first south-bound migrant—a tiny Western Sandpiper in mid-July, and Mike Patterson and Steve Warner followed up in November with a Pomarine Jaeger.

Wendy Williams of Agate Beach was graced with several intact specimens this year—the Herring Gull found in March provided a nice comparison to the Western Gull she found in April. The two similar-sized birds are notably different in mantle color (very light grey for the HEGU, dark grey for the WEGU).

South Coast (WA)

Most times we don’t know exactly where those beached birds originate—not so with Tom and Connie Herzig’s Brandt’s Cormorant last December. Its grey LPXLPX band pointed straight to the Farallon Islands, where it was banded just four and a half months prior to washing ashore north of the Columbia River at North Head Lighthouse.

Not much else rarer than an endangered species. When Pat and Russ McClintick combed the sands of Grayland North in August, they found a near-intact Marbled Murrelet in non-breeding plumage. Washington Department of Fish and Wildlife, the agency that keeps track of on-the-water

numbers, reports no detectable decline in the at-sea breeding population; their numbers (dead and alive) reflect a greater abundance of the birds along the north coast of Washington than the south.

Another rare alcid showed up the first day of Westhaven’s January daily survey sequence. Kudos to JoAnn and Rich Lincoln, who correctly singled out a lone Ancient Murrelet from its other relatives also found that day, a Common Murre and a Rhinoceros Auklet.

North Coast (WA)

Beaches on the North Coast are the gem of Washington’s coastline, as Kenny McCoy, Research Technician for the Quinault Nation, knows well, which is why “it’s so important to monitor them, to stay informed about the health of our coastal birds.” So surveying Point Grenville is a pretty nice treat, especially in October, when Kenny wound up with an immature Sabine’s Gull on his Halloween survey.

Ruth Jenkins and John Warrick got a once-in-a-lifetime chance to see COASST’s first Green Sea Turtle stranded on Sand Point South in March. Measuring in at a little over $\frac{3}{4}$ of a meter long, this native to the Northwestern Hawaiian Islands was way off course, more than 2674 miles from home.

The last bird of the day was a good catch for Sue Nattinger in August—a small head poking out from under the sand on Shi Shi Beach turned out to be a Pink-footed Shearwater, a migrant to Washington waters from the coast of Chile. A thick bill with a pale base distinguishes this rare find from its more common tubenose counterparts, Sooty and Short-tailed Shearwaters.

Strait

Paul Blake and Martha Ellul located the Strait’s smallest specimen, a Western Sandpiper, found on Sekiu River West in August. Just a little later that month on Port Williams North, Rose Forbes and Iris Stober came across a completely intact juvenile Red-necked Phalarope. “Red-necked Phalaropes usually outnumber Reds (though they’re hard to tell apart!)—it’s not unusual to see a bunch offshore in August” remarks Barbara Blackie, who coordinates the state’s NOAA seabird cruises.

The Janet duo, Janet Oja and Janet Bruening, had their eyes peeled early one October morning on Dungeness Spit when they noted one very unusual foot type—4 free toes, 2 fused; 3 forward, 1 back. It turned out to be a common bird



M. Marsh

This juvenile Rhinoceros Auklet had just left the nest when it was discovered in September by Pam Dick and Mary Marsh at Dungeness Spit. No wonder, with the largest rhino colony in Washington—Protection Island—next door.

whose characteristic ‘tiirrr’ trill can often be heard around—none other than the Belted Kingfisher.

Though Carmela and Peter Alexander admit “it may have been beginner’s luck,” they found a record number of birds on their January survey of Ediz Hook—nine. Numbers like that are practically unheard of in the Strait of Juan de Fuca, and to top it off, they wound up with some pretty stellar finds, including an American Wigeon and a Greater Scaup.

San Juans

Like the Alexanders, Kim Des Rochers and Mark Smaalders had a bit of beginner’s luck too, enough to make seasoned San Juan volunteers who’ve waited years for birds to show up a little jealous. In July, Kim and Mark found a fresh juvenile California Gull followed by a Brandt’s Cormorant in February—not too shabby. But it’s not all luck—their beach (carefully chosen) faces northwest into President Channel, for maximum onshore wind (and dead bird) action.

That’s not to say that birds aren’t showing up on other San Juan beaches. In February at Deadman Bay, Judy Trieber found an “obvious kill based on feather distribution but

Are we adding ostrich to the species list? Pete Berg shows off a giant ‘egg’ (actually the remains of a mooring buoy) found during his Keystone Spit survey in Puget Sound.

nothing to measure—probably a gull,” but couldn’t beat the scavengers to any of the parts, “I should have been here earlier!”

But the biggest island news came on August 29th, when the 50-ft purse seiner F/V *Esperanza*, hailing from Everett, capsized approximately two miles west of Cattle Point on San Juan Island. It left a few signs of oil along the shoreline of Grandma’s Cove (as reported by Dick Weisbrod and William Tiederman), but, eight days later, Judy Trieber found no sign of oil and no oiled birds.

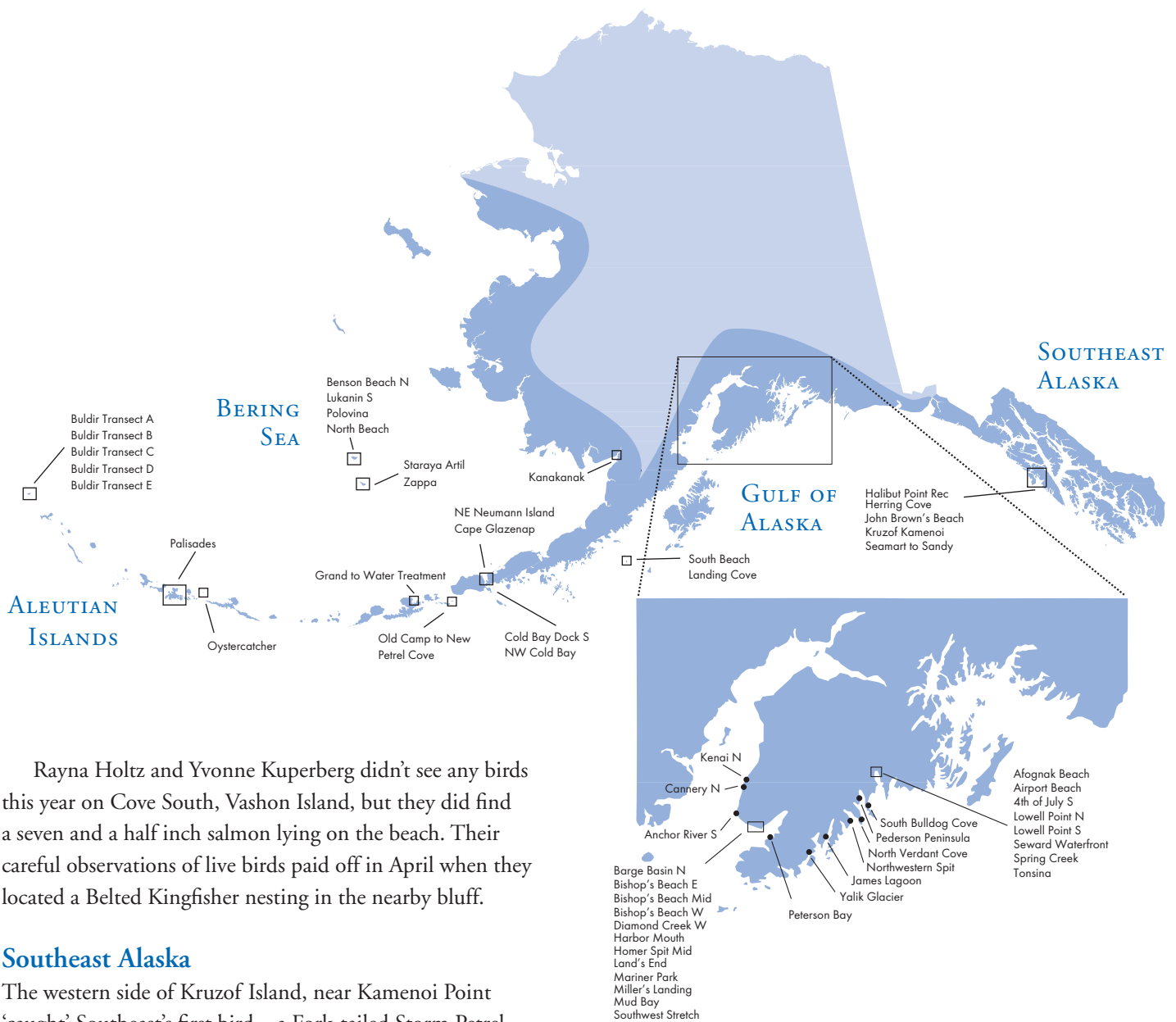
Puget Sound

Bird deposition in Puget Sound is always a little unpredictable—some months with birds, others without; might be a rare species, might be a common one. But when Rick Spaulding found 40 birds in one day at Fay Bainbridge State Park, he knew something was up—50 birds per kilometer was simply unprecedented (read the full story in *What’s Washed In*, page 12). One thing was certain, though, the event really impressed upon Rick “the importance of long-term monitoring and the ability to track the arrival of new, unmarked birds.”

Don and Joyce didn’t find close to 40 birds (thankfully) but they did win bragging rights to a light morph Snow Goose in January. Not surprisingly, all COASST’s Snow Goose records come from beaches neighboring Skagit or Port Susan Bay, sites nearest the Skagit and Stillaguamish river deltas, where over 80,000 geese come to overwinter in October–April.



L. Berg



Rayna Holtz and Yvonne Kuperberg didn't see any birds this year on Cove South, Vashon Island, but they did find a seven and a half inch salmon lying on the beach. Their careful observations of live birds paid off in April when they located a Belted Kingfisher nesting in the nearby bluff.

Southeast Alaska

The western side of Kruzof Island, near Kamenoi Point 'caught' Southeast's first bird—a Fork-tailed Storm Petrel. Scott Harris also laid claim to the region's first sea otter stranding. Scott, who travels by boat across Sitka Sound to Kruzof Island and then follows a short forest route out to his beach, also found lots of tracks from brown bear, black-tailed deer, marten, river otter, and mink.

Floyd Tomkins got close to his first bird record, but scavengers were just a little faster. He "saw a left wing of a Thayer's Gull, recently dismembered." Like Scott's beach, Floyd often notes tracks, especially from deer forced to feed at lower elevations due to the influx of snow in the wintertime.

Speaking of snow, Alan Unmack and Eric Morrison didn't find any birds frozen, iced, or snowed-over at Herring Cove in January, just a lone Dungeness crab. Based on feedback and concern from volunteers regarding

carcasses that may be 'lost' due to winter beach conditions, Alaskans kept careful track of snow depth, ice cover, beach accessibility and tracks/footprint sightings to help better understand what role winter weather plays on carcass deposition.

Gulf of Alaska

With three beaches under his belt, Dan Thorington has a chance to edge out scavengers most months, but not on Land's End in January. "This is what I'm up against—Jeanne Keene is feeding between 150 and 185 eagles daily (her estimate). I don't have a chance of finding any beached birds with that many eagles patrolling the area." The eagle lady of Homer most certainly had Dan beat this winter!

In September, Lee Mayhan and Norbert Neumann found COASST—Alaska’s first grebe, a Red-necked. In the higher latitudes, Eared, Western and Clark’s Grebes drop off the map leaving only Red-necked and the much smaller Horned Grebes to share the Alaskan coastline.

A quiet April day at the beach, for dead birds at least, but not live ones: Jessica Ryan and Laurie Stuart saw a passel of waterbirds at Lowell Point South, including two Black Oystercatchers, and a mixed flock of goldeneyes and scoters just off the beach.

Aleutian Islands

Another productive year on Alaska’s western front. For the second year in a row, the seasonal field crew on Buldir Island turned up an Aleutian Canada Goose. This subspecies (NOT the same as the *canadensis* subspecies found at a golf course or lakefront near you) was nearly extirpated from its breeding grounds in the Aleutian Islands due to fox predation. In the early 1960s, these geese numbered in the 100s, but through extensive collaboration with state, federal, tribal and private stakeholders, the goose came off the list in 2001 (now hovering around 114,000 birds), a tribute to all those who fought for their comeback.

Research biologists weren’t the only ones surveying the view of auklets, murres and puffins breeding in the Aleutians. Amongst the boulders on Buldir’s north beach, Erik Anderson encountered a near-intact Peregrine Falcon.

