



COASTAL WATERBIRD DATA SUPPORTS NEW RAMSAR DESIGNATION FOR FRASER RIVER DELTA

BY KAREN BARRY & PETER DAVIDSON

On September 22, 2012, the Ramsar Convention on Wetlands designated 20,682 hectares in the Fraser Delta-Boundary Bay area as Wetlands of International Significance, the highest designation for the protection of wetlands. This new Ramsar site, named “Fraser River Delta”, is an expansion of the Alaksen Ramsar Site first designated in 1982 and includes Burns Bog, the Wildlife Management Areas of Sturgeon Bank, South Arm Marshes, Boundary Bay, Serpentine, and the previously-designated Alaksen Ramsar Site on Westham Island.

The entire area is an Important Bird Area, and parts are also designated a Western Hemisphere Shorebird Reserve Network site of Hemispheric Importance, a National Wildlife Area, and provincial Wildlife Management Areas. Although Roberts

Bank has not been included in the Ramsar Site, most of Roberts Bank was recently designated a Wildlife Management Area and it is expected to be added to the Ramsar designation.



Dunlin Flock (T. Middleton)

This Ramsar designation was made possible by contributions from a number of conservation organizations and governments. Volunteers with Bird Studies Canada’s BC Coastal Waterbird Survey played a pivotal role in the Ramsar designation. Monthly waterbird counts since 1999 were used to demonstrate that the high abundance of 16 bird species using the area regularly exceeded the Ramsar criteria, and these counts were among the most important bird data in the submission for Sturgeon Bank and Boundary Bay. This is an excellent example of how Citizen Science data can contribute directly towards conservation decisions and we thank everyone for their efforts!

The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources (www.ramsar.org). Canada is one of 163 contracting parties to the Ramsar Convention and, to date, there have been more than 2,000 wetland sites designated as internationally significant, with 37 of these in Canada.



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BC Coastal Waterbird Survey

12-Year Trends Results:

1999-2011 by Karen Barry

The British Columbia Coastal Waterbird Survey (BCCWS) is a citizen science long-term monitoring program aimed at assessing population trends and identifying habitat use patterns of BC's wintering waterbirds using coastal and inshore marine areas. September 2012 marked the start of the 14th season of this program. Since it first began in September 1999, over 500 volunteers have surveyed more than 300 sites throughout BC. The database now includes over 17,400 surveys - a very impressive and successful Citizen Science effort thanks to a dedicated team of volunteers!

Recently, we analyzed monthly counts from more than 200 sites within the Strait of Georgia, where the data are most comprehensive, in order to estimate population indices and assess trends in 57 waterbird species during the winter period from 1999/2000 to 2010/2011. A power analysis was also conducted to validate the survey design. The complete results are published in the British Columbia Field Ornithologists' journal *British Columbia Birds* (volume 22). The article will be publicly available in early 2013 at www.bcfo.ca. The following provides a summary of some of the findings.

The power analysis results indicated that the survey is performing well and able to detect annual changes of 3% or less for populations of 29 waterbirds of a wide variety of guilds. This means that the survey is generating credible trend information for a wide range of species and it is consequently becoming an increasingly respected source of trend information by management agencies and scientists.

The 12-year trends analysis showed that 32 species have stable populations (no significant trend), 22 species showed significantly declining trends, and just three species showed significantly increasing trends (see Table 1). Among those that showed a declining trend were several fish-eating birds, including Western and Horned Grebes, Common, Red-throated and Pacific Loons, and Rhinoceros Auklet. As well, we found that several sea ducks (Black and White-winged Scoters, Long-tailed Duck, Barrow's Goldeneye, Harlequin Duck), two shorebirds (Dunlin, Surf-bird), and Great Blue Heron appear to be undergoing declines. In the stable/no trend group are 20 species for which the Strait of Georgia is of global or continental conservation importance: Red-necked Grebe, Brandt's, Double-crested and Pelagic Cormorants, American Wigeon, Mallard, Northern Pintail, Surf Scoter, Bufflehead, Common Goldeneye, Common and Red-breasted Mergansers, Trumpeter Swan, Brant, Black Oystercatcher, Black Turnstone, Black-bellied Plover, Mew Gull, Thayer's Gull and Marbled Murrelet. This is encouraging news indicating that many of the Salish Sea's waterbirds appear to have a solid population base here.



Marbled Murrelet (A. Jensen)



Harlequin Duck (T. Thormin)



Yellow-billed Loon (R. Cathers)

Table 1. Coastal Waterbird Survey Trends Results (1999-2011): For each species, arrows indicate statistically significant increasing (green) or decreasing (red) trends. The blue symbol (~) indicates no statistically significant trend. The annual rate of population change is given in percent (%/year).

