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COASTAL OBSERVATION AND SEABIRD SURVEY TEAM

Reports 01-02

Breaking News

Yeowser! This was COASST's year of expansion: more volunteers, more beaches, and more birds. We've expanded into Oregon, we're expanding into Puget Sound, and we've got a solid core of over 125 dedicated volunteers. Collectively over 745 surveys, COASST found 717 birds of 53 species this year (July 2001 through June 2002). Since COASST volunteers first hit the beaches in December 1999, we've collected information on 59 species and 1329 carcasses. Our latest year's numbers make COASST the largest beached bird program in the world! Here are a few highlights from our six regions.

Oregon

Following the departure of our Newport seabird colony crew in July 2001, Phillip Johnson of CoastWatch helped us recruit 15 volunteers to survey 6 new beaches in Oregon – and we will add even more this fall. Thanks Phillip! This extends COASST's southernmost coverage to Florence (Oregon Mile 166) and brings us to within kilometers of the hundreds of thousands of murre nesting in Oregon.

Oregon beaches added some surprises to the COASST species tally. Sharon Enga and Alan Amundsen found our first black scoter on Mile 166 in November. A Clark's grebe – well described by Maxine Centala and Jan Christensen – was found on Agate Beach in January. Also in January, Sue Gabriel and Jane Boyden found an ancient murrelet on Mile 254. A subadult glaucous gull and an adult greater white-fronted goose were recorded on Mile 300 by Mollie Peters in March and May, respectively.

Despite the tremendous abundance of live seabirds along Oregon's coast, you'll notice that the state's overall beaching rates are fairly equivalent to those of the Washington outer coast. Are Oregon birds dispersing north into Washington waters? This is a pattern we'll be paying attention to as COASST surveys continue.

South Coast

With monthly deposition rates hovering at (or above) one bird per kilometer, COASST surveys kept our South Coast volunteers very busy again this year. Altogether, 408 birds were found.

South COASSTers found the smallest and the largest species. In January, Walter and Elone Weed found a red



Oregon COASSTers hit the beaches in the Fall, during a highly successful session with Todd Hass.

August 2002

phalarope and a Western sandpiper on South Taurus. Dianna Moore and Kathleen Wolgemuth found a second red phalarope on North Jetty. Like last year, a fair number of black-footed albatross appeared on COASST surveys. The immature found in August by Susan Clark and Stevie Leek was banded by the US Fish and Wildlife Service as a chick on Midway in June of 1998.

The University of Washington Marine Biology class field trip led by Julia Parrish with capable assistance from Todd Hass, Colin French, and Nathalie Hamel found a juvenile Western gull with aluminum bands on South Taurus in October. Long-distance dispersal explains its appearance here, as it was banded in California by Point Reyes Bird Observatory personnel (over 700 miles away) earlier in the summer. If California is considered long-distance dispersal, how do we classify our albatross from Hawaii?!

Four of the five oiled birds found by COASSTers this year were in the South Coast Region. Carolyn Stone and Susan Clark found an oiled Western grebe on Ocean Park South in January. Two murres and a rhinoceros auklet were found oiled on North Jetty by Kathleen Wolgemuth and Dianna Moore. No associated spill has been identified.



The most unusual bird found in the South Coast region this year was an ‘uncommon’ murre. Yes—that’s right—an *albino* common murre from South Butter Clam was photographed and salvaged in October during the Marine Biology class field trip. It now resides in the Burke Museum of Natural History in Seattle. Albino specimens are truly rare; of the tens of thousands of common murres that Julia has seen on colonies, only one has been a “white” murre!

North Coast

Fifteen beaches are now being surveyed in this most remote section of the Washington outer coast. Unlike most of our other regions, volunteers must drive (sometimes hours) to the site access point, then hike into the beach, *then* survey it. Although COASST only adds up hours posted during surveys, this massive additional transportation time clearly puts North Coast volunteers in the lead of time devoted to the program! Fortunately for us, most of these volunteers describe themselves as devoted naturalists and birders at heart who relish the opportunity to get out and observe. It was difficult to tell Gay Hunter that she couldn’t do ALL the beaches every month!

All sorts of interesting birds washed up on North Coast shores this year. Patti Happe and Bill Baccus found our first pigeon guillemot last September on Sand Point South. Also in September, Chip McBride and Lillian Johnston found a federally endangered brown pelican at Hogsback. And speaking of endangered, Barbara Blackie

Among the 79 birds of 19 different species found by Julia Parrish’s UW Marine Biology class along the South Coast beaches in October was this extremely rare albino common murre. Note the pale beak, feet, and upper parts.

found two marbled murrelets on Hobuck Beach: one in February with Judy D'Amore and the second in April with Wilma Sale.

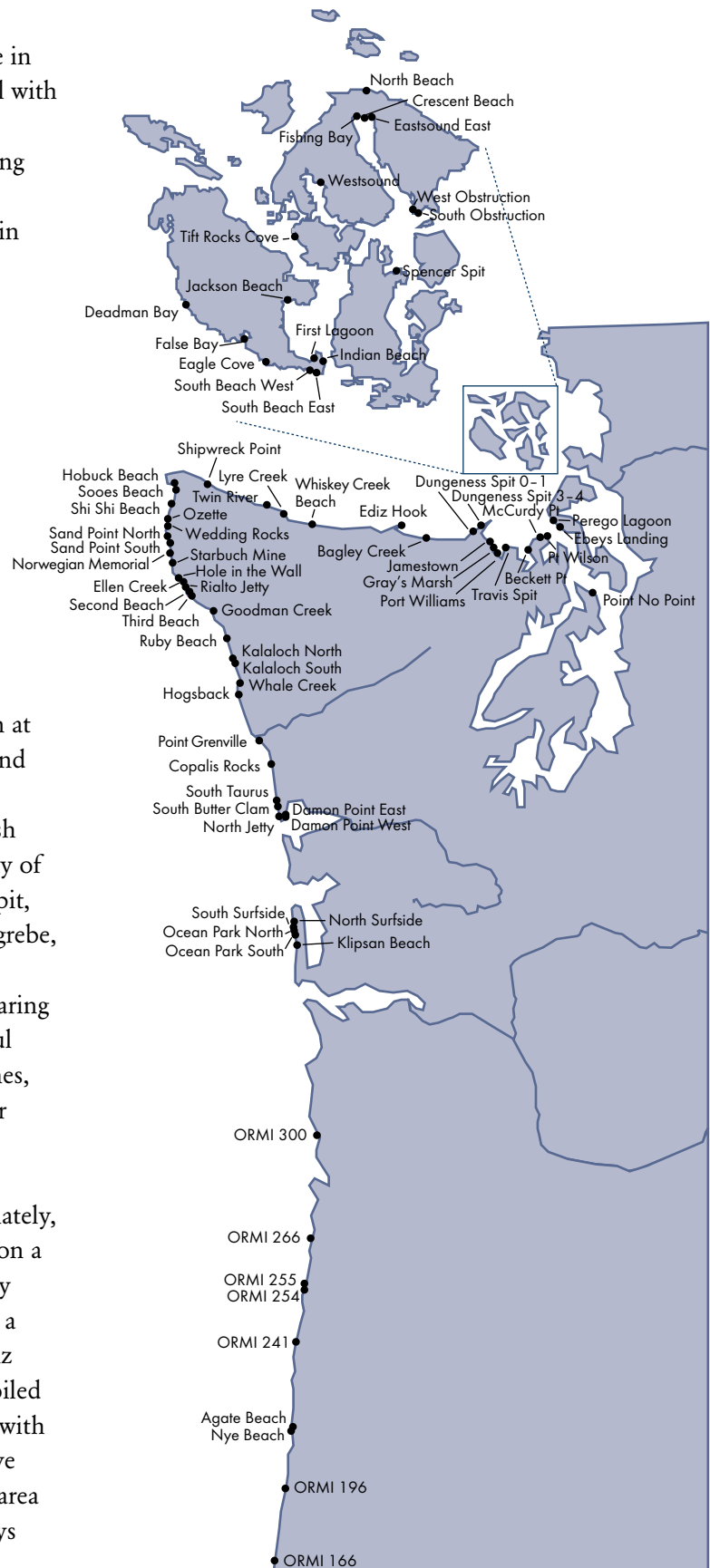
Beached birds were not the only organisms washing up. Intrepid seasonal ranger Susie Kendig found the carcass of a sea otter while surveying Starbuck Mine in Olympic National Park. The find was immediately reported to the Olympic Coast National Marine Sanctuary; Susie even offered to bring back tissue specimens. Now that's dedication!

Strait of Juan de Fuca

COASST is expanding in both directions along the Strait of Juan de Fuca with new sites popping up both in the east near Port Townsend and also to the west beyond Seiku. Five new beaches were established following a very successful January 2002 training session cosponsored by the Port Townsend Marine Science Center.

Stuart and Pat MacRobbie found a common loon at Gray's Marsh in January. In April, Nancy Newman and Carrie Wooten found a marbled murrelet at Beckett Point, and a bald eagle was discovered by Mary Marsh and Pam Dick at Dungeness Spit. The largest diversity of species was found by Rick and Katy Bush at Travis Spit, including several gulls, a common loon, red-necked grebe, surf scoter, and rhinoceros auklet.

In this region, survey coverage has been about sharing beaches and covering for each other. When Josey Paul needed to focus on several important writing deadlines, Linda May was able to take over beautiful Twin River beach, just west of Joyce. At Ediz Hook, COASST volunteers Donn and Mary Dancer needed to take a break while Donn recovers from foot surgery. Fortunately, new volunteer Beth Bierman has been able to fill in on a temporary basis. The importance of survey continuity became evident this past May when an oil spill from a refueling accident in Port Angeles harbor left the Ediz Hook beach heavily oiled in places. Fortunately no oiled birds have been found. We can make that statement with more confidence knowing that COASST surveys have been conducted continuously for 10 months in this area by dedicated COASST volunteers. Keep those surveys going!





This breeding plumaged ancient murrelet was found on Perego Lagoon. Two-thirds of the world's population of this species nest in the Queen Charlotte Islands in northern British Columbia.

San Juans Islands

What can we say...? These volunteers are troopers. Despite lots of searching, very few birds are found on this region's beaches. On average, a volunteer can expect one bird per beach per year. But averages can be deceiving, some volunteers are on their third year without finding a single bird. Remember, documenting those zeros *is* important, and when you do see something it's likely to be very meaningful! San Juan waters are a meeting point for pleasure boating and shipping alike, from kayaks to oil tankers. As use of the marine environment increases, COASST surveys will tell us how marine birds use this region, and help us document the effects of human activities on these species.

On that note, consider the finding of a Bald Eagle—a federally threatened species under the Endangered Species Act—on Fox Point by Wilma Sale and Edi Leonard in May. Derek and Robyn Lowe found (and refound) just one bird this year, but it was a glaucous-winged gull that had a hook in its beak and fishing line wrapped around its wing and leg.