Over on Aiktak Island, Jeff Wells and Micah Miller

found signs of another top predator/scavenger in the Aleutians—“a freshly killed Tufted Puffin found on New Camp Beach with eagle tracks around the kill.” The less delectable portion—wings, feet and sternum—were enough to make a positive identification.

Bering Sea

Tubenoses, tubenoses, tubenoses filled the pages of COASST surveys in the Bering Sea, with Short-tailed Shearwaters clearly in the lead. Amongst all those petrels washing in on St. Paul, Slade Sapora and Greg Thomson pulled a Red-faced Cormorant from the wrack on North Beach in August.

With winter storms already picking up, Kristine Sowl, Michele Kuter and Ryan Burner noticed considerable changes to Neumann Island’s topography by October: “sand shelf at the southwest end is completely gone. Considerable wrack present, and sand washed way into the vegetation.” Washing up during the same month on the west end of Izembek Lagoon—the region’s first Horned Puffin, just starting to shed the horny sheath at the base of the bill and slip into a sleeker, non-breeding plumage.

A single bill, wing or foot is usually all that Karin Holser finds after the Bering Sea and scavenging foxes have taken their turn at carcasses on St. George beaches Staraya Artil and Zappa. This year, however, Karin turned up not one, but two near complete carcasses, a Thick-billed Murre in December and a Crested Auklet in May. ■

Surf’s up! Karin Holser captured a stunning December day (aka: cold, wet and windy) at Zappa Beach, St. George Island, Alaska



Mortality Related to Human Activities

SPECIES	#	BEACH
ENTANGLED BIRDS		
Large Immature Gull	6	Battery Point S ² Marine View Drive ² Marine View Drive ² N Jetty to Cape D ⁵ Ocean City ²
Common Murre	4	S Butter Clam ¹ Copalis Rocks ³ Eel River N ² Roads End ² Westhaven ²
Northern Fulmar	3	Marine View Drive ⁴ Ocean Park S ² OR Mile 327 ²
Glaucous-Winged Gull	2	Eel River N ² OR Mile 286 ¹
Pacific Loon	2	Third Beach ³ Third Beach ³
Black-footed Albatross	1	Hobuck Beach ¹
Common Loon	1	Battery Point S ²
Mew Gull	1	Salmon River ¹
Sooty Shearwater	1	Roads End ⁴
Grebe	1	Hobuck Beach ³
Kittiwake	1	Homer Spit Middle ¹
White-winged Scoter	1	Brackett's Landing ²
¹ Hook, ² Line, ³ Net, ⁴ Rope, ⁵ Plastic		
OILED BIRDS		
Common Murre	11	Agate Beach Cranberry Rd. S Long Beach- 143 rd N Marine View Drive N Head Lighthouse N N Head Lighthouse S OR Mile 300 Second Beach S Taurus S Butterclam
Northern Fulmar	4	Long Beach- 143 rd N OR Mile 196 S Taurus Westhaven
Sooty Shearwater	1	Hobuck Beach
Grebe	1	S Taurus

Oiled and Entangled Birds

A slight uptick in total oiling this year, to .39% of all identified birds. That murre top the list is no surprise. At 25 birds, this year's entanglement list was quite a long one. Percentage-wise that works out to .61% of all identified birds, a greater proportion than in the two previous years.

Species of Concern

In total, almost 1700 sensitive carcasses of 26 species washed ashore, or just over 40% of all identified birds.

SPECIES	AK	WA	OR	CA
Common Murre ¹¹	12	399	313	362
Rhinoceros Auklet ¹⁰	1	47	27	15
Brandt's Cormorant ¹¹		38	70	70
Sooty Shearwater ¹⁴	1	32	10	
Common Loon ¹¹	2	21	3	2
Cassin's Auklet ^{3, 10, 11, 12}		17	9	2
Black-footed Albatross ¹⁴		14	3	
Fork-tailed Storm-Petrel ^{10, 12}	5	11	9	
Western Grebe ¹¹		9	68	32
Brown Pelican ^{1, 4, 5, 6}		8	9	4
Heermann's Gull ¹⁴		7	2	4
Marbled Murrelet ^{2, 6, 7, 8, 14}		7	5	
Tufted Puffin ^{3, 10, 11, 12}		4	4	
Ancient Murrelet ¹⁴		2	3	
Pink-footed Shearwater ¹⁴		1		
Bald Eagle ^{2, 6, 9}	4	1		
Clark's Grebe ¹⁴		1	1	1
Trumpeter Swan ¹⁴		1		
Brant ¹²		1		
Buller's Shearwater ¹⁴			1	
Canada Goose (a) ^{2, 5, 13, 12}	3			1
Peregrine Falcon ^{2, 4, 5, 10, 13}	2			
Ref-faced Cormorant ¹⁴	3			
Red-legged Kittiwake ¹⁴			1	

¹ Federally Endangered, ² Federally Threatened, ³ Federal Species of Concern, ⁴ WA State Endangered, ⁵ OR State Endangered, ⁶ CA State Endangered, ⁷ WA State Threatened ⁸ OR State Threatened, ⁹ WA State Sensitive, ¹⁰ OR State Sensitive, ¹¹ WA State Candidate, ¹² CA Species of Concern, ¹³ AK Species of Concern, ¹⁴ 2007 Audubon WatchList

Beached Birds Identified to Species

SPECIES	YR 9 #	YR 9 %	YR 8 %	YR 7 %	YR 6 %	YR 5 %	YR 4 %	YR 3 %	YR 2 %	TOTAL #	TOTAL %
Northern Fulmar	1246	30.5	9.5	12.4	8.0	57.1	23.9	7.9	39.7	3970	24.9
Common Murre	1086	26.6	19.5	28.8	47.0	17.8	23.9	23.0	15.7	4271	26.8
Large Immature Gull	369	9.0	10.7	10.6	13.3	7.7	10.6	19.6	8.3	1648	10.3
Brandt's Cormorant	178	4.4	3.0	3.8	3.3	1.2	1.9	2.3	0.8	489	3.1
Glaucous-winged Gull	138	3.4	6.2	2.3	3.8	2.0	3.3	3.6	5.0	541	3.4
Western Gull	124	3.0	5.3	1.7	3.3	0.9	1.8	2.2	0.8	407	2.6
Western Grebe	109	2.7	3.4	6.5	0.8	0.9	2.7	8.1	2.5	499	3.1
Rhinoceros Auklet	90	2.2	13.1	10.3	1.5	1.0	1.4	1.8	1.7	739	4.6
Pelagic Cormorant	68	1.7	2.1	1.7	2.7	1.3	2.5	1.4	0.8	297	1.9
Short-tailed Shearwater	67	1.6	0.7	0.8	0.9	0.1	0.4	1.4	0.8	143	0.9
White-winged Scoter	46	1.1	1.3	1.1	1.0	0.5	0.8	1.1		157	1.0
Sooty Shearwater	43	1.1	0.9	1.2	2.0	0.9	2.2	7.2	5.8	243	1.5
Surf Scoter	40	1.0	1.1	0.9	1.1	0.7	1.5	0.5	0.8	156	1.0
Black-legged Kittiwake	29	0.7	1.9	0.2	0.2	0.2	0.4	2.2	3.3	105	0.7
Cassin's Auklet	28	0.7	4.7	5.9	2.0	1.0	1.4	2.2		391	2.5
Common Loon	28	0.7	0.3	0.8	0.4	0.4	0.3	0.5		84	0.5
Pacific Loon	28	0.7	0.5	0.4	0.3	0.1	0.8	0.5		72	0.5
Fork-tailed Storm-Petrel	25	0.6	1.5	0.6	0.2	0.3	0.1	0.4	5.3	88	0.6
Double-crested Cormorant	23	0.6	0.5	0.7	0.5	0.6	0.6	0.4	1.7	93	0.6
California Gull	22	0.5	1.1	1.2	0.7	0.5	1.4	2.2	1.7	142	0.9
Brown Pelican	21	0.5	0.4	0.1	0.4	0.1	0.3		0.8	48	0.3
Pigeon Guillemot	21	0.5	1.0	0.9	1.0	0.5	0.9	0.2	1.8	117	0.7
Black-footed Albatross	17	0.4	0.5	0.5	0.7	0.2	0.2	1.4	2.5	75	0.5
Tufted Puffin	16	0.4	1.0		0.1	0.1		0.2		42	0.3
Heermann's Gull	13	0.4	0.3	0.2	0.3	0.2	0.4	0.4		46	0.3
Canada Goose	12	0.3	0.6	0.03	0.3	0.1	0.5	0.4		45	0.3
Marbled Murrelet	12	0.3	0.4	0.2	0.1	0.04	0.2	0.7		36	0.2
Ancient Murrelet	9	0.2	0.4	0.2	0.1	0.1	0.3	0.5		36	0.2
Red-throated Loon	9	0.2	0.1	0.2	0.1	0.04	0.2	0.4		25	0.2
Leach's Storm-Petrel	8	0.2	0.1	0.1	0.1	0.1		0.7		23	0.1
American Crow	7	0.2	0.3	0.5	0.4	0.3	0.2	0.9		49	0.3
Green-winged Teal	7	0.2	0.3	0.1	0.1	0.04	0.2			24	0.2
Mew Gull	7	0.2	0.2	0.2		0.04	0.2	0.9		26	0.2
Northern Pintail	7	0.2	2.6	0.1	0.3					31	0.2
Rock Dove	7	0.2		0.1	0.05	0.1	0.1			11	0.1
Bufflehead	6	0.1	0.1	0.1	0.3	0.1		0.4	0.8	24	0.2
Parakeet Auklet	6	0.1	0.2	0.1						12	0.1
Thick-billed Murre	6	0.1	0.05							7	0.04
Bald Eagle	5	0.1	0.05		0.1	0.1	0.1	0.4		14	0.1
Caspian Tern	5	0.1	0.3	0.3	0.8	0.4	0.7	0.5		61	0.4
Greater Scaup	5	0.1	0.2	0.1	0.05	0.1	0.2	0.2		20	0.1
Herring Gull	5	0.1	0.05	0.1	0.1	0.1	0.3	0.4		21	0.1
Horned Puffin	5	0.1	2.6	0.1	0.3					65	0.4
American Coot	4	0.1	0.4	0.03		0.04			1.7	17	0.1
Northwestern Crow	4	0.1								4	0.03
Red-necked Grebe	4	0.1	0.05	0.1		0.2		0.2		13	0.1
Varied Thrush	4	0.1	0.1	0.1	0.3	0.04				15	0.1



SPECIES	YR 9 #	YR 9 %	YR 8 %	YR 7 %	YR 6 %	YR 5 %	YR 4 %	YR 3 %	YR 2 %	TOTAL #	TOTAL %
Western Sandpiper	4	0.1		0.03				0.2		5	0.03
Belted Kingfisher	3	0.1	0.05							4	0.03
Clark's Grebe	3	0.1	0.2	0.2				0.2		13	0.1
Red-faced Cormorant	3	0.1	0.05							4	0.03
Sabine's Gull	3	0.1	0.1	0.03						6	0.04
Snow Goose	3	0.1	0.3	0.03						9	0.1
American Robin	2	0.05		0.03		0.04				5	0.03
Bonaparte's Gull	2	0.05	0.1	0.1		0.04	0.1			9	0.1
Chicken	2	0.05			0.05		0.1			3	0.02
Crested Auklet	2	0.05	0.1							4	0.03
Glaucous Gull	2	0.05	0.1	0.1		0.04		0.2		9	0.1
Great Blue Heron	2	0.05	0.05	0.1	0.1	0.04	0.1			12	0.1
Horned Grebe	2	0.05	0.1			0.1		0.2		7	0.04
Mallard	2	0.05	0.5	0.1	0.1	0.3	0.1	0.4	0.8	29	0.2
Peregrine Falcon	2	0.05		0.03						4	0.03
Pomarine Jaeger	2	0.05		0.03						3	0.2
Red-necked Phalarope	2	0.05								2	0.1
Whimbrel	2	0.05			0.05		0.1			4	0.03
American Wigeon	1	0.02		0.03		0.04				3	0.02
Band-tailed Pigeon	1	0.02	0.05			0.04				3	0.02
Barred Owl	1	0.02				0.1	0.1			1	0.01
Black Scoter	1	0.02	0.05	0.1		0.04	0.1	0.2		7	0.04
Brant	1	0.02	0.05	0.1			0.1	0.2		6	0.04
Buller's Shearwater	1	0.02		0.03		0.1				4	0.03
Common Raven	1	0.02	0.05							2	0.01
Eared Grebe	1	0.02					0.2			11	0.1
Great Egret	1	0.02								1	0.1
Greater White-fronted Goose	1	0.02		0.03	0.05			0.2		2	0.01
Least Auklet	1	0.02								1	0.1
Least Sandpiper	1	0.02								1	0.1
Long-tailed Duck	1	0.02								1	0.1
Northern Shoveler	1	0.02	0.05	0.1						4	0.03
Pink-footed Shearwater	1	0.02		0.1			0.1			2	0.01
Red Phalarope	1	0.02	0.05	1.6	0.05	0.4	10.8	0.4	0.8	222	1.4
Red-legged Kittiwake	1	0.02	0.05	0.03						3	0.02
Ring-billed Gull	1	0.02	0.2			0.04	0.1	0.2		9	0.1
Ring-necked Pheasant	1	0.02	0.05	0.03	0.05				0.8	5	0.03
Severe Macaw	1	0.02								1	0.01
Steller's Jay	1	0.02								1	0.01
Trumpeter Swan	1	0.02	0.05							2	0.01
Turkey Vulture	1	0.02	0.05							2	0.01
Wilson's Warbler	1	0.02		0.03	0.05					2	0.01
TOTAL FINDS	4086		1921	2884	2100	2745	1467	557	121	15938	
TOTAL SPECIES	87		79	76	56	60	56	50	24	118	

Species totals, excluding unknowns and refunds. Note that major species—accounting for greater than 5% in any COASST year—are in bold. Only species found in Year 9 are listed. Cumulative totals for each species are listed in the right-hand darker-shaded columns.

What's Washed In?

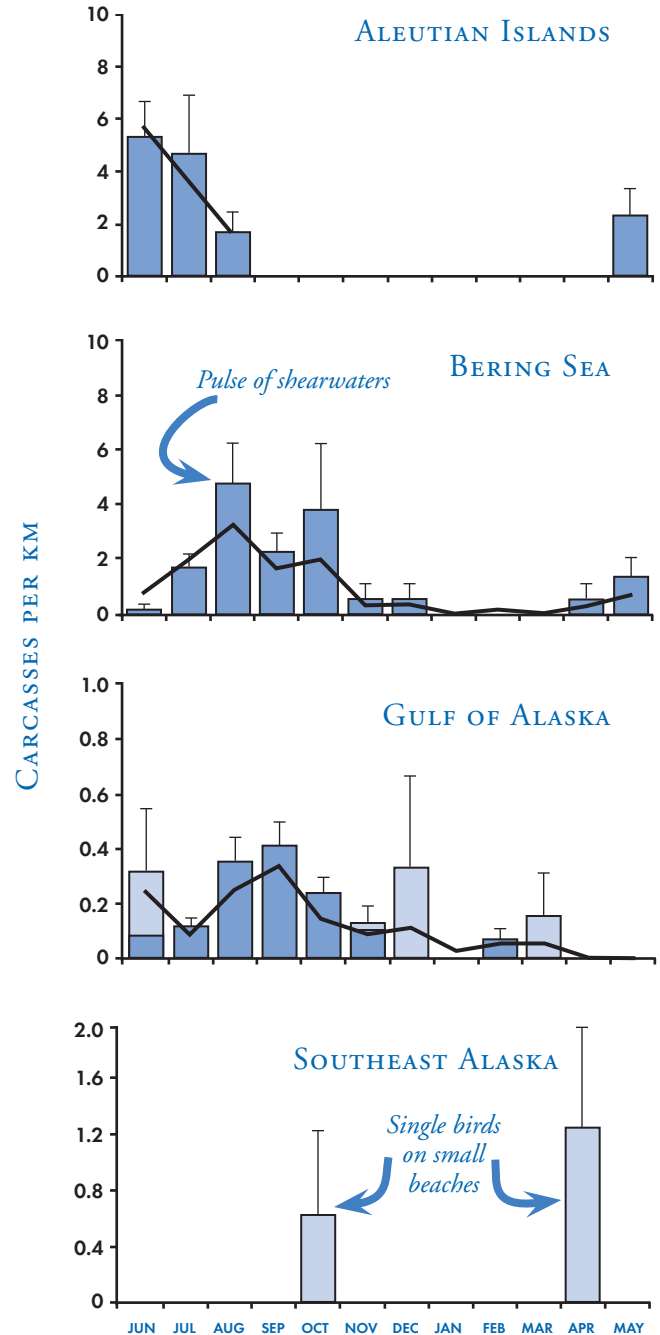
Alaska

Another year of data from our growing Alaska program suggests that the patterns of beaching in this vast coastline really are different from the lower 48. Although most things are bigger in Alaska, and that is certainly true of the live seabird populations—more than 100 million seabirds of 66 species use Alaskan marine habitats, from the Marbled and Kittlitz's Murrelets diving in the outflow of tidewater glaciers to the shearwaters and albatrosses winging their way across great stretches of North Pacific open ocean—the beached bird 'population' remains small. With the exception of a pulse of shearwaters in the Bering Sea in August that bumped up beaching rates over the usual 0.6 birds/km, encounter rates were in the range we've witnessed in the last few years.

We do know that some Alaskan species head south for the winter; Northern Fulmars are an excellent example. But winter at-sea surveys show that at least some of the Alaskan nesters stick it out for the winter. Martin Renner, a postdoctoral fellow at the University of Washington, analyzed a whole bunch of summer and winter(!) at-sea surveys from the Aleutian Islands and found that the fish-eaters, like murrets and kittiwakes, stayed put, while the planktivores—Whiskered, Crested and the diminutive Least Auklets—moved out. Farther north, offshore St. Lawrence in the Bering Sea, winter surveys on ice-breakers found the entire world's population of Spectacled Eiders, approximately 330,000 birds total. So part of the consistent lack of a fall-winter signal is the 'snowbird' phenomenon. But there's still a mystery about the species that tough it out.

Other than a very mild winter-kill signal witnessed in some of the protected waters (like Kachemak Bay and Resurrection Bay), we just aren't seeing many birds. But why aren't these winterers also washing up on Southeast beaches? Perhaps we're not sampling enough beaches yet, or perhaps these fjords afford weather protection but not the food resources hungry seabirds need to 'tank up' for the winter. Perhaps the steeper, cobble beaches characteristic of this area just don't 'grab' flotsam like the flat, sandy beaches to the south. We hope to tackle these issues in the coming years, by increasing our presence in Alaska, and potentially by conducting a persistence survey in these 'no bird' areas. Stay tuned.

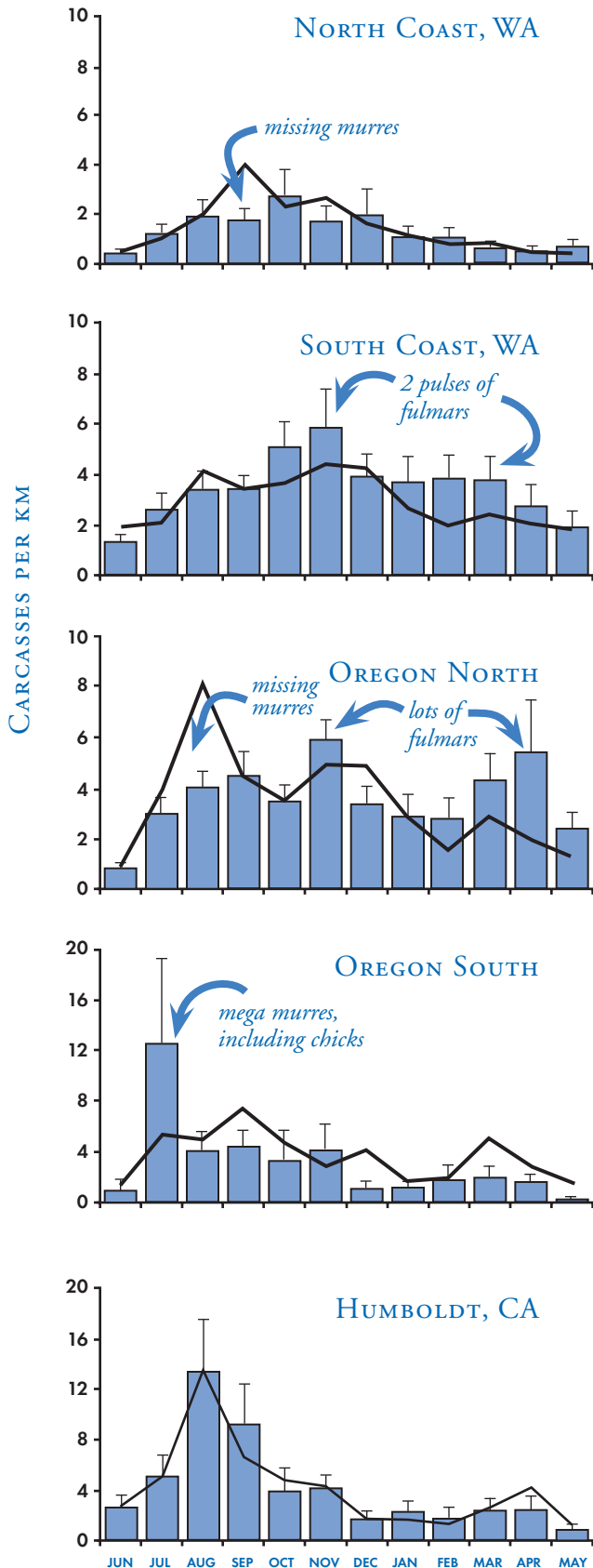
ALASKA



Bars represent the average monthly encounter rate on all COASST beaches. (Error bars = standard error) Long-term averages are indicated by the dark line.

What's the shading difference? Small beaches with lots of birds spiked the average. Light bars in Alaska regions show average monthly deposition when all beaches are included; darker bars represent deposition when short beaches (<0.5 km) are excluded.

OUTER COAST



Lower 48 Outer Coast

The murre post-breeding die-off started early this year, probably as a result of dismal colony success along the Washington and Oregon coasts. Roy Lowe, Project Leader of the Oregon Coast National Wildlife Refuge Complex, reported widespread breeding failure of colonies in the northern half of the state. Farther north at Tatoosh Island, Julia and the field crew witnessed an unprecedented second year of total breeding failure of the murre. Without a reason to stay on their breeding colonies, Pacific Northwest murre apparently headed south. By July, many more murre than usual were washing into the Oregon South beaches. And the survivors continued south into California, where breeding success was apparently normal. Between the locals and the Pacific Northwest migrants, Humboldt beaches experienced a peak of more than twice the normal size in August and September.

An early murre die-off translated into ‘missing’ murre later in the season. With the exception of the beaches along the South Coast of Washington (which seem to attract birds no matter what), most outer coast regions in the Pacific Northwest experienced an August–September lull. Part of this gap is due to the fact that most breeders had high-tailed it for southern locations in previous months. But low-to-no breeding also meant fewer chicks. Along the North Coast of Washington, murre chicks made up only a scant 13% of the late summer–fall (July through October) murre body count, indicating breeding was a bust in this state’s murre colonies. The South Coast of Washington and Oregon North weren’t much better—coming in at just about double (23 and 21%, respectively), way lower than in previous years. But murre reproduction definitely picked up to the south. COASST sites in Oregon South and northern California (Humboldt) not only picked up many more murre, but tons more chicks, for an average of almost 60% of total murre carcasses in the post-breeding period. Clearly, whatever was affecting the northern colonies didn’t make it much past central Oregon.

Fall and early winter brought the usual complement of ‘snow birds’ fleeing the cold and inhospitable Alaskan winter. Northern Fulmars graced the beaches from Washington to California in October and November, bumping up November numbers in Washington and Oregon. But by December, things were quieting down. Fulmar survival appeared higher

than normal, producing a 'gap' in the December Oregon and California encounter rates. And there were no spectacular winter-kill wrecks to report either.

Spring was once the season of replenishment, when many local breeders put on that last layer of fat before mating, and northern migrants (the Rhinoceros and Cassin's Auklets, and the Northern Fulmars) high-tailed it back to their burrow and cliff sites in British Columbia and Alaska. But since 2005, spring has brought a third wave of birds to West Coast beaches. Mostly Rhinos and Cassin's. The body count has been high enough, and steady enough, to create a small hump in the long-term average pattern, most noticeable in March. And this year was right on schedule, albeit with a new bird. Starting in February, fulmars graced the beaches from Humboldt to the South Coast of Washington. And the body count grew. March and April along the Oregon North Coast were beset with fulmars.