Mike Kaill and his partners didn't find any birds, but

encountered the widest assortment of beached mammals for any COASST site. Among the discoveries were three harbor seals, a river otter, and a feral cat. Mike also noted mink tracks on two occasions, and was even chased off his beach by a vicious dog on one survey!

The handful of other birds found in the San Juans included two Canada geese found by Jill McKay on Fishing Bay, Orcas Island, and Colleen Engelhard and Ken Arzarian on South Beach East, San Juan Island, respectively. Judy Chovan and Ed Strum found a still-downy dabbling duck on Jackson Beach. Considering its disheveled state, an identification to Foot-type Family was impressive. All three of these finds reveal a slight skew towards the beaching of waterfowl within Washington's inside waters.

Puget Sound

As in the San Juans, the pickings were pretty slim in Puget Sound this year. The highlight was a fresh, breeding-plumage ancient murrelet found by Peter Linton and Bob Merrick on Perego Lagoon in May. Given the late date (most ancients depart Puget Sound waters by March), it seems likely that this individual just didn't have the pluck necessary to make it back to the breeding grounds in northern British Columbia.

A crow with 'smallish' measurements discovered by Vic Nelson and Sharon Arneson at Point No Point piqued our curiosity...could our beachcast crows be the diminutive, beach-loving "Northwestern crow" and not the bigger, ubiquitous "city crow?" After some deliberation, the answer is...maybe! Five of the six crows found on COASST surveys had wings that were significantly shorter than those of full-blooded American (aka city) crows. This small size probably wasn't due to their age, as all six crows occurred in *late* fall—a time by which juveniles should be full-grown. We ask that you continue to measure crows carefully, and we'll revisit the issue next year. ■

Tips for COASSTers

Pete Seidel and Caroline Harding

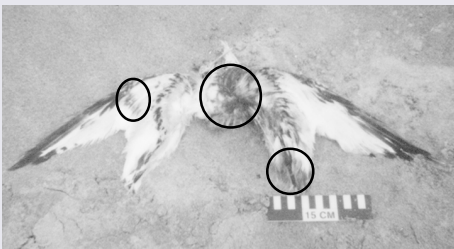


As you can see, bigger numbers (at least 2" tall!) are easier to read.

Keeping Track of Numbers

Having trouble keeping track of the birds you've photographed? Don't be embarrassed, keeping an accurate photo-log is harder than it sounds. For those of you not taking Polaroids (which can be annotated directly), we have a solution: Soft-slate Photo ID Cards. These handy little items were invented by Tom Dinan—Todd's grandfather—to assist his grandson in streamlining COASST. Thanks Tom! For each bird, simply chalk the corresponding cable tie number on the card and place it next to your bird. Larger numbers work best so use all of the available space on the card. Make sure you can clearly see the number—and the bird—before shooting. When you encounter the next bird, just erase the last number and write down the new one. To obtain a card, contact COASST and we'll send one to you.

Mary Sue Brancato



Oil splotches on a juvenile black-legged kittiwake (top) and a tarball murre (bottom).

Courtesy of Makah Tribe



Recognizing Oil

To date, most of you have not reported any oiled birds. Although we are heartened about the cleanliness of our coastal environment, we want to be sure COASSTers do not overlook oil or mistake it for blood or other substances. The upper photograph is a juvenile black-legged kittiwake. See anything amiss? Notice the asymmetrical dark blotches on the wings and the remainder of the breast. Although there was no obvious oil smell associated with the find, the volunteer did report that the substance "felt thick, like cooking oil." This leads us to believe the patches are not blood but probably oil.

So far, our detections have varied drastically in the extent of oiling—from a nickel-sized dollop on an underwing to a 'tarball' that turned out to be a bird. The lump at the end of the log in the lower photograph is actually a bird, it's a murre discovered by Vince Cooke on Makah Bay. Occasionally oil coats a carcass to such an extent that identification—even to recognize it's a bird—is difficult.

If you think you might be seeing oil, but aren't sure, take a close-up photograph, as well as the usual whole body shot. Then, just clip a few feathers with the mystery substance on them, wrap them into a paper bag, seal that into a plastic bag and send them to COASST. Avoid touching the substance directly with plastic gloves or bags, as these petroleum-based products may contaminate the sample and make it difficult to fingerprint.

Oil

- often has a petroleum-like smell, although this disappears over time.
- is usually brown to greenish black in color.
- saturates feather tips, as opposed to blood, which often saturates the entire feather.
- often concentrates over areas of the body in contact with the water, producing a bathtub ring pattern, blotches "on the water line," or a dunked in oil appearance (oil concentrated on the underside).
- has a 'thick' feel to it (like vegetable oil) and is often sticky or greasy. Old oil may be solidified (the tarball effect).

What's Washed In?

New Species

Almost all of the species found in previous years were found again this year, with the exception of the 'not really marine birds' category—like pheasants and house finches—or truly rare species—like the mottled petrel found last year by Mary Sue Brancato (see *COASST Reports 00-01* for more details). However, we certainly added to our species list. Five new gull species included mew, herring, Heermann's, glaucous, and ring-billed, bringing the total gull species to eight (not including the immature gull complex). Although few of these species breed along our coasts, all migrate through both coastal and inland waters. Many gull species are experiencing an increase in population size, in part because these birds are so good at adapting to humanized habitats. Be on the look-out for nonresident gulls!

We also found Caspian terns for the first time this year. In recent years, East Sand Island at the mouth of the Columbia has been home to the largest tern colony in the world (15% of the species were nesting there by the late 1990s). Some of you may know that terns are the object of much controversy in the lower Columbia River, because of their predilection for tasty outmigrating salmon smolts. Reactionary voices have even suggested eliminating terns from the Columbia system to protect salmon. An increase in tern beachings could be indicative of a wave of migrants out of the Columbia.

Quite a few geese and ducks were also added to our species list,

Beached Birds Identified to Species

SPECIES	Yr 3 #	Yr 3 %	Yr 2 %	Yr 1 %
Common Murre	162	26.1	10.5	10.9
Large Immature Gull	111	17.9	7.8	
Northern Fulmar	53	8.5	45.2	8.2
Sooty Shearwater	46	7.4	5.1	2.7
Western Grebe	45	7.2	1.5	9.1
Glaucous-winged Gull	20	3.2	6.0	32.7*
Brandt's Cormorant	16	2.6	0.9	
Western Gull	15	2.4	1.5	
Cassin's Auklet	13	2.1	0.9	
Rhinoceros Auklet	12	1.9	1.5	20.9
Black-legged Kittiwake	11	1.8	4.5	
California Gull	11	1.8	1.5	
Pelagic Cormorant	8	1.3	0.9	0.9
Short-tailed Shearwater	8	1.3	0.6	
American Crow	6	1.0	0.3	
White-winged Scoter	6	1.0	0.3	
Black-footed Albatross	5	0.8	2.7	
Marbled Murrelet	5	0.8	0.6	
Mew Gull	5	0.8		
Caspian Tern	4	0.6		
Pacific Loon	4	0.6		1.8
Ancient Murrelet	3	0.5		
Canada Goose (canadensis)	3	0.5		
Common Loon	3	0.5		0.9
Double-crested Cormorant	3	0.5	0.6	2.7
Fork-tailed Storm-Petrel	3	0.5	1.8	2.7
Leach's Storm-Petrel	3	0.5	0.6	
Surf Scoter	3	0.5	0.3	0.9
Bald Eagle	2	0.3		
Brown Pelican	2	0.3	0.3	

* In year 1, Glaucous-winged and Western juveniles and adults were lumped into a single category—Glaucous-winged/Western Gull Complex

Species totals, excluding unknowns and refinds. Note that major species—accounting for greater than 5% in any year—are in bold type.

SPECIES	Yr 3 #	Yr 3 %	Yr 2 %	Yr 1 %
Brown Pelican	2	0.3	0.3	
Bufflehead	2	0.3	0.3	0.9
Heermann's Gull	2	0.3		
Herring Gull	2	0.3		
Mallard	2	0.3	0.6	0.9
Northern Pintail	2	0.3	0.3	0.9
Red Phalarope	2	0.3	0.3	0.9
Red-throated Loon	2	0.3		
Tufted Puffin	2	0.3		
Black Oystercatcher	1	0.2		
Black Scoter	1	0.2		
Black-bellied Plover	1	0.2	0.3	
Brant Goose	1	0.2		
Clark's Grebe	1	0.2		
Dunlin	1	0.2		
Glaucous Gull	1	0.2		
Greater Scaup	1	0.2		
Greater White-fronted Goose	1	0.2		
Horned Grebe	1	0.2		
Pigeon Guillemot	1	0.2		
Red-breasted Merganser	1	0.2		
Red-necked Grebe	1	0.2	0.3	
Ring-billed Gull	1	0.2		
Western Sandpiper	1	0.2		
American Coot			0.6	0.9
House Finch				0.9
Mottled Petrel			0.3	
Ring-necked Pheasant			0.3	
Sanderling			0.3	
Snow Goose			0.3	
TOTAL	622			

including Canada, greater white-fronted, and brant geese; and one each of a black scoter, red-breasted merganser, and greater scaup. We also found two red-throated loons, and both a horned and Clark's grebe. The latter is only subtly different from the far more common Western grebe, having an orange-tinted bill rather than greenish yellow.

Conservation Concerns

Eleven of the species COASST volunteers found this year are of conservation concern, almost 34% of the identified carcasses. COASST finds are helping shed light on these small or declining populations. In particular, common murre (we found 162) are a State of Washington candidate species, which means that the species is currently being reviewed by the Department of Fish and Wildlife for possible listing as endangered, threatened, or sensitive. Note that three of the COASST top ten are State candidates. Five federally designated species were found this year, including two species of special concern (Cassin's auklet and tufted puffin), two threatened species (marbled murrelet and bald eagle—see *Regulations Update*, page 16), and one endangered—the brown pelican.