Since we've pieced together the 'spring migration' story, we've always wondered about fulmars. They obviously migrate north along with the Rhinos and Cassin's. Why only the latter on the beaches? Somehow in better body condition? Too far offshore? This year seems to settle the point: fulmars do occur, at least occasionally, on the beaches during their spring migration. The one consolation was that Rhinos and Cassin's made it past the COASST beaches unscathed.

Inside Waters of Washington

Same old, same old, with one major exception. Inside beaches never accrue birds the way outside beaches do. Part of the difference is physical: the wide, sandy beaches that grace much of the Pacific Northwest outer coast are largely absent from greater Puget Sound. Why is this an issue? Low angle, sandy beaches are the ultimate 'grabber' substrate. A dry day with just a little wind will blow fine sand across anything that lands on the beach, quickly anchoring it so that the incoming tide loses the age old tug-of-war between sea and land. But Puget Sound beaches are steeper, and more apt to be covered in pebble or cobble—substrates that don't take hold of a carcass.

Of course, another reason Puget Sound beaches see fewer carcasses is simply that this large, productive body of water is protected. Even fierce winter storms can't whip up the waves that outer coast beaches regularly experience. Marine birds are protected here, and that's one reason so many species winter in the area.

The Strait of Juan de Fuca did see minor upticks in carcass counts in September, and again in January. An echo of the murre and fulmar signals heard so loudly on the outer coast? Turns out that in both months there was just more of everything—murres, fulmars, gulls, grebes—you name it. But once into Puget Sound proper, rates were largely normal. In fact, in the San Juan, this year was an especially sleepy one. Only lone California and Glaucous-winged Gulls kept things going.

Puget Sound was a different story, at least on the 27th of October 2007. In fact, Rick Spaulding didn't expect to see much on his beach—Fay Bainbridge State Park—when he went out to do his COASST survey. That's because, if history is a guide, he might expect to see a gull or a large grebe, but only once in a great while. Diehard Puget Sounders know that chances are you're not going to find a bird. In fact, about 85% of surveys of greater Puget Sound beaches (including the Strait, San Juans, and Puget Sound proper) are birdless.

It was a clear and calm day, a beautiful fall morning—at least until Rick got to the beach, where he found a perfect murre: intact, barely disheveled, lying on the low beach. But then he found another, an another, an another. Suddenly the beach was littered with murres. In all, 46 of them plus one Western Grebe in less than a kilometer. And with the tide rising, Rick had a lot of processing work to do before the



*Widespread
breeding failure
in Washington
and northern
Oregon
translated into
almost no
Common Murre
chicks seen on the
colony or on
beaches since 2006.*

water lifted the birds off the beach and carried them away. Just one shot, one day, but Rick was there. And so COASST collected our first data on gillnet bycatch mortality. Eventually the total body count would rise to over 300.

Back at the University of Washington, graduate student Nathalie Hamel was curious about the impact gillnet bycatch might have on Pacific Northwest seabirds, and especially murre. Her graduate research centered on murre nesting on Tatoosh Island, and she had just finished a study tracking the movements of post-breeding murre. With almost 80% of the colony migrating into greater Puget Sound and the Strait of Georgia after fledging their chicks, Nathalie worried whether the birds from this colony—one of the last, largest and most stable breeding colonies in Washington—were among the victims. Could gillnet mortality cause a population decline on Tatoosh?

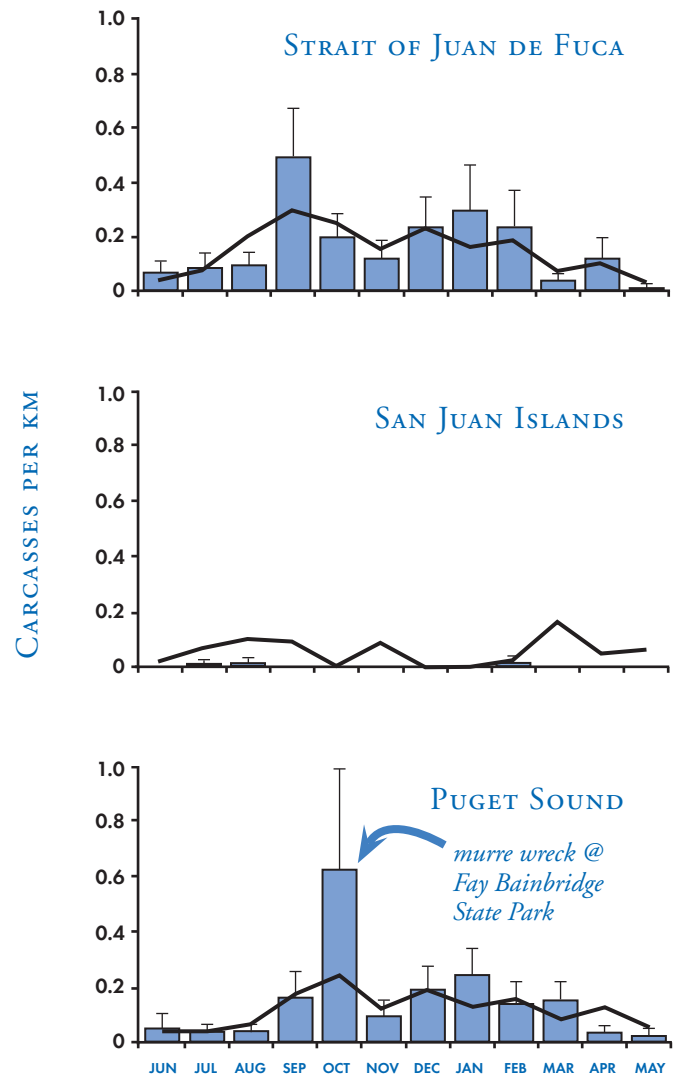
Any catastrophic event—an oil spill, an especially severe storm, El Niño—can produce a substantial body count. That’s the bad part. But seabird wrecks are usually fairly contained in space and time. They don’t happen over a large extent of territory, sometimes only a few beaches; and they are usually restricted in time to a few days, occasionally a week or more. Nathalie wondered how the murre wreck Rick helped document stacked up against all of the other mortality sources murre experience in the Sound. And how often did fisheries-associated strandings happen? Every year? Monthly during the fishing season? More than that?

To answer this question, Nathalie went hunting for more information on seabird wrecks in greater Puget Sound. Scientific literature, government reports, veterinary laboratory records, even newspaper archives formed the basis of her search. Turns out fisheries-associated wrecks have been recorded in 12 of the last 39 years. A total of 2225 carcasses, most of them murre, have been recorded on Salish Sea beaches (that’s Puget Sound and the Straits of Georgia and Juan de Fuca). That’s a lot. Or is it?

To put that number in perspective, Nathalie turned to the COASST data, and to our sister program, British Columbia Beached Bird Survey (BCBBS), for baseline data. Other than Rick’s spectacular carcass count, how many murre did the ‘average’ COASSTer find during the fishing season? In fact, how many birds overall?

When she compared the baseline data against the wreck data, Nathalie discovered what anyone experiencing a wreck knows viscerally—wreck numbers are much higher. Even

INSIDE WATERS



when she only used baseline surveys in which at least one bird was found (or 15% of all surveys) the comparison was stark: 17 carcasses per kilometer on average for fisheries-associated wrecks and less than one carcass per kilometer for baseline surveys.

But numbers can be misleading. It’s important to remember that fisheries wrecks, while severe, appear to be very restricted in space and time. By contrast, the baseline signal captured by the COASST and BCBBS data are indicative of what is happening throughout inside waters on a monthly basis. When Nathalie did some ‘back of the envelope’ calculations to extrapolate baseline rates to the ‘surveyable’ coastline (just over 6200 kilometers of beach and mudflat), a different picture started to emerge. Multiplying the average

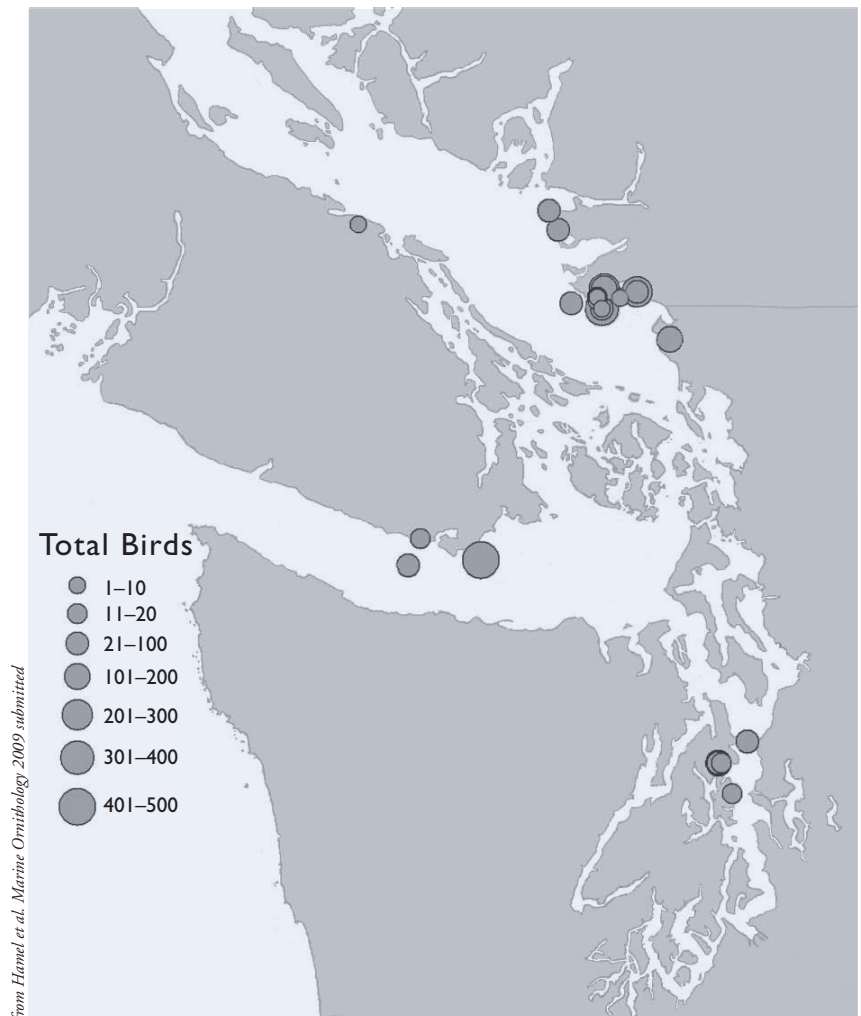
encounter rate by the number of surveyable kilometers of coastline by the 39 years encompassed by the wreck data, returned a very large number: 400,000 carcasses—about 90,000 of them murre—may have washed up onto Salish Sea beaches. What does this mean? Basically, that catastrophic fisheries mortality—something that would result in a wreck like Rick saw—is only a minor component of the total mortality experienced by wintering seabirds in Puget Sound.

Does this mean we shouldn't worry about the effects of gillnet fishing on seabirds? Of course not. Some nearby populations—like Tatoosh Island for murre and Protection Island for Rhinoceros Auklets—may be highly vulnerable. Fortunately, there are ready solutions. More than 10 years ago, Ed Melvin, a Marine Fisheries Specialist with Washington Sea Grant, worked with the non-tribal gillnet fishery in Puget Sound to develop and test nets specially modified to reduce

seabird bycatch. And the results were definitive: nets with a highly visible white nylon mesh panel sewn into the upper portion of the net caused a more than 75% reduction in seabird bycatch when fished during the day, and with no loss of salmon catch. Basically, murre and rhinos could see the net and veered away while salmon swimming near the surface chose to dive under the panel, and into the monofilament portion hanging below.

So why do fisheries wrecks still happen? Not all fishers use modified nets. Not all gillnet fishing happens during the day. And sometimes, even with these precautions, birds are still caught. During the 2008 season, Puget Sound was full of early migrants from failed coastal colonies, greatly increasing the chance that seabirds, salmon, and gillnets would come together. Which is one good reason that COASSTers like Rick are out there surveying. ■

Reported wrecks associated with fisheries are infrequent—just 12 in the last 39 years. Concentrations in space may be a 'wrong place, wrong time' interaction between birds and fisheries, as well as a likely concentration of winds, currents, and sandy beaches ready to 'grab and hold' incoming carcasses.



The COASST Quiz

A



S. Saporita

found 08/24/2007
 North Beach-St Paul
 (Bering Sea)
 Bill: 40 mm
 Wing: 23 cm
 Tarsus: 38 mm

B



C. Cwiklinski

found 12/05/2007 Bill: 34 cm
 Oceanside Wing: 56 cm
 (North Oregon) Tarsus: 85 mm

C



L. Bierma

found 08/30/2007
 Ocean Park South
 (South Coast, WA)
 Bill: 37 mm
 Wing: 38 cm
 Tarsus: 54mm

answers on next page

COASST at a Glance

- Number of beaches that have never reported a single dead bird—95
- Number of current volunteers—549; new volunteers this year—92
- Number of new species found this year—8
 Great Egret
 Least Auklet
 Least Sandpiper
 Long-tailed Duck
 Northwestern Crow
 Red-necked Phalarope
 Severe Macaw
 Steller's Jay
- Length of longest and shortest beaches surveyed
 Longest: 4.5km
 Strait: McCurdy Point
 Shortest: 0.1km
 Aleutian Islands: Petrel Cove
 Gulf of Alaska: Landing Cove Chowiet
 San Juan Islands: Doe Island, Rosario, West Obstruction
 Southeast Alaska: John Brown's Beach
- Smallest and largest birds ever found
 Smallest: Least Sandpiper
 Largest: Bald Eagle
- Number of US Fish and Wildlife Service banded birds found this year—5:
 1 Black-footed Albatross
 4 Brandt's Cormorants



Answers to the Quiz

A. Got murre? Looks like your average Common Murre—white-tipped secondaries, dark head, dark back, white breast—but what may at first look like a milk mustache is actually the defining feature of the Thick-billed Murre. B. That is one gigantic, unmistakable bill! Prominent throat pouch, huge body, dark head, white breast, and long broad wings can only lead us to one thing, an immature Brown Pelican. C. This bird is definitely a gull, but which one? The size, pale mantle, and black wing tips with white windows are good clues, but it's the ring on the bill that really gives this bird away... it's a Ring-billed Gull.

Project Profile: Ghost Busters

Fishing gear at the bottom of Puget Sound catches a lot more than fish. Just one net can yield hundreds of crabs and fish, several seabirds and even a marine mammal. How did it all get there? Over many years of sport and commercial fishing in Puget Sound, some gear is inevitably lost—the problem is that nets and pots on the sea floor continue ‘ghost fishing’ indiscriminately, damaging marine resources and impacting sustainability of the fishing industry.

“Derelict nets create these mini-ecosystems that continuously draw more organisms to feed on those stuck in or below the net,” says Tom Good, Research Biologist at NOAA Fisheries and collaborator with Natural Resources Consultants and the Northwest Straits Commission on the derelict gear project. “Seabirds, mostly cormorants, are inevitably caught in this chain, although after a few months of decay it can be hard to tell—that’s why the COASST guide is such an important resource.”

With a goal of locating, removing and disposing of the majority of the derelict gear in Puget Sound by 2012, the Northwest Straits Commission has partnered with recreational and commercial fishermen, tribes, and a host of state and federal agencies to involve all stakeholders in this win-win process. “The no fault reporting system allows anyone who has lost gear or finds gear to report it,” says Ginny Broadhurst, Director of the Northwest Straits Commission. To date, more than 972 nets have been removed by project divers.

More information regarding this and other projects can be found on our website: <http://depts.washington.edu/coasst/involved/learnmore.html> ■

The derelict gear project has removed more than 510 birds—like the loon pictured here—from abandoned nets found at the bottom of Puget Sound.



K. Antonellis



Species Profile: Pelagic Cormorant

Don't let the name fool you: Pelagic Cormorants aren't actually pelagic. Instead of braving the off-shore habitats frequented by fulmars and albatrosses, this species makes its home in nearshore waters from Alaska to Baja. Despite the misnomer, the Pelagic Cormorant is a truly marine species rarely found in freshwater rivers and lakes like its cousin the Double-crested Cormorant.

Unlike many seabirds, cormorants are easy to see from land. They have uniquely designed plumage that allows air to escape from between feathers during dives. This feature makes them less buoyant so they can reach incredible depths in pursuit of prey, but leaves them a soggy mess at the end of the dive. Along the outer coast Pelagics are often sighted perching on rocks or pilings 'hanging their wings out to dry' because structural differences in their feathers decreases their ability to repel water.

And speaking of diving, Pelagics are exceptional swimmers, reaching depths greater than 100 meters. Rather than flying under water using their wings for propulsion like murrelets or puffins, cormorants tuck their wings tightly to their sides and use their thick, muscular legs for power, splaying all four toes to maximize webbed area for steering.

With frequent appearances on the top 10 beached birds list, Pelagic Cormorants are familiar to many COASST participants. During the 2007–08 season, 68 turned up, mostly on the northern coasts of Washington and Oregon. There are about 400,000 Pelagics worldwide, all living in the North Pacific. Populations are not well-studied, but believed to be relatively stable, despite a negative reputation in some quarters.

Chasing fish has made cormorants, including Pelagics, a rather controversial group of seabirds. As fish-eaters, they are viewed by some people as competition and have been hazed, hunted, and had their nests destroyed in misplaced efforts to reduce their impact on local fish populations. As it turns out, Pelagic Cormorants mostly eat baitfish like sand lance and herring, as well as a smattering of marine worms and crustaceans.

During the breeding season, you can distinguish Pelagics from the larger Double-crested and Brandt's Cormorants by the two bright white butt patches. Cheeky males show off their nest territory and try to attract females by fluttering their dark wings over their white patches for a sexy strobe-light effect. Up close, the black plumage of the adults is strikingly iridescent with an unruly tuft of spiky feathers on the forehead and bare red skin around the base of the bill up to the eye. If you're lucky enough to visit or live in the vicinity of the Alaska Peninsula, Aleutian Islands, or Pribilof Islands, you may also see the Red-faced Cormorant. This less common species is difficult to distinguish from a Pelagic Cormorant, but is slightly larger and, as the name suggests, has more extensive bright red facial skin completely surrounding the eye, as well as a yellow bill.

Keep a lookout for beached Pelagic Cormorants during late summer, especially during the month of September, after young, inexperienced birds have left the nest and adult birds are exhausted from raising 3–4 hungry chicks. Better yet, spend some quality time watching these graceful, prehistoric-looking seabirds as they dive for fish along a shoreline near you! ■

COASST People

Volunteers

COASST volunteers, at the top of their game, nearly doubled volunteer hours from last year, thanks a great deal to daily survey teams at Cranberry Road North, Oregon Mile 286, Oregon Mile 327, Salmon River, South Butterclam, and Westhaven, . Together, daily participant hours make up more than 6% of the total time contributed to COASST this year.

Not surprisingly, Robert ‘Olli’ Ollikainen’s team on Oregon Mile 286, the self-proclaimed ‘bird brains,’ processed the most birds this year, 1742. Twenty people joined Olli over the course of this year for some hard-core winter surveys on the Oregon Coast. “Jon and Merrie Ziady went out this morning and did a survey during the height of the storm. Talk about taking one for the team!! The highest gust reported on Northwest Cable News was 80 mph in Cape Meares. Let’s join together and say, ‘attaway Ziadys!’”

Jon and Merrie weren’t the only people who got to experience wild weather. On their first survey ever, Julie Skopal and Brian Wilson got a little hail mixed in with the wind and rain. Their beach, Nye North, and 35 others joined the list of new COASST survey beaches in the North Pacific.

Some COASSTers, including Brian and Julie, end up logging in a bunch of hours even before they start their survey. Kudos to Tom and Connie Herzig, who travel the

longest of any COASSTers, 140 miles (one-way!) to visit their beaches near North Head Lighthouse every month.

Of course, being close-by does have its benefits: Vic and Sharon Nelson got out to survey their beach on the Kitsap Peninsula, Point No Point, 80 times this year, giving even the daily survey beaches a run for their money. Excluding those daily survey teams, Jim Todd and Carolyn Watts came in a close second this year with 55 surveys at Admiralty Inlet.

Someone has to look out for all those COASST beaches that don’t get the attention the Point No Point or Admiralty Inlet do—Ami Wright saw the most beaches this year, with Alaskan surveys at Spring Creek, Pedersen Peninsula, Northwestern Spit, South Bulldog Cove, Fourth of July South, North Verdant Cove, and Yalik Glacier.

Staff

A couple of COASST batons were passed off this year, as COASST waved goodbye to Barbara Blackie and Kate Litle.

Barb, who started working alongside Mary Sue Brancato at the Olympic Coast National Marine Sanctuary in 2000, successfully helped pull COASST through ‘the toddler years’ by bolstering scores of beaches in the Strait of Juan de Fuca and North Coast. Though Barb has moved away from COASST, she’s still nearby, teaching about the wonders of marine life at Peninsula College.

Kate transitioned into COASST way back when our mission statement proclaimed “a target of 35 monitored beaches in Washington State,” and took it upon herself to see that COASST achieved and exceeded this and many other goals. After her wedding on the shores of North Carolina, Kate headed off to England, and made sure to send back photos. Of what? Dead birds, of course—a European Oystercatcher, to be exact.

Mary Sue, with help from Volunteer Coordinator Janet Lamont, and OCNMS’ new Research Specialist John Barimo, tackled six trainings on the Olympic Peninsula. The team threw an incredible recognition event at The Cutting Garden, featuring an around-the-flower-garden bird facts scavenger hunt.

Whoa! Ruth Jenkins takes a moment before measuring the carapace of COASST’s first Green Sea Turtle found on northern Washington Coast.



J. Warrick

Meanwhile, Kate, Jane, Rebecca and Penelope drove (and flew!) around at break-neck speed to celebrate COASSTers at socials in Arcata, Cape Meares, Manzanita, Long Beach, Ocean Shores, Vashon Island, Seattle, Whidbey Island and Homer. In Long Beach, Troy Guy wowed the crowd with albatross photos from New Zealand. During the Ocean Shores event, COASSTer Brian Linnell admitted, “we started with live birds, but they were too hard, so now we’re here.”

After all that socializing, Rebecca shed her kitchen apron for an electronic datebook, spearheading organization of our daily survey teams and our ready and able team of UW undergraduate interns.

Penelope took off with Jane and Kate Henson, a graduate from the UW School of Education, to meet up with Dave Masterman’s high school science class for some beached birding in Ocean Shores. Graced with good weather, this bunch kept up the surveying until after the bell rang, “which was pretty impressive,” remarked Penelope, “it’s hard to show enthusiasm about school projects at that age.”

‘Jet-set Jane’ got a chance to see the last frontier this year, flying to trainings in Dutch Harbor, Kodiak and Homer, Alaska. Over pastries from the Two Sisters Bakery, Jane hung out with the Homer crowd, listening to Kyra and Neil Wagner talk about Neil’s trip up the frozen ALCAN highway in a Honda Insight.

As Director of the UW’s Program on the Environment, Julia’s in-box is really overflowing. But when she escaped from the office at the end of March, Julia met up with Sewardites for a training at the SeaLife Center. Presenting



J. Dolliver

Intern Liz Warfield nails this Common Murre identification at Roosevelt Beach, Washington.

COASST results kept her on the road: from a keynote at the Grays Harbor Shorebird Festival to a talk at the Alaska Marine Science Symposium to an evening on stage with weatherman Jeff Renner, as part of the Seattle Aquarium’s *Sound Conversations*.

Interns and Office Help

If volunteers are the gears that turn COASST, our undergraduate interns make sure those gears are well greased. This year, Penelope Chilton (now COASST staff), Herschel Cox, Michelle Manza, Jen Phipps, Sophie Pierzalowski, Michael Severtsen, Carolyn Shores, Elizabeth Smith, Juliana Stephan and Jerrmaine Treadwell collectively clocked in 1276 hours dotting their Is and crossing their Ts to make sure everything moved smoothly. From phone calls to data questions to volunteer packs, COASST interns assure the office looks more like a library than a dorm room.

Special thanks to Sophie and Jerrmaine for taking the COASST booth on its roadshow to the Beachcombers Fun Fair and the Penn Cove Water Festival. Also thanks to Herschel and Jen, who, in addition to office work, volunteered to take on monthly surveys at Alki Beach and Discovery Park to make sure Seattle area beaches got continued coverage. ■



J. Dolliver

Complete with two field essentials—boots and binoculars—Penelope fills in on a Marine View Drive survey.