COASSTers also reported several oiled and entangled seabirds this year. Common murre collectively topped the list, with two oiled and one entangled in fishing line. Notice that the majority of oiling and entanglement occurred along the South Coast. Rather than alert us that there are special conservation

*Entangled common murre—
note the monofilament around
the head and bill.*



Bill Bacus

State and Federally Listed Species

SPECIES	#	CONSERVATION STATUS
Common Murre	162	State Candidate
Brandt's Cormorant	16	State Candidate
Cassin's Auklet	13	State Candidate, Federal Species of Special Concern
Marbled Murrelet	5	State and Federally Threatened
Caspian Tern	4	State Monitored
Common Loon	3	State Sensitive
Bald Eagle	2	State and Federally Threatened
Brown Pelican	2	State and Federally Endangered
Tufted Puffin	2	State Candidate, Federal Species of Special Concern
Horned Grebe	1	State Monitored
Red-necked Grebe	1	State Monitored

Mortality Related to Human Activities

SPECIES	BEACH	REGION	INTACT?
OILED BIRDS			
Common Murre	North Jetty	SC	No
Common Murre	North Jetty	SC	No
Northern Fulmar	OR Mile 254	OR	No
Rhinoceros Auklet	North Jetty	SC	No
Western Grebe	Ocean Park-South	SC	Yes
ENTANGLED BIRDS			
Glaucous-Winged Gull	Crescent Beach	SJ	
Common Murre (juvenile)	Sand Point South	NC	
Large Immature Gull	Ocean Park-North	SC	
Glaucous-Winged Gull	North Jetty	SC	
Brandt's Cormorant	Copalis Rocks	SC	

problems in this region, we think this reflects the fact that the majority of COASST birds wash up on these beaches. How do these numbers compare to other places? Gulf of the Farallones National Marine Sanctuary beached bird program reports that 5.6% of all carcasses (199) between 1993 and 1999 were oiled. Murres constituted 71% of this total. Our numbers are significantly lower—only 0.7% of all depositions were oiled. Even with this low number we are concerned about the secondary effects on predators and scavengers. Note that four of five carcasses were not intact. Although we think some oiling may be missed (see *Tips for COASSTers*, page 5), in general we believe the Pacific Northwest coastline to be a relatively clean environment.

Major Species

This year we've included the data from all three (2.5 really) years to highlight some of the patterns we are beginning to see. The first thing you should notice is that the major species—defined as those species accounting for 5% or more of the year's sample—don't change very much. Common murres, gulls, Northern fulmars, and sooty shearwaters are always a safe bet. This year Western grebes also made it into the major species category. Occasionally, as in our first year, rhinoceros auklets nudge into this category. Gulls, of course, are usually major species because of the catchall category—large immature gulls. Even so, the majority of these are probably Glaucous-winged and Western gulls.

With several years of data, we can see that although a species may continue to occur as a major species year after year, the percent of total finds it represents can change dramatically. Consider common murres and Northern fulmars. In our first two years, murres represented about 10% of the total—not minuscule, but not major. However, this past year, murres more than doubled their appearance, accounting for 26% of the total. By contrast,

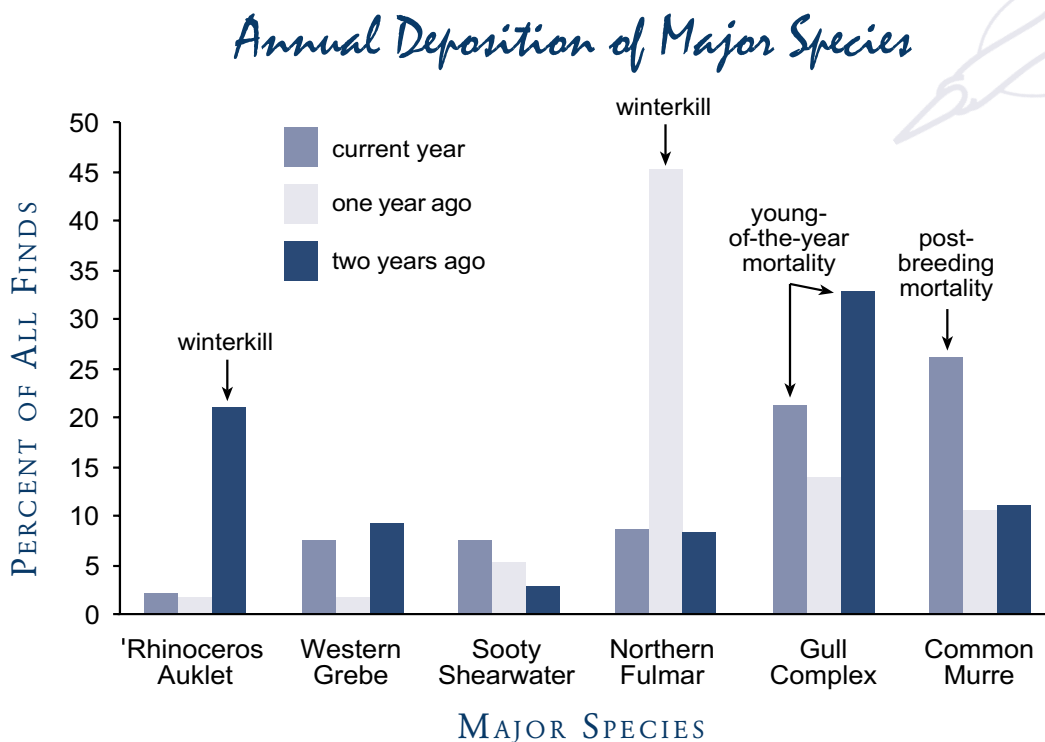
Northern fulmars represented just under 10% of the total this year, as well as in our first year. However, during the 2000–2001 season, they accounted for an incredible 45% of all carcasses found. What is going on here?

Murres, Western grebes, Brandt’s cormorants, and white-winged scoters were all more abundant this year relative to last year. In fact, these species each increased their representation by more than 2.5 times. By contrast, Northern fulmars, black-legged kittiwakes, and black-footed albatross all declined in representation this year as compared to last (also by more than 2.5x). One interesting difference between these two species groups is that the former are all found literally hugging the nearshore, often within sight of land, whereas fulmars, kittiwakes, and albatross make use of waters farther offshore. Perhaps factors outside of the Northwest, such as breeding conditions or ocean weather, caused an influx of the offshore species last year, but not this year. It is also possible that ocean current patterns changed slightly in strength and timing between the years, such that offshore species didn’t wash in as frequently this year. COASST is investigating these explanations and will report back next year.

A Focus on Murres

Murres are a quintessential nearshore coastal species, breeding on rocky islands and islets along the outer coast and usually staying within 10–20 km of the shore (although they do occasionally go offshore). In California, the Gulf of the Farallones National Marine Sanctuary Beach Watch program regularly finds common murres. In fact, they account for 41% of the annual California total between 1993 and 1999. Murres are a ubiquitous feature of the coastal environment in northern California as well as in Oregon. Over 1.5 million murres breed along these coasts. In Washington and British Columbia, the story is a bit different. The Pacific Northwest houses only tens of thousands of murres, maybe as high as 30,000 altogether.

Do these murre counts mean our Washington population is plummeting? Probably not. In fact, we know that murres from Oregon nesting sites regularly migrate into Washington waters after their breeding season finishes in July. During a particularly successful breeding season—and the summer of 2001 was certainly one—tens of thousands of adults accompanied by their chicks swim north into coastal Washington. Although heartwrenching, finding



Large annual differences are caused by both post-breeding mortality and winterkill events.

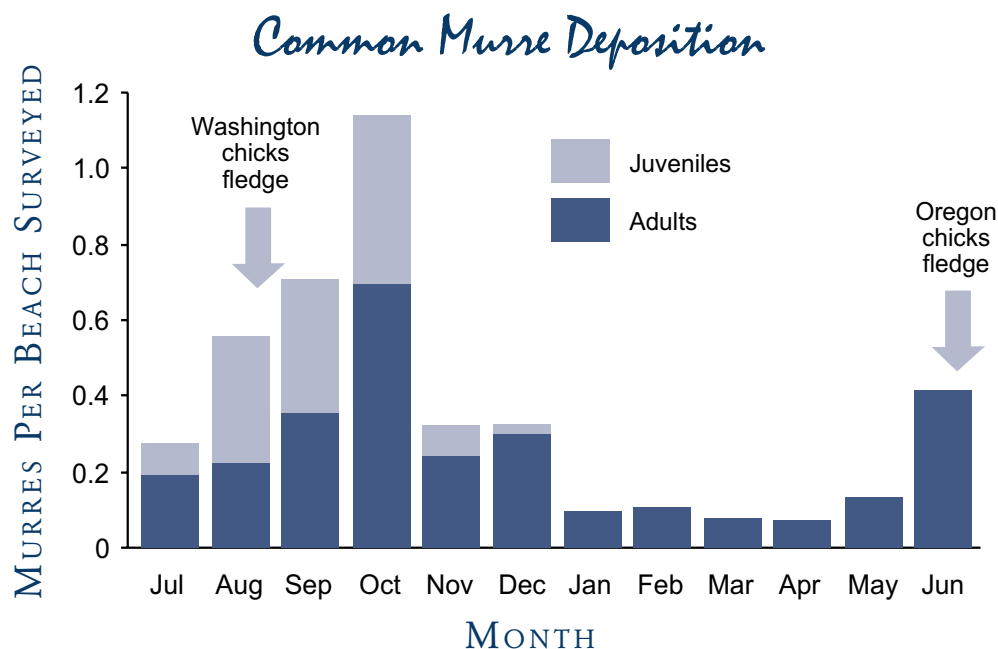
young murre washed up on the outer coast beaches actually signals a good year, not a bad one. Remember that for wild populations, mortality is always high during the first year of life.

To more closely examine the pattern of murre deposition, we combined all COASST data for this year, sorted out only the first finds of murre, and looked to see when during the year there were peaks. COASST records juvenile murre as a different category from adults, so we can look at the extent to which the large murre numbers found this year reflect young-of-the-year. Because high numbers could be a result of more surveys—masking the true pattern—we divided the total number of murre beachings within any month by the total number of beaches surveyed. Although the actual value doesn't make a lot of sense (what does 0.2 of a murre look like anyway?), the month-to-month pattern is what counts.

The murre deposition graph clearly shows that most murre wash up during the summer and fall, with a peak in October. Young murre only occur from July through December; after that, it's impossible to determine a first year bird from an adult. Adult murre are also more common during the fall. This may reflect the influx of Oregon nesters into Washington waters. Larger numbers

may also signal higher mortality, as post-breeders are often in poorer body condition after the stress of incubating an egg and feeding a chick.

The fall murre spike happened to coincide with two days of survey effort by 25 students from the UW Marine Biology class field trip. Of the seventeen species found, common murre predominated. Measurements indicated that roughly half were juveniles (those with bills <40mm) and the rest were adults. However, many of those adults were initially classified as juveniles. Why the error? Over 70% of the adults were in molt and had extremely short, stubby wings! (See *Juvenile or Adult?*, page 11.) Following the breeding season, adults drop and regrow their flight feathers (an energetically costly exercise) and it appears that many weren't strong enough to complete the job. Thus, our timely (and extensive) October surveys captured this heretofore hidden association between mortality and fall molt in murre. These results also underscore the importance of taking accurate measurements—one can only distinguish juvenile murre from adults based on a combination of measurements. Noting qualitative differences in comments is also extremely helpful. For more on the subject of molt, please see WDFW Biologist Chris Thompson's excellent guest essay on the COASST website at www.COASST.org.



The seasonal pattern of murre deposition across all COASST beaches. In October, 41 murre washed up

Deposition Rates

Because COASST collectively spans so many beaches, and finds so many species, we choose to aggregate our data to look for larger scale patterns. We divide space into six regions, from the outer coast of Oregon, to beaches in Puget Sound. Each region contains multiple beaches—a number which will change annually as more sites and volunteers join the program. We divide time into months, which is the standard increment we ask COASST volunteers to commit to (that is, one survey per month). Of course, many of you are out there more than once each month; some of you as frequently as three times in a single month! It is also true that some beaches are shared, such that an individual or a team only visits a beach every other month. How is all of this variation accounted for in our analysis?

First, we check your data. If you've sent data sheets in, the data are entered by our tremendously capable interns in the Olympic National Marine Sanctuary office in Port Angeles, or the University of Washington main office in Seattle. Then, Todd spends many hours pouring over the entries and checking them against your photographs. Once the data have been okayed, Todd and Julia spend a few weeks organizing and arranging the data so that we can go from numbers (and there are thousands of lines of data every year now!) to graphs and tables.

For deposition rate, we've actually changed the way we calculate this value this year. Because so many beaches are being surveyed more than once each month, we worried that simply averaging all surveys within the month (which we did last year) might bias the data. Here's why: deposition refers to those carcasses newly deposited on the beach—refinds don't count. If a beach is surveyed more than once per month, it's likely that on the second time out COASST

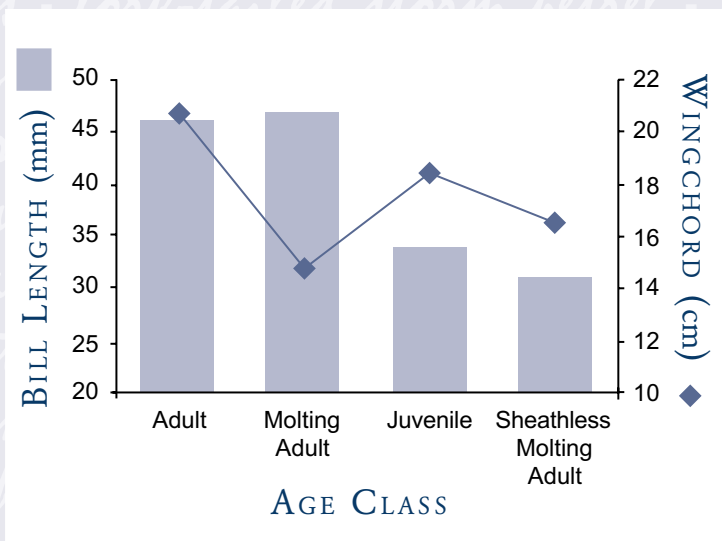
Juvenile or Adult?

This year we had a large pulse of common murres during the Fall post-breeding season. So, were they juveniles or adults—or was it too close to call? Very young murres are easy to distinguish, they are considerably smaller than adults. However, as the juveniles grow, and the adults molt into winter (non-breeding) plumage, this distinction can become difficult.

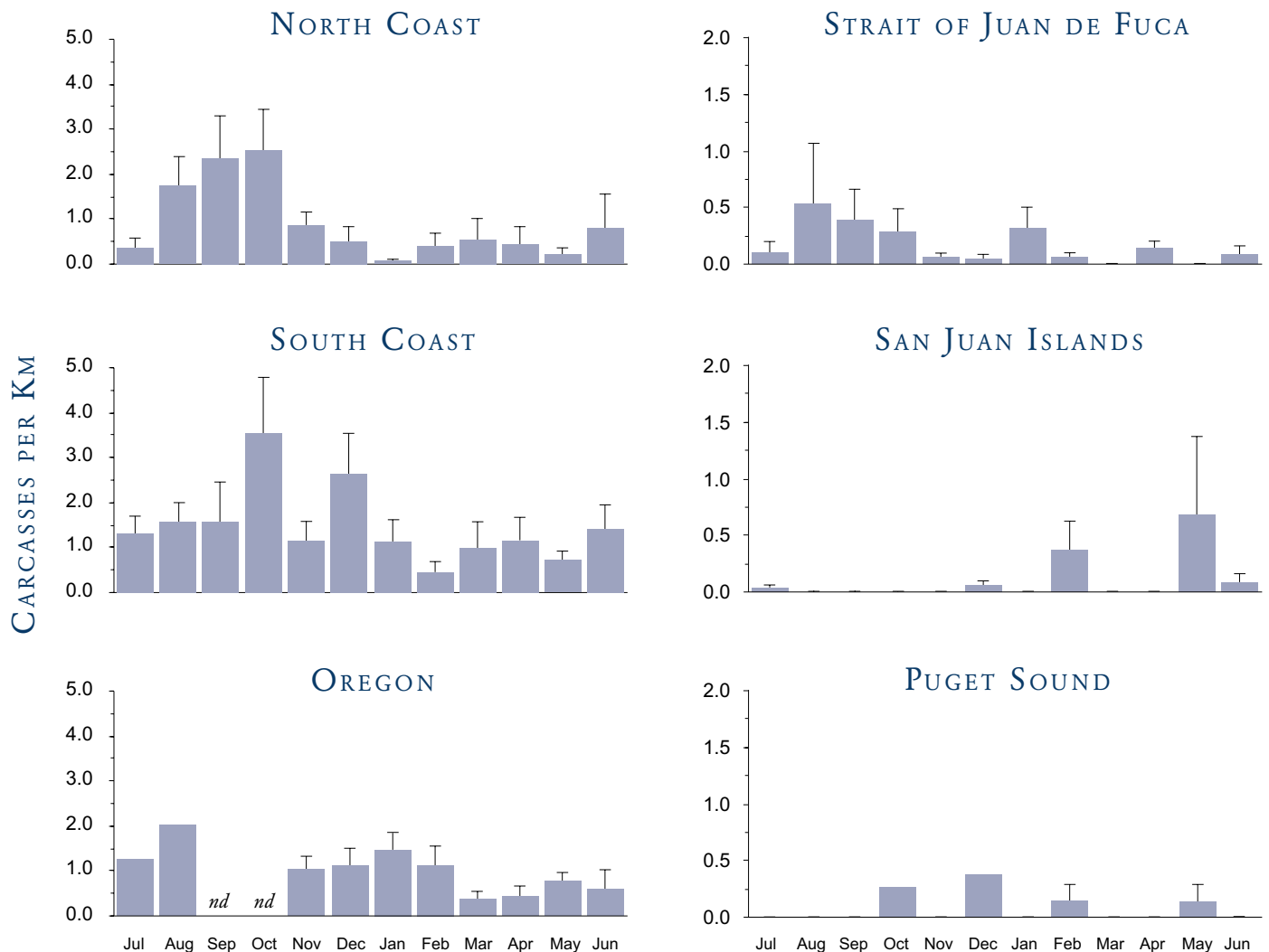
This past October, Julia Parrish's Marine Biology class hit the South Coast beaches for a weekend field trip of COASSTing. Among the finds were 26 murres displaying a range of plumages and ages. Here's what we learned:

Adults almost always have the longest bill (see bars in graph) and wingchord measurements (see diamonds in graph). If the measurements fall within the *Beached Birds* published ranges—you've got an adult. Of course, molting adults will have considerably shorter wings, but notice that the bill measurements are unchanged. Juveniles will generally have both shorter wings and shorter bills. Notice that the wing measurements of juveniles are roughly the same as molting adults. This is where taking accurate bill measurements is crucial. Occasionally, an adult with a missing bill sheath (the outer, horny covering over the bone) is found. As was the case in this dataset, the identification by measurements alone would have been impossible because the bird was also molting. Fortunately, the student noted the missing sheath in the Comments section. Make sure you write down any oddities—they may become essential for a definitive identification.

Murre Measurement Comparison



Deposition Rates by Region



Outer coast regions (left side) had 4 to 5 times as many beached birds as inside waters (right side). nd means no data.

volunteers will refind some percentage of carcasses found and marked on the initial survey. Therefore, if we use only finds (that is, unmarked, new carcasses), the second survey is likely to have fewer finds than the first. Averaging these values would actually pull the deposition rate down. To account for this, we determined which carcasses you found more than once in a given month, and added those back into the ‘finds’ totals for subsequent visits. We did this because we reasoned that if there had only been one survey—let’s say late in the month—those refound carcasses would actually have been recorded as new ones. Confused? Here is an example.

In December, Jane Boyden and Sue Gabriel surveyed

their beach—Oregon Mile 254—twice, once on the 7th and again on the 20th. The first time, Jane and Sue found six new birds, one of which was a sooty shearwater which they labeled green (#4). Deposition is new finds divided by beach length, or $6/1.66 \text{ kilometers} = 3.6 \text{ birds per kilometer}$ (1 mile = 1.66 kilometers). On the second survey, three new birds were found, and one sooty shearwater was refound. You guessed it – #4. If Sue and Jane had only gone out on the 20th, they would have found four new carcasses, not three, because sooty shearwater #4 would not have been marked. Therefore, the corrected deposition rate for the second survey is 4 birds divided by beach length, or 2.4 birds per kilometer

(not the lower 3/1.66–1.8 birds per kilometer which we would have used last year). These two values—3.6 and 2.4—are averaged to determine December beaching rate—or 3.0 birds per kilometers.

Still with us? If not, just remember that COASST calculates deposition by month, by beach, and then averages within region by counting each beach equally. These values—the averages and our measure of variation around that average (known as the standard error)—are graphed on page 12. Months are arrayed on the bottom (X-axis) and carcasses per kilometer are the numbers displayed at left (Y-axis). Are there patterns? You bet.

One thing that is really obvious is how much higher the deposition rate is along the outer coast relative to inside waters. (Notice that the Y-axis scale on the left graphs is 2.5 times as large as the graphs on the right; 5 versus 2). Each month is higher, and there are carcasses found in every month. There are several explanations for this pattern. First, many more species occur along the outer coast but are rarely seen in inside waters. This is particularly true of the migrants like Northern fulmars and sooty shearwaters. Second, even though local breeders like common murres do migrate to inside waters, they are not there year round. Third, the weather and ocean conditions along the outer coast are certainly rougher than in the protected inside waters. Although marine birds are adapted to these conditions, they do suffer especially during the winter (see graph on page 9). Finally, inside waters are far more humanized. Boat traffic, coastal development, and the associated stresses of pollution and disturbance make inside water habitats less desirable for marine birds than they once were. There are simply fewer birds, and thus fewer beachings. However, Strait, Islands, and Puget Sound volunteers should NEVER lose heart. Your data are crucial to the program as they allow us to track what is left.