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Carmela Alexander	19.2	2.0	17.6
Peter Alexander	25.1	6.0	19.6
Candace Allen	9.8	1.5	11.3
Kelly Ames	12.7	0.6	6.3
Rob Ames	12.7	0.6	6.3
AMNWR Seasonal Staff	46.4	0.0	30.6
Andy Anderson-Smith	1.0	0.3	0.5
Liam Antrim	2.8	4.0	2.0
Elizabeth Arch	25.0	12.0	20.4
Steve Arch	23.0	11.0	18.7
Mary Armstrong	1.5	1.0	1.5
Ken Arzarian	13.7	9.0	27.0
Steve Ash	0.6	0.1	1.0
Arthur Ayres	10.5	6.7	10.8
Bill Baccus	3.6	6.0	2.0
Linda Bainbridge	2.9	2.0	2.4
John Barimo	5.2	4.0	2.0
Sophie Barimo	5.2	4.0	2.0
Susan Barimo	5.2	4.0	2.0
Celia Bartram	1.6	4.5	6.0
Jim Bartram	1.6	4.5	6.0
Tracy Beals	1.8	4.5	1.9
Wendy Beeghley	4.0	3.0	2.0
Gail Beekers	2.5	2.0	1.6
Lynn Beekers	2.5	2.0	1.6
Chaleen Begin	5.2	6.0	3.2
Danielle Begin	25.0	30.0	16.0
Kyle Begin	2.5	3.0	1.6
Liz Berg	13.7	3.8	9.9
Pete Berg	3.8	0.8	2.2
Carol Bernthal	5.1	0.5	12.3
Melany Berry	12.7	14.0	28.0
Linda Bierma	25.8	6.7	31.2
Shauna Biermann	2.6	2.5	2.1
Dave Bilderback	70.5	30.5	43.9
Diane Bilderback	70.5	30.5	43.9
Diane Birsner	2.1	2.0	2.0
Barbara Blackie	36.4	24.2	13.4
Max Blair	19.2	2.0	12.0
Paul Blake	35.0	4.0	37.2
Alice Blandin	22.6	2.0	15.6
Bill Blandin	22.6	2.0	15.6
Bent Blichfeldt	15.6	4.2	5.0
Audrey Bohl	2.2	5.5	2.6
Heath Bohlmann	7.6	2.8	8.8
Louise Bollman	0.8	0.3	0.3
Lee Bowen	20.3	13.3	28.8
Jane Boyden	9.2	3.3	8.0
Mary Bozza	3.5	2.4	3.8
Ray Bradshaw	1.8	1.8	1.8
Mary Sue Brancato	56.3	44.3	24.1
Casey Brewer	2.1	0.9	4.0
Martha Briscoe	1.8	1.5	2.4
Stephen Brown	7.3	2.3	7.0
Janet Bruening	27.7	28.1	32.7
Kathy Budhead	2.4	0.0	5.1
Jeanne Budlong	8.8	0.0	7.0
Jim Budlong	6.8	0.0	5.6
Ryan Burner	2.3	9.3	1.3
Cindy Burns	29.4	12.0	20.4
Sarah Burns	3.0	1.0	1.7

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Sean Burns	5.4	2.0	3.4
Ken Burton	5.8	4.5	6.0
Gerry Busch	6.3	1.7	9.0
Lindsay Busch	6.3	1.7	9.0
Kathy Bush	25.0	2.5	15.0
Rick Bush	26.6	2.8	16.5
Coleman Byrnes	61.8	75.0	72.0
B. Byron	36.1	11.0	35.2
Barbara Campbell	19.2	4.3	19.5
Ken Campbell	11.3	8.3	4.2
Mary Campbell	11.3	8.3	4.2
Trice Caniglia	9.8	2.0	4.0
Anne Caples	25.7	10.0	17.0
Ann Carlson	9.4	9.0	7.2
Ricki Carlson	5.5	0.0	8.0
Dana Casey	4.8	4.5	2.4
Chris Cassidy	4.7	3.3	2.5
Joe Ceriani	38.6	20.0	24.0
Lee Chavez	3.1	3.0	5.6
Anne Chiller	6.0	1.0	6.6
Penelope Chilton	10.1	15.0	15.0
Judy Chovan	6.7	6.5	3.9
Sam Chovan	0.6	0.5	0.3
Joan Christy	19.2	2.0	12.0
Darrel Clark	3.0	0.8	2.1
Joan Clark	3.0	0.8	2.1
Susan Clark	37.3	9.3	42.7
Debra Clausen	14.3	1.7	32.0
Laura Clemmer	1.3	0.2	0.8
Margie Cochrane	5.7	1.3	6.4
Jane Comerford	20.7	3.0	28.8
Kathleen Confer	18.3	7.0	11.2
Steve Confer	18.3	7.0	11.2
Roger Contor	20.0	15.0	20.0
Susan Contor	20.0	15.0	20.0
Anne Cooper	15.1	17.0	34.0
Eileen Cooper	22.7	2.7	20.8
Henry Cooper	0.7	1.0	2.0
Karen Corbell	1.0	0.8	1.2
Liz Cosko	7.3	3.0	5.1
Deb Cox	2.6	1.0	1.2
Herschel Cox	5.9	8.0	9.6
Sharon Cox	11.9	10.5	16.8
Brenda Cunningham	1.3	0.8	1.0
Carol Cwiklinski	41.6	15.3	25.0
Debby Daily	2.0	1.5	2.0
Dave Daniels-Lee	14.7	2.3	8.4
Mary Daniels-Lee	14.7	2.3	8.4
Ed deCastro	1.0	0.2	0.9
Lucas DeCicco	1.4	0.8	2.0
Bill Dengler	21.2	13.5	5.4
Sandy Dengler	19.3	12.0	4.8
Kim Des Rochers	19.7	27.5	15.0
Susan Deyl	1.0	1.5	2.0
Michael Dick	1.1	0.5	1.7
Pam Dick	27.6	16.5	15.6
Lee Diemer	16.0	28.0	12.5
Paul Dinnel	14.6	8.0	26.4
Linda Doerflinger	16.4	6.7	8.0
Jane Dolliver	49.4	1.0	54.2
Robin Donnelly	15.0	16.0	9.6

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Ciel Downing	4.8	1.0	3.2
Brie Drummond	6.9	0.0	3.3
Sandy Dubpernell	30.0	18.0	61.2
Kathy East	6.8	2.5	10.0
Patrick East	2.8	1.0	4.0
Dave Easton	23.3	19.0	11.0
Dalene Edgar	50.9	7.3	25.2
Don Edgar	45.2	6.7	22.9
Ann Elliott	48.1	60.0	53.6
Nick Elliott	8.8	14.0	9.7
Monajo Ellsworth	7.2	2.0	6.4
Martha Ellul	22.9	0.0	28.8
John Emig	1.1	1.5	2.0
John Epler	12.2	13.5	48.6
Joyce Epler	11.3	12.8	45.9
Scotty Evans	2.5	0.0	2.0
Nadine Faith	0.8	0.7	0.5
Rebekka Federer	2.3	2.5	1.8
Shirly Fedora	12.6	9.0	7.2
Field Trip	46.3	0.0	27.6
Melissa Fielding	11.8	1.2	8.4
Mike Fielding	11.8	1.2	8.4
Sheila Fiepke	5.7	5.5	8.8
Sarah Fivgas	2.5	3.0	4.0
Sue Flensburg	1.2	0.0	1.0
Burton Foote	23.7	26.0	19.2
Rose Forbes	28.4	4.4	29.9
Ellie Friars	6.8	0.7	14.0
John Friars	10.1	1.0	20.0
Marilyn Friedrich	26.0	6.0	40.5
Ron Frisch	20.2	0.2	27.5
Jane Frost	10.4	6.0	9.6
Sue Gabriel	7.4	0.7	6.4
Varian Gacek	14.0	2.0	14.4
Rebecca Gamboa	1.7	4.0	1.6
Bob Garrigues	4.8	1.0	3.2
Carol Gatewood	13.5	5.5	22.0
Finn Gatewood	3.8	0.9	2.4
Katie Gavenus	1.3	1.5	1.0
Sharon Gearhart	43.4	45.8	27.5
Sue Gilleland	20.3	13.3	28.8
Margo Glenn	29.5	0.6	11.2
Tom Golding	22.9	2.9	22.7
Deidre Goodfriend	9.3	0.7	7.2
Linda Gorman	1.0	0.7	1.3
Marie Granshaw	8.3	3.8	12.0
Matt Gray	9.9	10.3	7.4
John Green	6.8	10.4	8.0
Margaret Green	6.8	10.4	8.0
Phil Green	10.0	0.0	9.6
Rhoda Green	16.7	12.0	24.0
Scott Gremel	9.7	12.0	5.0
Carol Griswold	7.8	3.5	7.6
Amy Groesbeck	1.1	1.5	1.6
Dick Groesbeck	13.0	16.5	17.6
Nona Groesbeck	9.7	12.0	12.8
Guest	145.0	112.0	93.9
Susan Guy	1.9	1.3	0.8
Troy Guy	1.9	1.3	0.8
Meg Hahr	15.6	19.0	29.5
Macy Hallin	3.2	0.7	3.2

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Kim Handley	3.0	0.3	0.6
Patti Happe	4.2	7.0	3.1
Sandy Harold	1.1	0.8	1.1
Scott Harris	7.4	14.0	2.8
Bea Harrison	23.5	9.0	13.5
Jim Harrison	22.0	8.0	12.0
Jon Harwood	3.5	4.0	4.0
Janice Havrilak	57.0	10.1	47.2
John Haxton	11.0	4.0	12.8
Clarence Hein	1.5	1.0	3.4
Jill Hein	32.3	19.0	64.6
Wendy Hensley	1.5	0.3	2.0
Maggy Herbelin	8.7	2.0	4.0
Connie Herzig	24.7	0.0	25.7
Tom Herzig	24.7	0.0	25.7
Jennifer Holland	3.4	3.0	4.0
Barb Holler	14.2	21.0	11.9
Karin Holser	16.8	0.0	18.9
Rayna Holtz	31.4	2.0	18.0
Beth Horton	3.5	0.0	2.0
Scott Horton	10.5	5.0	12.0
Alix Hugret	4.7	1.0	4.2
John Hunter	16.0	23.8	16.5
Nate Hunter	3.0	4.3	3.0
Pamela Hunter	14.5	21.7	15.0
Pattie Hutchins	20.3	5.0	10.0
Jeanne Iverson	15.0	12.0	4.8
JoAnn Jackson	14.0	2.0	14.4
Daniel Jenkins	1.9	7.0	2.0
Ellen Jenkins	4.0	0.7	4.4
Kyle Jenkins	1.9	7.0	2.0
Laurel Jenkins	1.9	7.0	2.0
Ruth Jenkins	24.0	66.0	22.0
Caroline Jezierski	3.4	4.8	3.0
Keith Johanson	17.0	6.0	19.2
Dick Johnson	13.6	1.8	22.0
Frank Johnson	20.3	0.9	17.6
Gary Johnson	5.7	1.0	8.0
Ingri Johnson	12.7	3.8	9.9
Mary Johnson	13.8	2.3	18.0
Scott Johnson	10.7	6.0	4.5
Bert Johnstone	44.8	8.7	41.6
Marilyn Jones	22.4	3.7	15.4
Ryan Kahlo	0.7	0.8	1.5
Mike Kail	12.2	8.3	11.0
Wil Kanavan	1.5	0.3	2.0
Mark Kansteiner	0.6	0.3	0.5
Marilyn Kastien	1.3	0.5	1.2
Sue Keilman	34.0	15.8	33.6
Conrad Kilmer	2.5	1.0	1.5
Phyllis Kind	23.6	6.5	23.9
Barb King	17.7	3.8	8.5
John King	17.7	3.8	8.5
Norma Klein	1.0	2.0	1.7
Valerie Knox	29.4	12.0	20.4
Gary Korb	13.1	4.0	4.8
Brad Krall	19.4	32.0	14.4
Tamara Krall	9.5	13.3	6.0
David Krichbaum	13.5	2.5	23.5
Diane Krichbaum	11.5	2.0	18.8
Christina Kriedeman	0.4	0.5	0.3