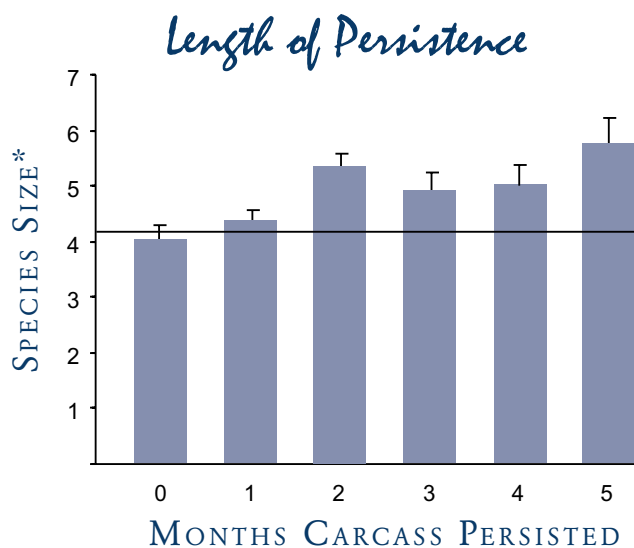
A second readily apparent pattern is the increase in deposition rate starting in the late summer and running through the calendar year. Five out of six regions – the exception is the San Juans – showed this pattern. As with the murres discussed above, the most likely explanation is mortality of both juveniles and adults associated with fledging and post-breeding stress. It is also notable that the inside waters regions, most particularly the San Juans and Puget Sound beaches, showed the most ‘wiggle’ in

this pattern. One reason may simply be that so few carcasses are found that clear month-to-month patterns are difficult to discern. Another explanation is that these waters are relatively protected year-round, which buffers the spike in mortality associated with fall and winter storms. Finally, it may be that the sources of mortality in inside waters—things like pollution and disturbance—are constant pressures.

Persistence Rates

Although we restrict the deposition rate analysis to finds (with a few exceptions noted above), the persistence rate analysis is a different story. Here, we make use of one of the unique features of COASST—that every carcass is individually marked. This one detail sets us apart from nearly every other beached bird program in the world, and allows us to determine how long carcasses persist.

Last year we reported persistence for the first time, and presented the data as a function of persistence time. As you would expect, most carcasses were only refound once, with a few found two or even three more times. This year, 81% of the 169 refinds were only found once (last year’s percentage was 82%!), 14% were found twice, and the rest (5%) were found between three and five times.



Larger species last longer—up to five months!

* 7 = huge; 6 = extra large; 5 = large; 4 = medium large; 3 = medium; 2 = small; 1 = tiny

The five species which constituted the majority of the finds—murres, large immature gulls, Northern fulmars, sooty shearwaters, and Western grebes—also accounted for the majority of the refinds (54% of all individuals refound). However, this is deceiving because they add up to 67% of the initial depositions. Why the 13% drop? In fact, refinds tend to be large birds, whereas several major species are medium-large.

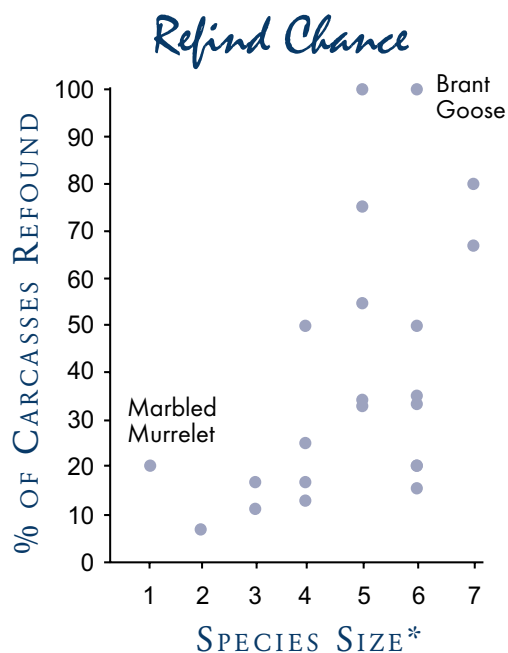
The bar graph on page 13 shows the average size of carcasses as a function of the number of months they persist (and are thus found again) on the beach. COASST categorizes size as a combination of weight and wingchord, from tiny birds like small shorebirds and alcids, to huge species such as black-footed albatross and brown pelicans. The line is the average size of all carcasses found (that is, all initial finds). In general, birds refound within the month (persistence = 0) or one month later (persistence = 1), are the same size as finds overall, approximately medium-large. However, carcasses persisting two to five months are significantly bigger. This pattern makes intuitive sense because smaller birds are probably more difficult to see, and may tend to disappear

(either buried or scavenged) more quickly.

We have also graphed how the size of each individual species (from tiny to huge) affects the chance of refinding it. Each dot on the graph below represents a different species of the 25 total species COASST volunteers refound this year. The Y-axis value is the percent of individuals refound. For instance, one individual out of five marbled murrelets was refound, and the Y-axis value is 20%. For larger species, relatively more individuals were refound; the opposite is true for smaller species. A few caveats: First, higher percentages can be skewed by rarity. Thus, if there is only one individual found, and it is refound, then the percentage equals 100. This is the case for the single Brant goose found—and refound—this year, size extra large. Second, exciting or endangered species may tend to elicit ‘extra looking’ on the part of volunteers, even if they are small. This may be the case with marbled murrelets—the only tiny bird refound.

Scavenging Analysis

With 717 carcasses found, we have a large sample size to examine patterns of scavenging versus predation. Exactly 30% (215 carcasses) were found intact; the rest were only “partially present.” One sign of scavenging (versus predation) would be if frequently found species were evenly represented as both intact and partial. The assumption we are making is that scavengers encounter all beachings with equal frequency, so that percentages even out over so many finds. The major species—common



Larger birds, like geese, albatrosses, and gulls, have a much higher chance of being refound.

* 7 = huge; 6 = extra large; 5 = large; 4 = medium large; 3 = medium; 2 = small; 1 = tiny

Carcass Condition When First Found

MAJOR SPECIES	% OF INTACT	% OF PARTIAL
Common Murre	28.3	24.9
Northern Fulmar	13.7	6.0
Western Grebe	10.2	5.8
Large Immature Gull	5.9	23.7
Sooty Shearwater	4.9	8.6
TOTAL	62.9	69.1

The elevated percent of partial large immature gulls is probably the result of predation.

murres, large immature gulls, Northern fulmars, Western grebes, and sooty shearwaters—are fairly equally represented as intact and partial carcasses with the exception of the immature gulls. For this species complex, partial carcasses comprised almost 24% of the total, versus only 6% for intact carcasses. Because there were roughly twice as many partials as intact (502 versus 215), this actually represents an 8-fold difference! We believe this discrepancy may be a predation signal, as in late summer all fledglings are easy pickings for raptors such as eagles. It is probably more than a simple scavenging signal, unless large immature gulls are an especially sought after scavenging meal (not likely).

A second line of scavenging versus predation evidence comes from those carcasses only found in partial condition. The majority of these finds are small-bodied birds and/or ducks (73% by number as well as by species)—both favorite prey of peregrines which frequent the outer coast.

Species Never Found Intact

SPECIES	TYPE	SIZE	#
Black-bellied Plover	SB	SM	1
Dunlin	SB	SM	1
Bufflehead	DU	SM	2
Red Phalarope	SB	SM	2
Fork-tailed Storm-Petrel		SM	3
Pigeon Guillemot		SM	1
Red-necked Grebe		SM	1
Black Scoter	DU	MED	1
Surf Scoter	DU	MED	3
Mallard	DU	MED	2
Northern Pintail	DU	MED	2
Glaucous Gull		LG	1
Ring-billed Gull		LG	1
Herring Gull		LG	2
Canada Goose (canadensis)		LG	3

Species Type is SB-shorebird, DU-Duck, or unspecified.
Species Size is collapsed into three general categories (rather than seven as in previous graphs).

Eleven out of 15 of the species are favorite prey of peregrine falcons.

What's Left?

PARTS PRESENT	FINDS	REFINDS
One or more wings	97	97
One or more feet	74	70
Head	63	61
Breast	10	9

Numbers are percent of all carcasses within a given category (finds or refinds).

These nearly identical percentages indicate that scavengers make quick work of newly beached birds.

Of course, additional evidence would be nice to separate these two signals. Although it may be gory, fresh blood is often the best evidence of an untimely end at the talons of a predator. Falcons and occasionally eagles will also pull the neck skin up over the head, leaving a partial carcass with an “insideout” look. Be on the lookout for these signs of predation.

Finally, we were interested in the process of scavenging. Is it a one time thing or do scavengers gradually work over a carcass, breaking it into pieces—or perhaps eating it entirely—over time? To address this, we used all of the information COASST volunteers record on which body parts are present on partial carcasses. For beached birds found the first time, wings, followed by feet, are almost always present. Because COASST uses feet and wings as essential identification tools, this is good news. Heads are often present, but breast musculature is rarely there (only 10% of the time). Is this predation or scavenging? To answer this question we turned to the refinds, reasoning that if the pattern of missing body parts was a predation signal, we might expect to find further missing body parts the longer carcasses remained on the beach. In other words, scavengers would come along and munch on the leavings. In fact, the patterns seen for finds are basically identical to refinds. Feet, head, and breast disappear by only a few percentage points. Wings don’t even change! Therefore, we deduced that partial finds are probably plundered by scavengers already. If predators were responsible for some of these beachings, the evidence was masked by this quick scavenging signal. ■

Regulations Update

Bald Eagles on the Beach

This year, two bald eagle carcasses were found by COASSTers, one on the Dungeness Spit along the Strait of Juan de Fuca and a second on Sucia Island in the San Juan Islands. With our growing bald eagle population, it is certainly possible that you may one day find a carcass on your beach. Because bald eagles are protected by the Endangered Species Act and the Bald and Golden Eagle Protection Act, there are special concerns when handling these specimens. Remember that it is illegal to have these birds in your possession—in whole or in part—without appropriate permission.

Is there special information you should collect? If the bird is on US Fish and Wildlife Refuge property, you should take your normal measurements, leave the carcass as you found it, and report your finding to the Refuge. If the bird is found on tribal lands, take your normal measurements and leave the carcass as you found it. If you call

your finding in to COASST, we will notify the tribe. If you suspect foul play in the death of the eagle, for instance a gun shot wound or poisoning (evidence would be foam around the bill), please report your finding to the Washington State Patrol 360-452-3394 or to US Fish and Wildlife Service 425-883-8122 (WA) and 503-682-6131 (OR).

COASST volunteers interested in salvaging eagle carcasses on non-Refuge and non-tribal beaches should contact the COASST office for special protocols and permission forms. Necropsies may be performed on salvaged birds or they may be used for other research purposes. In addition, salvaged eagles are critical for the Feather Repository—a system set up to provide Native Americans with a source for feathers and eagle parts for their cultural and ceremonial use. We do not *require* you to salvage eagles, this is strictly up to you. Bald eagles are large and can be quite heavy—around 9.5 pounds!



Adult bald eagle found by Mary Marsh and Pam Dick on Dungeness Spit.

Pam Dick



Pacific white-sided dolphin found by Pete Seidel and Caroline Harding on North Surfside.

Finding Marine Mammals

Even though COASST is a beached *bird* program, our volunteers do find other organisms, among them marine mammals. Because some of these species are rare—like the Baird’s beaked whale found by Nancy Houtzel and Charles Blight on South Surfside in April 2001—or endangered—like Steller sea lions which frequent the North Outer Coast of Washington—or even tagged, state and federal agencies are particularly interested in information on these animals. But remember, live marine mammals, especially seals, sea lions, and otters, should be avoided. These animals will often haul out on the beach as part of their normal routine.

When you see a moribund marine mammal, particularly a whale or porpoise, here are the things to look for:

- shape, size, and placement of the dorsal (top) fin
- shape and size of the pectoral fins (paired flippers)
- head shape (melon-like forehead? beak?)
- number of blow holes (one or two)

You might also be able to tell if the animal has teeth—like a killer whale—or baleen and throat grooves—like a gray whale.

Measure the length of the animal by pacing, making sure you have also measured the length of your own stride! The Marine Mammal Stranding Network gets estimates from 6 to 18 meters for the same animal, which

can make it very difficult to verify identification. Finally, describe the color of the animal, including any scars or interesting marks. Markings on animals such as humpback or gray whales can allow scientists to identify and track specific individuals.

Any tag or obvious human-made mark (such as a brand) should be noted and photographed (or sketched). Tag/brand color, shape, and location should be recorded, as well as any number/letter combinations.

For all marine mammals, photographs are essential. Try to take several pictures—one of the entire animal, and additional photos of potentially discriminating characters such as the dorsal fin of a whale or porpoise. If you don’t have a camera, make a sketch on the back of your datasheet.

As soon as you finish your survey and can get to a phone, call in your sightings to the proper authorities. Be specific about where the animal is located on your beach; notable landmarks, closest access and estimated distance can help responding personnel reach the stranding. Whales (dead or alive) and tagged seals or sea lions can be called in to the National Marine Mammal Stranding Network at 206-526-6733 or 800-853-1964. Dead sea otters can be reported to Washington Department of Fish and Wildlife at 253-589-7235. ■

On the Web

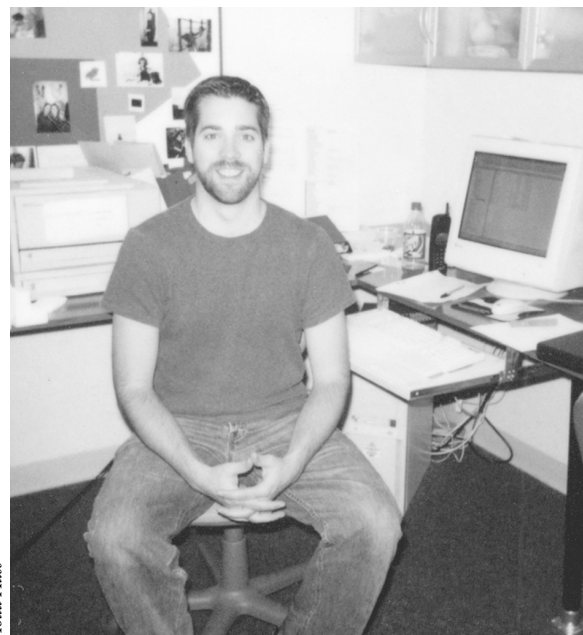
Thanks to the diligence of Brian Altman and Todd Hass, COASST is now fully functional on the web. Visit us at www.COASST.org. Once there, you'll find a wealth of information about the program including: an annotated map of all beaches surveyed by COASST volunteers (Who We Are); the latest breaking news in the beached bird world, like whether you can catch West Nile virus from dead birds (What's New); a set of essays—complete with photographs—on aspects of the natural history of birds likely to be found on COASST beaches (Bird Bits); access to COASST products such as our field guide *Beached Birds: A COASST Field Guide*, and past COASST Reports (Products); and—of course—our automated web data entry interface (Data Entry).

Other than our volunteers, who visits us? In fact, lots of folks. This year, we've gotten hits from 45 countries, and all 50 states within the US. Some people are just surfing, but others are actively looking for information. For instance, following an article on volunteer programs which featured COASST published in *Volunteer Monitor* in Winter 2002, hits on the website leaped to over 2,000 per month. In April, hits from Canada increased. Turned out that Bird Studies Canada on the East Coast was interested in starting a similar program. After visiting our website (many times), Becky Whittam contacted Todd to ask whether the fledgling Canadian program could use our approach. We gladly sent them our protocols. And this was just the beginning of our collaboration; look for a COASST field guide to East Coast beached birds in the future!

Of course, volunteers are always welcome.

Visiting the website not only offers the convenience of direct data entry, but you can also get an idea of what you've found relative to fellow COASSTers the next beach—or region—over. We'll update these totals soon with information from this year's COASST Reports.

In the coming year, look for added features, including photographs of the beaches and volunteers who survey them, and more guest essays on interesting beached bird natural history. And although it's been missing for awhile, we're planning on bringing back the highly acclaimed Foot-Type Family quiz, to sharpen the skills of novice and advanced COASSTers alike. ■



Todd Hass

COASST web guru, Brian Altman, takes a programming break

Volunteer Opportunities

Substitutes

Sometimes one person of a pair just can't make it for the survey, some pairs just can't make all 12 surveys, and occasionally a medical emergency comes up, leaving a beach unsurveyed. We need a pool of COASSTers willing to weigh in at the last minute to help us avoid gaps in our monthly data. Are you willing to be a substitute? If so, please contact Todd or Mary Sue and they will add you to the call list.

Upcoming Training

Are you thinking about joining COASST, or even refreshing your skills? Todd and Mary Sue will be running several training sessions as we move into the Fall high deposition season. We are focusing our expansion efforts on greater Puget Sound. For more information, call Todd at 206 221-6893, or Mary Sue at 360 457-6622 ext. 27, or check the COASST website at www.COASST.org.

Office help

As our volunteer base grows, so do our office needs. Got some extra hours and an interest in seabirds and citizen science? Volunteering or interning with COASST could be for you. In the coming year, we'll need people to assist with data entry, website maintenance, volunteer check-ins, photo scanning, writing, mailing, taking surveys, inventory, and training. We're also interested in some specialized help in designing additional training manuals for our volunteers. If you are an illustrator or technical writer, we could really use your help. Students interning with COASST can set up projects in conjunction with the Burke Museum at the University of Washington, and the Slater Museum at the University of Puget Sound, or choose a project of their own through the Parrish lab. The list is practically endless. For more information, call Todd at 206 221-6893, or Mary Sue at 360- 457-6622 ext. 27.

Beached Bird-A-Thon

If you haven't heard already, we're going to hold our first Beached-Bird-A-Thon this year, to raise awareness of (and funds for) COASST, *and* to collect top notch data during the Fall deposition peak. During the middle two weeks in October, all COASST volunteers will be scouring their beaches for new birds and refinds. Obtaining pledges is optional. Pledges can be made for a survey completed, with bonuses for each carcass found. Encourage your friends, family, neighbors, and co-workers to get involved, by pledging or coming along! If you are a COASST volunteer, look for the enclosed pledge sheet to start you on your way. More information on the Bird-A-Thon will be distributed by mail or email. We'll summarize the Beached-Bird-A-Thon results in this year's Holiday letter.

Answers to the Quiz

Easy: This bird dwarfs the shoe in the background of the photo. Its measurements are also huge, just compare them to the values in the wing table of the field guide. The black head with white cheek confirms that this is a Canada Goose.

Medium: A flat, broad beak and webbed toes (with a lobed 4th) suggest that this is a duck. The contrasting white band in the 2°s could also be described as a "dark-tipped, white speculum." Since the band of white extends into the 1°s, this is a Greater Scaup.

Hard: Technically, this bird is not in the field guide—except as a "Similar Species": You just looked up its cousin, the Canada Goose. Want to try again? The thin white crescent on an otherwise black neck is diagnostic for Brant Goose.

COASST People

Volunteers

Last year we bragged we'd have impressive totals—and we weren't lying. In its third year out, COASST volunteer ranks grew from just over 80 as of July 2001 to 185 at present! Of this, about 125 of you are steady customers—hitting the beaches month after month, in all kinds of weather, to send us COASST data. As you well know, COASST could not exist without the massive support of our volunteers. Your enthusiasm and data input have made us one of the most highly quality-controlled citizen science programs in the Pacific Northwest (and we think, in the world!).

In a truly impressive total of 745 surveys this year, COASST volunteers logged almost 2000 hours (and that total doesn't include the many extra hours of transit time to and from your sites) and walked 3700 kilometers (out and back). That's almost three months of surveying 24/7 and enough distance to get from Seattle to well into Mexico. Wow! Special kudos go to Andy Gruse, who *surveyed* just over 80 kilometers (remember, that's one way...) on South Coast beaches Damon Point-East, Damon Point-West, and South Taurus. Kathleen Wolgemuth logged almost 50 survey kilometers during 19 visits to her South Coast beach—North Jetty, where she and her partner Dianna Moore spent almost 60 hours finding and identifying beached birds. Stuart MacRobbie logged 20 surveys to Strait of Juan de Fuca beaches Gray's Marsh and Jamestown, and also racked up impressive hour and kilometer totals. Of course, long hours and distance doesn't tell the whole story. Joan Fitzjarrald and Bob Davison visited their little beach, Deadman Bay in the San Juans, *24 times this year*. When you consider how infrequently birds are found in this region, twice a month is incredible! John Epler and Clem Hoerner just missed this mark, visiting Ocean Park-North on the South Coast 23 times. Vic Nelson, on the Puget Sound frontlines, surveyed Point No Point 22 times. Vic has also been keeping weekly counts of live seabirds—on the water—for many years. The most stunning participation award clearly goes to Mike Kaill. Mike surveyed not one but *two* beaches each 22 times this year—Eagle Cove and South Beach-West in

Volunteer Spotlight

Pam Dick and Mary Marsh

Mary Marsh and Pam Dick have been conducting COASST surveys on the Dungeness Spit since March 2001, where they are responsible for the first mile of the Spit. They came to the program after being introduced to it during a Continuing Education class at Peninsula College—Instructor Pat Willits had invited COASST to present to her class. COASST actually came quite naturally to these two women who are naturalists in the truest sense of the word—students of the world around them. Pam and Mary describe themselves “like little kids exploring, always excited about what we find.”