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Yvonne Kuperberg	31.4	2.0	18.0
Michele Kuter	10.6	12.3	6.6
Linda LaMay	9.1	1.3	17.6
Mac LaMay	11.1	1.7	22.0
Janet Lamont	6.2	7.5	3.8
Jim Lamont	6.2	7.5	3.8
Barbara Landi	4.2	2.0	6.0
Heather Lapin	0.4	1.0	1.0
Audrey Lara	17.1	4.0	12.8
Frank Lara	14.9	3.5	11.2
Dorothy Lavalle	1.0	1.5	2.0
Jacqueline Laverdure	5.9	4.0	2.0
Don Leak	4.9	1.3	3.2
Joyce Leak	6.3	2.0	4.4
Mary Lou Letsom	29.4	12.0	20.4
Bev Leyman	5.7	22.5	3.5
Larry Leyman	8.0	30.0	6.0
JoAnn Lincoln	23.3	24.0	16.0
Rich Lincoln	10.3	12.0	8.0
Brian Linnell	26.2	42.5	8.8
Kathy Linnell	26.2	42.5	8.8
Peter Linton	39.2	42.5	38.0
Rodney Lipman	18.5	6.5	16.0
Tina Lipman	36.4	22.8	25.4
Sky Lloyd	32.0	3.8	29.9
Camilla Loyd	10.5	1.3	8.0
David Loyd	7.4	1.3	8.0
Julia Loyd	53.8	7.3	44.0
Nicole Luce	2.4	2.3	4.2
Anna Lucero	2.5	1.3	4.8
Jann Luesse	44.8	9.0	28.8
Sanny Lustig	8.6	8.5	4.7
Pat MacRobbie	19.3	36.0	22.8
Stuart MacRobbie	22.1	41.0	25.2
Rus Maddox	1.6	1.0	3.0
Sunny Mally	1.8	0.5	1.6
Charlotte Maloney	13.4	21.0	11.9
Jim Maloney	13.4	21.0	11.9
Tim Manns	3.8	0.0	3.0
Vicki Mansfield	33.6	8.0	54.0
Dave Manson	5.5	4.0	2.0
John Markham	1.3	0.0	1.6
Jane Marks	19.9	3.3	14.0
Judy Marlow	4.8	16.0	1.9
Ken Marlow	4.8	16.0	1.9
Jane Marsh	2.3	0.0	1.4
Jennifer Marsh	3.3	1.0	6.8
Jerry Marsh	12.4	4.0	12.0
John Marsh	2.0	0.5	1.7
Julie Marsh	1.8	0.5	1.7
Mary Marsh	16.0	4.5	15.3
Dave Marshall	0.9	1.5	2.0
Debbie Marshall	16.4	3.2	7.2
David Masterman	5.2	2.3	3.0
Lisa Matlock	6.9	6.0	6.0
Barb Matter	3.0	1.5	3.2
Lee Mayhan	7.6	2.7	5.2
Kate McClain	14.8	2.9	6.8
Pat McClintick	18.8	3.3	12.8
Russ McClintick	40.2	7.7	29.6
Rusty McClintick	2.7	0.5	2.0

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Mo McClintock	1.2	0.0	1.3
Kenny McCoy	34.2	12.3	34.4
Judith McDougall	11.8	1.2	8.4
Gary McDowell	11.9	1.8	22.0
Mary McDowell	11.9	1.8	22.0
Debra McElroy	1.0	0.5	1.2
B. McFarland	2.3	2.5	1.8
Vicki McNeil	14.6	8.0	26.4
Jim Medlen	3.0	3.5	6.6
Athena Mercurief	2.1	0.9	4.0
Louise Merkens	4.3	5.0	2.0
Mark Merkens	4.3	5.0	2.0
Sharon Metcalf	3.3	1.0	6.6
Vanessa Metz	5.5	1.5	3.0
Michelle Michaud	2.1	2.2	1.0
Marilyn Miller	1.5	2.3	0.6
Kari Monn	1.5	1.0	1.5
Greta Montagne	3.0	1.0	1.9
Gary Montesano	4.5	1.7	5.0
Bonnie Montoya	2.0	0.0	1.0
Dianna Moore	41.8	4.2	26.5
Anne Morgan	2.8	0.7	2.0
Deborah Moriarty	6.0	8.0	3.6
Eric Morrison	5.6	1.0	0.8
Elizabeth Moundalexis	1.0	0.2	0.9
Cindy Moyer	23.4	22.5	30.0
Jim Mraz	8.0	2.5	6.0
Patricia Muchmore	12.6	16.7	10.0
Bree Murphy	8.6	13.5	9.0
Carolyn Murphy	11.9	4.3	26.0
Susan Murphy	15.2	3.3	14.0
Ann Musche	1.0	2.5	1.0
Lorre Myers	9.9	18.0	7.2
Johathan Nations	1.5	1.5	0.8
Sue Nattinger	116.4	141.2	139.1
Bonnie Neitzke	3.0	1.0	2.4
Isabelle Nelson	8.7	1.5	6.9
Joanne Nelson	2.8	1.5	2.0
Pete Nelson	23.7	3.5	13.5
Sam Nelson	4.3	0.5	2.3
Sharon Nelson	32.8	0.0	49.5
Ursula Nelson	4.3	0.5	2.3
Vic Nelson	77.1	0.0	117.0
Steve Ness	7.0	0.2	6.0
Norbert Neumann	5.5	1.3	2.6
Wade Newbegin	17.3	1.5	14.4
Nancy Newman	19.3	8.3	17.6
Darlene Nichols	2.9	16.5	1.1
Gavin Nickerson	6.3	0.5	3.0
Griffin Nickerson	1.5	0.2	1.0
Kathleen Nickerson	16.8	1.5	9.0
Gus Ninneman	2.5	7.0	1.8
Kathleen Ninneman	2.5	7.0	1.8
Rod Norvell	5.2	4.0	2.0
Erin O'Brien	1.0	0.1	1.0
Charles O'Clair	4.6	16.0	3.3
Janet Oja	19.6	26.3	27.2
Stephanie Oliveira	20.8	8.7	15.6
Kelley Oliver	13.8	18.0	7.2
Carolyn Ollikainen	45.7	13.0	41.6
Robert Ollikainen	110.1	31.5	100.8

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Jon Olsen	1.8	1.0	3.0
Oregon Coast Aquarium	5.0	0.5	4.8
Connie Owston	10.1	2.5	8.0
Pete Owston	20.1	6.0	19.2
Andy Palmer	5.7	0.8	9.8
Bill Palmer	2.9	2.0	1.6
Autumn Palumbo	3.9	1.7	2.2
Aaron Parker	9.6	8.0	4.0
Paul Parker	25.7	8.0	16.5
Sally Parker	25.7	8.0	16.5
Doug Parkinson	11.1	4.0	7.3
Julia Parrish	3.1	0.0	1.2
Michelle Patterson	2.7	0.7	1.6
Mike Patterson	43.9	20.7	49.6
Barbara Patton	45.2	10.7	38.4
Mike Patton	44.9	10.7	38.4
Barbra Paul	2.0	1.0	3.2
Joelle Pebbles	5.0	0.6	1.2
Sheila Pera	15.0	3.3	14.0
Mollie Peters	4.0	0.5	4.8
Ken Phillips	3.0	2.8	1.7
Kris Phillips	4.1	5.5	3.4
Jen Phipps	3.3	3.0	4.8
Bill Poppe	12.0	33.0	17.6
Jolene Poppe	9.9	21.0	11.2
Bob Poulin	6.8	0.0	14.0
Jean Poulin	6.8	0.0	14.0
George Power	39.3	8.7	35.6
Rose Power	40.5	9.0	37.4
Jill Prewitt	0.7	0.2	1.0
Jaci Pumphrey	5.3	3.0	2.7
Jeanne Pumphrey	11.9	10.5	16.8
Janet Raffensperger	3.0	0.3	3.2
Paul Raffensperger	12.0	1.2	11.2
Rob Rance	2.3	1.3	4.0
Daniel Ravenel	3.1	1.3	3.6
Dick Reese	5.5	4.0	2.8
Peggy Reeve	3.5	0.3	4.0
Renee Rensmeyer	5.0	0.5	4.8
Patrick Reynolds	31.3	60.0	24.0
Vincent Reynolds	3.3	0.5	1.6
Ken Richardson	4.3	1.2	2.6
Rich Ridenhour	8.4	5.8	7.0
Ginger Ridgway	5.0	5.0	1.5
William Ritchie	33.5	48.0	19.2
Jim Roberts	33.7	97.0	12.8
Jo Ann Roberts	32.4	90.5	12.1
Betsy Robins	9.5	3.5	4.9
Holly Robinson	7.4	0.6	22.4
Moria Robinson	2.5	0.2	6.4
Luke Rogers	1.2	0.5	1.6
Ru Rorabaugh	6.3	7.3	2.1
Mark Russell	4.8	9.0	6.0
Mary Russell	4.8	9.0	6.0
Jessica Ryan	8.0	2.6	9.8
Slade Sapora	14.2	13.8	20.0
Cheri Scalf	4.0	2.0	1.4
Lisa Scharf	10.3	0.0	20.7
Will Schlein	12.1	2.5	12.0
Dave Schmalz	2.1	2.0	2.0
Pat Schoen	2.8	9.5	5.1

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Laurel Schoenbohm	2.7	2.3	7.0
Michael Schrimpf	4.4	0.0	3.2
Bette Seaman	6.2	0.7	6.4
Sue Shane	3.5	1.0	2.4
Lisa Guy	1.0	1.3	0.8
Ginny Sickles	6.1	2.5	10.0
Sasha Sicks	4.0	4.7	8.8
Nan Simpson	4.7	3.3	2.5
Lori Sinnen	30.0	56.0	22.4
Sandy Skeba	0.3	1.8	0.3
John Skinner	2.0	7.3	1.2
Julie Skopal	4.0	6.0	2.9
Mark Smaalders	9.5	11.0	6.0
Steve Small	22.2	4.8	8.6
Elizabeth Smith	4.3	0.4	7.0
Jill Smith	0.8	0.7	0.5
Jim Smith	7.7	0.7	11.2
Jo Smith	3.9	4.0	1.8
Max Smith	35.1	90.0	38.4
Randy Smith	5.7	1.7	11.0
Richard Smith	33.2	15.2	32.5
Trina Smith	4.7	9.0	5.1
Linda Songer	5.7	6.0	6.0
Kristine Sowl	29.2	25.2	28.6
Art Sowls	0.5	0.0	0.9
Rick Spaulding	8.3	2.5	6.6
Peggy Speer	35.3	7.0	33.6
Caroline Spehar	21.5	27.0	8.8
Jane Spence	1.7	0.5	1.6
Ann Spiers	3.9	1.0	3.5
Gayla Spratt-Nuffer	21.7	41.0	22.4
John St.Marie	1.6	1.5	2.0
Al Standish	14.1	11.0	22.0
Ann Stark	2.5	1.0	4.2
Doug Stark	10.7	4.5	18.9
Latresha Starling	75.2	3.1	53.8
Sumer Starling	75.2	3.1	53.8
Bob Stavers	0.5	0.5	0.3
Arlene Stebbins	13.4	4.5	14.4
Pete Steen	8.0	2.5	8.0
Wendy Steffensen	1.6	0.0	2.4
Jesse Stewart	13.6	1.8	22.0
Iris Stober	5.5	1.3	7.2
Linda Story	7.0	4.0	6.0
Martin Strand	1.8	0.3	0.6
Eftin Strong	11.3	24.0	11.4
Ingrid Strong	11.3	24.0	11.4
Laurie Stuart	3.3	1.0	3.0
Kim Sundberg	7.8	0.8	16.0
Sarah Swanson	35.1	90.0	38.4
Chris Szymoniak	8.6	1.0	9.6
Richard Taff	0.7	0.5	1.0
Greg Thomson	15.6	14.5	22.0
Dan Thorington	48.0	33.0	86.4
William Tiederman	2.5	6.7	3.0
Debbie Tobin	0.5	0.3	1.0
Bob Toby	14.2	5.3	14.4
Marcia Toby	14.2	5.3	14.4
Jim Todd	16.3	27.8	35.0
Floyd Tomkins	7.5	3.0	9.0
Jim Towell	1.7	0.5	1.6