For the last 12 years, Pam has taken daily walks in the Dungeness Spit area. Mary joined her 5 years ago. The two have gotten to know the animals that have taken up residency in their area, and they measure the seasons not only by the weather but by the activities of these animals. Pam and Mary have dissected pellets to see what “their” pair of Northern Harriers have foraged on, and they have observed a pair of Bald Eagles for many years. Although they don't find many beached birds, they have had some truly interesting—and rare—finds.

Earlier this year, Pam and Mary found an immature gull. Pretty usual except that this gull had died choking on an octopus arm (see photo at top right). Just recently they found a bald eagle carcass on their COASST survey. Not many people get the chance to see an eagle up close and personal. Both COASSTers marveled at the size and strength of the bird, brought home to them in the feel of the wings and sheer magnitude of the talons. They think the eagle may be the male from the pair they have been observing so long. Although Mary and Pam were sad about this bird's demise, they were also very businesslike in dealing with the carcass. A quick call to alert US Fish and Wildlife and OCNMS-COASST personnel resulted in the establishment of proper procedure for handling listed species (see *Regulations Update*, page 16).

Thinking outside the box has helped Pam and Mary advance COASST goals on more than one occasion. Because Dungeness Spit is part of the US

Fish and Wildlife Refuge, no birds can be cable-tied. This makes it difficult to advance one of our central goals—tracking the persistence of deposited carcasses. This year, Mary and Pam invented a primary feather clipping system which allows them to individually ‘mark’ their birds. The clipping system is translated into bird numbers—stored on a special clipboard which is passed to their beach partners Bill and Barbara VanderWerf.

When not volunteering for COASST, Pam and Mary are busy with many other tasks. One of them is reassembling the skeleton of a beached harbor porpoise. The carcass was recovered as part of the Marine Mammal Stranding Network (see *Regulations Update*, page 17). After being submerged in the ocean for a year, and given a light boiling, the bones were ready for Pam and Mary. The completed skeleton will be on display at the new OCNMS offices.

Mary and Pam conduct COASST surveys because they feel it’s a way for them to give back to the community—by helping the scientific community. They care about where they live and they want it to stay healthy. And they do it for the pure joy of it, as Mary says, “look at where we live, we are so lucky, and we truly enjoy it.” And Pam adds, her smile telling all, “Each day is like the first time.”



Mary Sue Brancato

COASSTers Pam Dick and Mary Marsh hit the beach at Dungeness Spit monthly.



Pam Dick

This gluttonous juvenile gull apparently suffocated trying to swallow an octopus arm. When the arm was removed and measured, it was almost a meter long!

the San Juans. Mike also gets many extra points for involving a whole raft of San Juans’ folks in his COASST surveys. Whether you are a COASST diehard or a more casual contributor—we both value and need your data. Please keep up the great work and give yourself a hand for your efforts.

Even more impressive are your identification statistics. Between COASST volunteers and our inimitable Program Director Todd Hass, almost 88% of this year’s beached birds were identified to species. This is especially impressive because the majority of COASST finds are not intact—making identification harder. How did our volunteers do? For intact finds, COASSTers identified 90% of birds correctly to species, and 99% to Foot-type Family! Partial carcasses were slightly harder, 80% and 90% respectively. Using your photographs and detailed datasheets, Todd improved these statistics by only a few percentage points, bringing the final intact and partial identification to species totals to 95% and 83%, respectively. These extremely high values are a testimonial to your dedicated and careful survey effort.

VOLUNTEER*	HOURS	KILOMETERS
Acker, Steve	2.3	3.0
Albright, Pat	8.0	6.6
Albright, Rich	14.3	13.3
Amundsen, Alan	5.6	5.0
Andrich, Birgit	2.5	2.6
Antrim, Liam	9.3	5.8
Armor, John	2.4	1.9
Arneson, Sharon	8.0	13.2
Arnheim, Elissa	1.3	2.2
Arzarian, Ken	15.8	31.4
Baccus, Bill	19.5	21.4
Beals, Tracy	5.7	4.6
Beers, Diane	23.1	19.4
Beers, John	5.5	4.8
Bell, Bill	0.8	1.1
Bell, Bryan	5.2	4.6
Bernthal, Carol	3.5	1.9
Bierma, Linda	14.3	10.5
Bierman, Beth	7.6	11.7
Biology, Marine	23.3	7.9
Bivin, Mignonne	2.2	0.8
Blackie, Barbara	31.1	16.6
Blight, Charles	27.5	21.0
Bolen, Sue	5.0	2.0
Border, Jennifer	0.7	0.8
Bowlby, Ed	11.6	11.6
Boyd, Walter	1.3	1.1
Boyden, Jane	21.2	16.6
Brancato, Mary Sue	38.1	25.9
Brenkman, Katie	3.5	1.9
Brooks, Varn	22.5	22.4
Bush, Kathy	32.1	18.0
Bush, Rick	33.9	19.5
Byrnes, Coleman	11.2	8.4
Campbell, Barbara	4.5	5.1
Campf, Joan	0.8	1.7
Canoy, David	5.0	3.3
Carlson, Betsy	11.9	6.1
Centala, Maxine	17.2	30.0
Chovan, Judy	7.9	1.8
Christensen, Jan	6.7	9.0
Clark, Gordon	2.4	1.7
Clark, Susan	50.3	32.3
Clausen, Debra	23.2	38.6
Comerford, Jane	6.8	11.6
Cox, Deb	2.8	1.2

VOLUNTEER*	HOURS	KILOMETERS
Cox, Tom	2.8	1.2
D'Amore, Judy	6.0	1.9
Dancer, Donn	8.1	13.0
Dancer, Mary	8.1	13.0
Davison, Bob	17.3	7.4
Dick, Pam	29.0	16.1
Dwan, Lynn	1.0	2.2
Edwards, Damien	3.0	3.9
Enga, Sharon	5.6	5.0
Engelhard, Colleen	7.8	10.2
Epler, John	19.2	36.8
Erickson, Aleta	1.5	1.7
Farris, Annie	3.1	3.4
Field, Rebecca	8.2	18.0
Fitzjarrald, Joan	17.9	7.7
Fradkin, Steven	1.5	1.7
Frisch, Ron	14.5	15.1
Gabriel, Sue	22.4	18.3
Galasso, George	4.6	1.9
Gamber, Jen	9.0	6.0
Gerdts, George	0.7	1.3
Germane, Carolyn	9.5	6.6
Golde, Hellmut	1.5	3.1
Golde, Marcy	1.5	3.1
Gremel, Scott	1.0	1.7
Gruse, Andy	30.5	80.3
Hall, Shelley	13.9	7.8
Happe, Patti	12.1	11.1
Harding, Caroline	7.3	12.0
Harmon, Jean	2.0	1.7
Harold, Sandra	10.9	11.5
Hoerner, Clem	18.2	35.2
Hoffman, Cat	1.7	0.8
Hoffman, Roger	9.2	5.5
Holmberg, Martha	3.0	3.3
Houtzel, Nancy	41.8	31.5
Hunter, Gay	18.7	12.6
Iverson, Jeanne	3.0	1.6
Jenkins, Kurt	2.7	3.8
Johnson, Dick	4.5	6.0
Johnstone, Lillian	11.8	12.5
Johnstone, Bert	14.6	14.9
Kaill, Mike	21.1	24.2
Kendig, Susie	5.9	3.4
Kimball, Kaylan	12.1	4.6
Klawitter, Rick	30.5	18.0

VOLUNTEER*	HOURS	KILOMETERS
Krival, Steve	4.8	1.9
Kuo-Harrison, Elena	8.5	6.7
Leek, Stevie	8.8	5.1
Leonard, Edi	1.8	0.2
Leyman, Bev	6.2	3.5
Leyman, Larry	10.8	5.6
Linton, Peter	17.5	10.0
Lowe, Derek	8.0	6.3
Lowe, Robyn	8.0	6.3
Lull, Karen	22.5	22.4
Lundgren, Kelly	3.0	3.0
Lundgren, Nate	7.0	7.0
Lundgren, Stephen	13.0	13.0
Lundgren, Zack	4.0	4.0
Lustig, Sanny	1.0	1.7
MacRobbie, Pat	11.1	9.7
MacRobbie, Stuart	42.1	39.3
Madlin, Julie	1.0	2.2
Manson, Dave	1.5	2.2
Marsh, Mary	31.0	17.8
May, Linda	24.8	27.5
McBride, Chip	13.8	14.5
McBride, Michael	2.0	2.0
McCracken, Elaine	9.0	6.0
McKay, Jill	26.4	6.3
Merrick, Bob	14.5	7.1
Miller, Ian	5.4	4.6
Miller, Pat	4.3	8.6
Milne, Barbara	9.3	17.0
Molin, Susan	5.2	4.1
Moore, Dianna	59.3	46.8
Muldoon, Cicely	1.5	3.4
Muller, Steve	2.3	1.6
Munsey, Tom	0.3	0.3
Naslund, Nancy	3.8	4.1
Nattinger, Sue	15.8	14.5
Nelson, Dan	10.6	15.6
Nelson, Vic	18.3	29.0
Newbegin, Wade	12.5	11.6
Newman, Nancy	8.0	13.2
O'Neill, Mark	7.8	6.0
Opatz, Gerald	1.0	1.1
Owston, Connie	7.3	6.6
Owston, Pete	11.3	10.0
Paul, Josey	7.3	6.8
Peters, Mollie	5.3	6.6

VOLUNTEER*	HOURS	KILOMETERS
Petersen, Jan	2.3	3.0
Piatt, John	3.8	4.1
Powell, Weston	1.5	1.7
Raffensperger, Paul	8.8	8.3
Ritchie, William	5.2	3.8
Ridgway, David	0.8	0.3
Ridgway, Ginger	11.8	4.6
Rodrigue, Kelly	1.0	2.2
Ross, Marilyn	5.4	6.0
Sale, Wilma	6.5	2.9
Sanguinetti, Pam	8.7	7.7
Saskowsky, Tim	19.3	18.4
Schlee, Liz	30.5	18.0
Schwartzberg, Robert	4.8	5.4
Seidel, Pete	7.3	12.0
Skubinna, Sue	1.0	1.2
Sparks, Betty	11.3	11.6
Steelquist, Bob	2.8	1.9
Stewart, Jesse	6.3	8.0
Stone, Carolyn	17.9	15.3
Stone, Kathy	1.0	1.2
Strong, Eftin	3.8	2.4
Strong, Ingrid	12.3	9.8
Strum, Carol	1.2	0.4
Strum, Ed	9.8	2.4
Sundberg, Kim	23.2	38.6
Sweeney, Jim	1.0	1.3
Tallmage, Kyle	1.4	1.2
Tenny, Sue	6.0	5.0
Timmons, Doug	12.1	16.5
Timmons, Linda	12.1	16.5
van Doorninck, Anneka	30.8	39.0
van Doorninck, Wolter	29.8	37.1
VanderWerf, Barbara	14.0	12.9
VanderWerf, Bill	14.0	12.9
Wahl, Darlene	4.6	10.2
Webster, Rosalie	0.7	1.1
Weed, Elone	26.0	12.6
Weed, Walter	26.0	12.6
Williams, Daniel	5.0	2.0
Wolgemuth, Kathleen	59.5	49.4
Wooten, Carrie	3.8	6.6
Wurster, Elaine	1.0	1.1
	1994.5	1856.5

*Volunteer effort July 2001 - June 2002

Staff

COASST staff has been busy too, trying to keep up with the needs of our ever-expanding program. During the past year, Todd made eight training and refresher visits to sites scattered across Washington and Oregon. He has also been very busy revising *Beached Birds: A COASST Field Guide* by adding 17 additional species accounts. Now our field guide will be usable by fishery observer programs from California to Alaska. This is a major step for seabird conservation as we can now be assured that species identifications will be correct. When not attending to the growing needs of the office, Todd spent a serious amount of time reviewing each and every data entry. Because we now receive two surveys each day, on average, this is a huge job.