VOLUNTEER *	SURVEY HRS	TRAVEL HRS	KM
Tanya Treat	1.0	0.1	1.0
Judy Trieber	6.7	2.8	3.3
Darin Trobaugh	1.4	6.0	0.9
Rochelle Trochtenberg	7.5	1.5	3.0
Jennifer Trump	1.5	0.1	1.0
Kelley Turner	7.6	2.8	8.8
Lars Turner	3.3	6.0	4.0
Alan Unmack	7.4	1.3	1.4
Anneka van Doorninck	33.8	0.0	48.0
Wolter van Doorninck	74.5	0.0	110.4
Carol Vander Meer	1.0	1.0	0.8
Chet Vincent	13.0	10.0	15.0
Zackrie Vinczen	7.6	7.5	6.0
Carol Volk	12.0	3.7	4.4
Frank Vondersaar	5.1	1.7	6.0
Neil Wagner	4.0	1.0	3.6
Stan Wagner	20.9	7.2	20.7
Darlene Wahl	13.7	9.0	27.0
Steve Warner	34.5	75.0	40.0
Hank Warren	20.0	15.0	20.0
Raedell Warren	22.0	16.5	22.0
John Warrick	24.0	77.0	22.0
Greg Waters	1.6	0.0	1.6
Carolyn Watts	27.5	8.3	25.0
Dick Weisbrod	2.5	6.7	3.0
Jon Wendt	1.0	1.0	1.7
Don Wester	9.0	14.2	8.5
Linda Wester	7.6	13.3	6.8
Don Wheeler	57.2	8.0	13.2
Grace Wheeler	57.2	8.0	13.2
Fred White	2.8	0.5	1.6
Christina Whiting	14.0	4.4	15.0
Suzy Whittey	1.0	2.5	1.0
Carolyn Wilcox	10.7	10.0	5.5
Don Wilkin	11.1	4.0	13.6
Daniel Williams	3.0	0.1	2.4
Wendy Williams	27.2	14.7	12.8
Brian Wilson	4.0	6.0	2.9
Nora Winge	1.0	1.0	0.8
Pam Winstanley	6.5	1.0	8.0
Peter Witschi	18.6	16.5	13.2
Beth Wolgemuth	7.7	1.0	3.8
Kathleen Wolgemuth	33.1	4.1	15.6
Christine Wood	2.9	1.3	2.5
Jeff Wood	1.6	0.7	1.3
Carrie Wooten	2.5	0.8	1.6
Ami Wright	18.7	12.7	14.8
Jen Wright	0.7	0.3	0.8
R.W. Wright	0.3	0.7	0.3
Randy York	8.9	1.5	18.0
Pat Young	6.5	4.0	13.6
Axel Yount	10.2	12.5	17.5
Darrell Yount	0.8	4.5	1.5
Jan Yount	7.3	31.0	10.6
KiaOra Zeleny	8.3	3.8	12.0
Jon Ziady	30.1	7.0	22.4
Merrie Ziady	26.9	6.5	20.8
Arlene Zornes	2.8	1.0	2.4
TOTALS	7308	4448	6787

* Volunteer effort June 2007 - May 2008

Volunteer Spotlight

Grace and Don—Humboldt

If there were ever a COASST Olympics, Grace and Don would've won gold their first year of competition. Right out of the starting block, they set to processing 51 birds in one survey. "After a while," Grace remarked, "all the murre carcasses started to look alike—good thing we tag them!" As for their live bird records?—"Don and I have yet to see a live murre in Humboldt County, at least that we know of."

But no matter, Don and Grace are all about science (and citizen science). Don currently works as a radiologist, with Grace as co-pilot to the practice, which is to say, as Grace adds, "I boss Don around." Grace, a former instructor at Fresno City College and West Hills Community College, received her PhD in insect physiology from UCLA—cockroaches anyone?

For both, COASST is a way to get out of the office and into the field, "and it's a real treat that we get to do it together." But what about some of those yucky winter days when work in the lab sounds a whole lot more appealing? "We really believe in citizen science—that anyone, regardless of background can participate. Not only are we gathering valuable data that can be used by scientists, we may be having an impact on peoples' thinking about conservation of the oceans."

Though Grace doesn't share Don's love of WWII era planes, "I prefer to stay on the ground," and Don wouldn't be caught dead gardening (he doesn't like



getting dirty), they function like a well-oiled machine in the field. “We complement each other nicely—I’m pretty good at handling biological specimens (I’m the designated measurer) and Don (the techno-geek) is the photographer.” Of course, no team is complete without a little rivalry. Even though Don refers to Grace as “the powerhouse behind the team,” Grace admits, they can get pretty competitive, as “Don has the bragging rights to about 2/3 of the birds on any given survey.” Sounds like a match just made for COASST surveying.

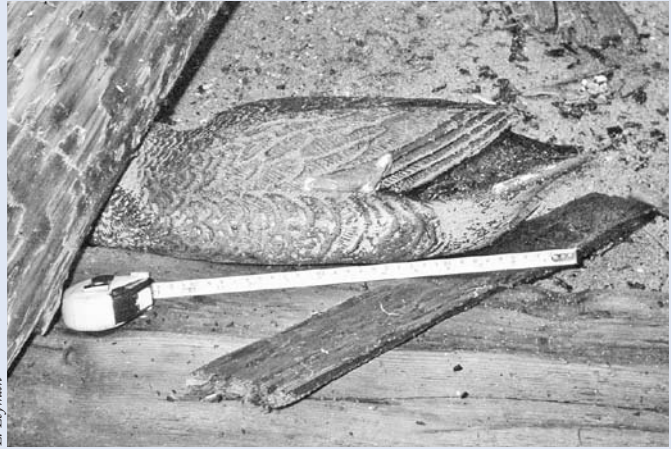
Larry and Bev—San Juans

If cars had an autopilot setting like airplanes, Larry and Bev’s would take them straight to the beach. Spring, summer, fall, winter, nine years and over 250 surveys without birds has yet to stop the Leymans from heading out to visit their three pocket beaches in the San Juans—South Obstruction, West Obstruction and Westsound—like clockwork at the beginning of each month. Lest you think they never go on vacation for fear of breaking their perfect survey streak, they don’t have reason to travel far—living on Orcas is a vacation: “We enjoy seeing seasonal changes in the landscape and especially look forward to purple blooms of the calypso orchids (aka fairy slippers) in April.”

A far cry from their former home in southern California, island life has allowed for time to tend to a bountiful vegetable garden and to pursue their shared passion for music—Larry plays cello in the Islands Sinfonia and Bev sings with the Orcas A Capella Singers. “When we first joined COASST we thought it would be fun to volunteer for an activity that would get us to the beach and allow us to learn more about birds—we look forward to the monthly treks.”

Larry and Bev are all about lifelong learning. After almost 30 years in education—Larry, an oceanography teacher at Fullerton College, and Bev, an elementary school teacher, help out at the local library, and have even tried their hand at acting, with Bev taking the lead to produce

*left: No, they’re **not** in their COASST gear...
Grace & Don Wheeler enjoy the sun on
South Spit in between surveys.*



L. Leyman

With a keen sense of humor, Larry and Bev Leyman sent us this photo, with a note, “for the experts! Identify the bird in this photo.” (a mallard, decoy)

and direct a number of plays. As stewards of the land and resources of Orcas Island, Bev serves on the board of the local community land trust and both speak fervently in support of citizen involvement. “Volunteering for COASST forces us to visit places and track changes we’d miss if we weren’t out there—we’re helping to establish baseline data that shows our beaches are pristine and that seabird deaths in the San Juans are rare.” Even if Larry and Bev don’t have birds to find, there’s always something interesting out there, “a baby octopus, or bunch of jellyfish, or a driftwood sculpture,” which make their trips worthwhile. ■

Bev and Larry take a break with their granddaughter Jane.



Courtesy of B. Leyman

Partner Profile: NOAA Fisheries

COASST data help us assess changes in ocean conditions, which affect fish, seabirds and people.

When most people think about the National Oceanographic and Atmospheric Administration, or NOAA (if they do at all), they think about the weather. But NOAA is also the federal agency that houses the National Marine Fisheries Service—those scientists and managers who keep tabs on the health of our marine fish populations, including salmon, rockfish, lingcod, and black cod along the Pacific Coast. What does that have to do with COASST? Plenty, as it turns out.

To a seabird like an albatross, longline and trawl fishing vessels dotting the coastal shelf waters of California, Oregon and Washington might as well have big neon signs saying ‘Eat Here!’ That’s because albatross and their tubenose cousins have an exquisite sense of

smell, and can sense an irresistible odor plume of fish guts and oil from miles away. And once they’re diving behind the vessel, it’s easy to get caught by a hook or winged by a cable. To a seabird like a murre, gillnet and purse-seine fishing vessels in nearshore waters can form a veil of death, catching the unwary divers as they pursue bait fishes like herring, sandlance and smelt.

Finding out who gets caught—besides the fish—is the job of the Observer Program. And figuring out what can be done to minimize the risk fishing poses to seabirds is just one of the many questions Liz Clarke and her observer team ask. A long-time supporter of COASST, Liz is the Director of the Fishery Resource Analysis and Monitoring Division at the Northwest Fishery Science Center, the National Marine Fisheries Service laboratory in Seattle that conducts research in marine waters from the Canadian border south to the Mexican border. Most of the time Liz is dealing with fish—How many are there? How healthy are the populations? How many can we sustainably fish? But a portion of her job is also worrying about the ecosystem. Seabirds, and fishery bycatch, are part of that equation.

And COASST data can provide crucial pieces of information, beyond what an observer might see on-board. “It’s not just bycatch—most seabird mortality comes down to too little or low-quality food, maybe forced by changes in ocean circulation or upwelling.”

One of Liz’s many projects is to link data—from maps of the bottom contours of the ocean to water temperature to fish catch to seabirds—together to form a more comprehensive picture of coastal ocean health. And so she turned to COASST to help in this effort. “With hundreds of monitoring sites along the outer coast and high-quality data coming in monthly, COASST can tell us how the seabirds are responding to ocean changes right now. And these are data that we will need to make ecosystem-based fishery management decisions.” ■



Courtesy of L. Clarke

Liz Clarke readies supplies for a ‘flock’ of new West Coast Groundfish Observers.

COASST Funding

Many hands have helped expand and maintain over 300 COASST sites from the Bering Sea to Humboldt Bay. As the program continues to reach out to more and more communities, our funding follows suit. COASST's annual budget now approaches \$200,000, which is matched more than dollar for dollar by volunteer time (\$230,000 as valued by the Independent Sector).

Foundations took the lead this year, supporting work on the *Beached Birds-Alaska* COASST guide, and the daily survey project centered around the Columbia River.

Agencies followed suit with funding for carcass collection as part of the Avian Flu Surveillance Network, and COASST's continuing expansion into the great white north of Alaska.

And to keep all those projects running, we owe thanks to in-kind donations of personnel time to support the salaries of Julia Parrish, Executive Director; Mary Sue Brancato, Volunteer Coordinator; and the seasonal field crew of the Aleutian Islands National Wildlife Refuge.

Sponsors, large and small, all contribute to COASST's success. If you value COASST's collaboration between scientists and coastal communities, please consider making a donation at: <http://depts.washington.edu/coasst/involved/giving.html>

Sponsors

COASST would like to thank the following sponsors, who provided operating funds, support for special projects, and in-kind donations during 2007–2008:

Operational Support

- Grays Harbor Shorebird Festival
- NOAA Fisheries
- UW Program on the Environment

Special Projects

- North Pacific Research Board
- Washington Department of Fish and Wildlife
- World Wildlife Fund
- National Fish and Wildlife Foundation

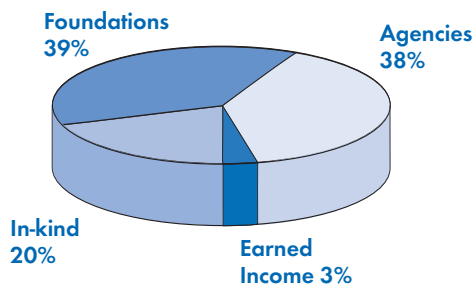
In-Kind Support

- Alaska Maritime National Wildlife Refuge
- Cable Markers Co., Inc.
- Olympic Coast National Marine Sanctuary
- UW School of Aquatic & Fishery Sciences

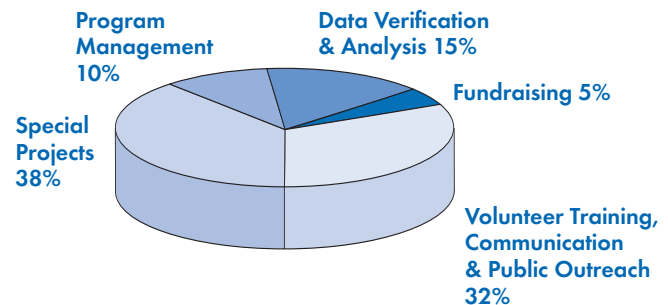
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June 2007–May 2008

FUNDING SOURCES



EXPENSES





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COASST Mission

The Coastal Observation and Seabird Survey Team (COASST) is a citizen science project focused on the coastal areas of the North Pacific. COASST believes citizens of coastal communities are essential scientific partners in monitoring marine ecosystem health. By collaborating with citizens, natural resource management agencies and environmental organizations, COASST works to translate long-term monitoring into effective marine conservation solutions.



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