Todd and Julia Parrish, our Executive Director, spread the word about COASST at various professional meetings this year. Last August they convened a Seabird Conservation Symposium attended by over 100 people at the American Ornithologist's Union meeting in Seattle. In what has become an annual trek, Todd discussed COASST results at the Pacific Seabird Group meeting, this time in Santa Barbara, California in February. In May, Todd talked about conservation strategies for migratory seabirds as an invited speaker at the North American Wilderness Conference in Seattle. Julia presented the COASST program to The Russell Family Foundation grantee gathering this summer, and will speak on the successes of the COASST program to the Marine Environmental Health Program early this fall.

Our partnership with the Olympic Coast National Marine Sanctuary continues to be crucial to the success of

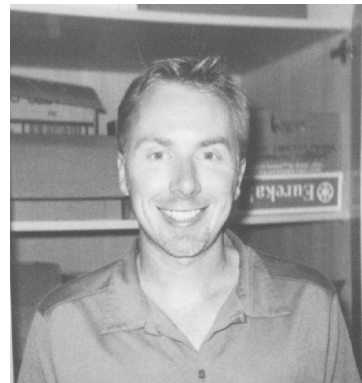
COASST efforts. OCNMS staff have devoted incredible time to COASST this year. Mary Sue Brancato, our North Coast and Strait of Juan de Fuca Volunteer Coordinator, ably assisted by Barbara Blackie, conducted another six training sessions along the outer coast and Strait of Juan de Fuca. This brings the COASST training total to an all-time high of 14 sessions this past year! Mary Sue, Barbara and assorted OCNMS staff also continued their COASST outreach efforts, manning booths featuring COASST (among the many programs OCNMS runs) at the Low Tide Festival in Port Townsend and the Shorebird Festival in Grays Harbor, among others.

In addition to their training and outreach efforts, Mary Sue, Barbara, and Katie Brenkman developed a super volunteer database for COASST. Now we can track all of you as well as your beached birds! Steve Intelmann used his GIS skills to create the stunning maps we use in COASST. And all of the OCNMS staff, including Ed Bowlby, Norma Klein, George Galasso, Bob Steelquist, Carol Bernthal, Liam Antrim, and John Armor, have contributed by conducting North Coast surveys.

Mary Sue and Ed Bowlby will be using COASST data in the coming year to generate predictions about potential oil spill damage to seabird populations. This is one of the central reasons COASST collects data—to form the baseline against which catastrophic events can be measured. Kudos to Ed and Mary Sue for their analysis efforts.

And finally, if not for Kate Litle at the University of Washington, COASST might have suffered severe growing pains this year. As our office manager and general workplace whiz, Kate has made our transition to the big-time virtually seamless. Thank you Kate!

Colin French, Julia Parrish



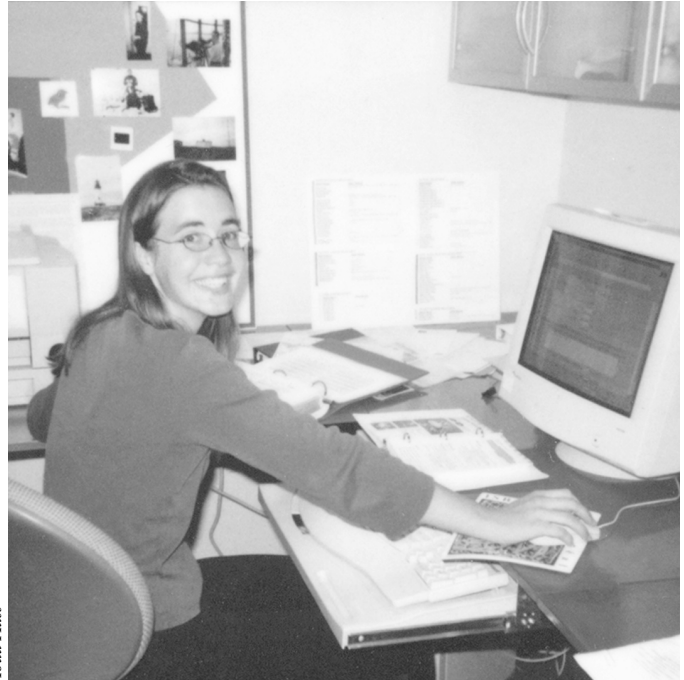
(l to r):
Kate Litle,
Julia Parrish,
Todd Hass,
COASST-UW
staff.

Interns

Like our volunteer base on the coast, the COASST office has grown as well. Many student interns have assisted with data entry, office organization and miscellaneous special tasks. Altogether, we've averaged about 3 hours of volunteer assistance from our UW crew per day. Not only are they productive, they add great personality to the lab.

Over the Winter and Spring quarters, everyone in our UW office spent tens of hours transferring our old records into the new, online database. Without this major endeavor, we'd never have been able to generate this year's annual report—thanks everyone! Those deserving of special kudos in that effort include: Mikey Cofer, toxicologist and recent transplant from North Texas; Rolando Cruz, an Aquatic & Fishery Sciences major and former navy man; Chris Wolfe, bird specialist on loan from the Burke Museum; Jane Dolliver, Marine Studies major and all-purpose data cleaner; and Laura Epton.

James Kim, last year's staff MVP, is now working as an instructor for the American Red Cross (where he was also a former volunteer!). COASST has missed him



Todd Haas

Jane Dolliver enters volunteer data in the COASST main office.

this summer, as he has pursued advanced training for natural disaster relief in Berkeley, California.

Late last Fall, Seattle artist and UW Lecturer Perri Lynch helped us create our holiday card and erected "The Wall"—the series of bulletin boards on which we track volunteer submissions. In addition, Perri's bill drawings will grace the upcoming species additions to *Beached Birds*.

Before graduating last spring, Danielle Potter helped us train volunteers in the San Juans. She now keeps our ever-growing file collection and volunteer lists up-to-date.

Jay Caponera and Rolando Cruz are currently going through our 19 binders of data and photos; scanning and cataloguing the hundreds of Polaroids and prints submitted by volunteers during the past three years.

Finally, we extend our most sincere thanks to Brian Altman, our web designer and database guru. His comprehensive, behind-the-scenes efforts have made data entry and validation a task of ease for all of us. Although he and his new wife moved to Brisbane, Australia in July, keep your eyes alert to upcoming refinements to www.COASST.org. With today's internet, Brian is never far away. ■



Todd Haas

Rolando Cruz scanning beached bird photographs taken by COASST volunteers.

Quiz: Can you i.d. these birds?

easy one



Nancy Houtzel and Linda Bierma

vital stats

found 6/25/02

South Coast

South Surfside

Bill: 60 mm

Wing: 48 cm

Tarsus: 96 mm

medium one



Nancy Houtzel and Charles Blight

vital stats

found 2/20/02

South Coast

South Surfside

Bill: 42 mm

Wing: 21 cm

Tarsus: 42 mm

hard one



Susan Clark

vital stats

found 5/16/02

South Coast

Ocean Park South

Bill: 36 mm

Wing: 32 cm

Tarsus: 58 mm

COASST Sponsors

COASST is underwritten by generous grants from several foundations, including: The David and Lucile Packard Foundation whose initial support took COASST from the drawing board to the beaches. The Marine Ecosystem Health Program funded our expansion into the San Juan Islands. The Russell Family Foundation funds our current expansion into Puget Sound. And COASST support in the private sector is growing—contributions from individuals totaled over \$5,000 this year!

COASST also owes its existence to continued support from state and federal agencies. The Washington Department of Fish and Wildlife and the National Marine Fisheries Service contributed to the development and expansion of *Beached Birds: A COASST Field Guide*.

Without in-kind support for the University of Washington—COASST’s home base—and the Olympic Coast National Marine Sanctuary, daily operations of the COASST staff would not be possible.

Cable Markers Co., Inc. of California continues to donate the thousands of cable ties COASST volunteers use to individually identify beached birds. Tom Dinan of Arlington, Washington donated an additional one hundred “soft-slate” photo-id numbering cards.

Rob Faucett of the Burke Museum coordinated over one hundred specimen loans and accepted salvaged birds from COASST. Perri

Lynch contributed drawings to the COASST protocol and oversaw the development of our new black-and-yellow metric rulers. Chris Thompson contributed an original essay on www.COASST.org.

Phillip Johnson, of CoastWatch coordinated all Oregon recruitment and training events and greatly facilitated our expansion there. Z Morgan Benowitz-Fredericks helped train new volunteers in Oregon.

And a special thanks to the people and programs who hosted COASST training programs, including: Burke Museum of Natural History and Culture, Dungeness River Audubon Center, Ocean Shores Interpretive Center, Olympic National Park Mora Facilities, Peninsula College, Skagit Valley Community College, Tahoma Audubon Society, and Oregon’s Hatfield Marine Station and North County Recreation District Community Center, Nehalem. Extra points go to Gene Woodwick and Diane Beers from the Ocean Shores Environmental Interpretive Center, who hosted the UW Marine Biology class for an October weekend and even provided cold and hungry undergraduates with freshly baked brownies, cookies, and muffins.

If you would like to make a monetary donation to COASST, or donate training space, time, equipment or materials, we would love to hear from you. Please contact Julia Parrish, at 206 221-5787. ■

COASST Mission


The Coastal Observation And Seabird Survey Team (COASST) is a citizen science project dedicated to involvement and action. COASST believes that coastal residents know and care about their local resources. With a target of comprehensive beach coverage in Washington and Oregon, COASST volunteers will provide long-term baseline data on seabird beaching, and become an active voice in coastal marine conservation.

COASST Reports Team

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