Trend	Species	Percent Change (%/year)
↓	Red-throated Loon	-9.3
↓	Pacific Loon	-6.3
↓	Common Loon	-2.8
↓	Horned Grebe	-2.6
~	Red-necked Grebe	-2.9
↓	Western Grebe	-16.4
~	Brandt's Cormorant	-0.6
~	Double-crested Cormorant	-0.4
~	Pelagic Cormorant	1.8
↓	Great Blue Heron	-3.0
↑	Canada Goose	3.8
~	Brant	-4.7
~	Mute Swan	1.2
~	Trumpeter Swan	-5.5
~	Gadwall	-7.3
~	Eurasian Wigeon	5.7
~	American Wigeon	1.2
~	Mallard	-1.1
↑	Northern Shoveler	19.7
~	Northern Pintail	-2.6
↓	Green-winged Teal	-7.9
↓	Greater Scaup	-9.8
↓	Lesser Scaup	-14.5
↓	Canvasback	-22.9
~	Ring-necked Duck	4.7
↓	Harlequin Duck	-2.6
~	Surf Scoter	-0.7
↓	White-winged Scoter	-7.6
↓	Black Scoter	-19.2

Trend	Species	Percent Change (%/year)
↓	Long-tailed Duck	-7.0
~	Bufflehead	-0.7
~	Common Goldeneye	-0.2
↓	Barrow's Goldeneye	-4.3
~	Common Merganser	1.7
~	Red-breasted Merganser	-0.6
↓	Bald Eagle	-1.8
~	Northern Harrier	-4.3
~	Red-tailed Hawk	5.7
~	Peregrine Falcon	-7.5
~	Black-bellied Plover	-4.0
~	Killdeer	-2.6
~	Black Oystercatcher	0.9
↓	Greater Yellowlegs	-10.5
~	Black Turnstone	0.4
↓	Surfbird	-18.1
~	Sanderling	-7.7
↓	Dunlin	-8.9
↓	Bonaparte's Gull	-12.9
~	California Gull	-8.9
↓	Glaucous-winged Gull	-4.3
~	Mew Gull	-2.5
~	Ring-billed Gull	-0.9
~	Thayer's Gull	-4.1
~	Common Murre	3.8
↑	Pigeon Guillemot	21.7
~	Marbled Murrelet	-4.4
↓	Rhinoceros Auklet	-17.6



Coastal Waterbird Survey Highlights & 12-Year Trends Results: 1999-2011 (continued)

From 1999-2011, we found that wintering Western Grebe in the Strait of Georgia are continuing to decline. This species is a specialist mid-water piscivore that overwinters along southern portions of the BC coast, with largest numbers recorded at the Oyster River estuary and Fraser Estuary–Boundary Bay. Christmas Bird Count data and surveys in Puget Sound show that a dramatic decline in Western Grebe has occurred across the northern part of its winter range over the past 40 years. Significant breeding colony declines and low reproductive success have been recorded in central, northeastern and northwestern Alberta. This is a major conservation concern receiving attention from the Committee on the Status of Endangered Wildlife in Canada. At the same time, Western Grebe appear to be increasing in California so it seems that wintering Western Grebes may be shifting their distribution south. Many researchers are working to understand the underlying causes of Western Grebe trends and changes in distribution.

Like Western Grebe, many other fish-eating waterbirds are declining in parts of the Strait of Georgia including Common Loon, Pacific Loon, Horned Grebe and Rhinoceros Auklet, all of which prey on small, mid-water schooling fish. Pacific Herring and Pacific Sand Lance are the two most important forage fish prey, particularly now that many stocks of other forage fish, such as Eulachon, have collapsed. At the same time, significant changes have occurred in abundance and distribution of herring egg and juvenile stages, the two most important herring prey types for marine birds in the Salish Sea. These changes in prey availability most certainly affect the abundance and distribution of our wintering waterbirds.

Unlike previous trends analysis we conducted, we found that Bald Eagle are undergoing a slight declining trend (-1.8% per year) from 1999-2011. This raptor is widely distributed along the BC coast with highest numbers in late fall and early winter when birds gather to feed on salmon runs, then switch prey and feed more on waterfowl and other birds in the early winter, re-distributing again to congregate at herring spawn sites in spring. The Bald Eagle is an important top predator in BC preying on many waterbird species, including ducks, grebes, herons, cormorants, gulls and alcids, as well as scavenging fish, marine mammals and birds. The threat implied by the presence of eagles can affect the distribution of many other bird species.

Over the previous two centuries, Bald Eagles have undergone dramatic population fluctuations and were very rare in the mid- to late 1900s in the U.S. due to human persecution and then impacts from pesticides. However, populations have since rebounded with Christmas Bird Counts in BC showing significant increases of 4.5% per year. The regional Strait of Georgia population may now have reached a plateau, and the slight decline indicated by BCCWS data may represent a natural population readjustment. The species' role as a top predator and disturbance agent means tracking its numbers will be important to interpret abundance data for other birds and fish.

Although gulls can be challenging to identify and to count in large numbers, they are very important components of BC's coastal ecosystem. A large proportion of the global population of Thayer's Gull, which breeds in the Canadian Arctic and Greenland, winters in the Strait of Georgia and less commonly on the central–north coast. High numbers were consistently recorded on the Survey at the Oyster River estuary. No significant trend was apparent from the Survey from 1999–2011. There is little information available from elsewhere to understand population trends in this species. The BCCWS may be one of the only monitoring programs regularly collecting population data on Thayer's Gull. Challenges in separating Thayer's from some of the other large gulls mean that many gulls recorded on the Survey are assigned to the “unidentified gull” category, so some potential data may be lost. We have developed Identification Guides for adult gulls and juvenile gulls which are freely available on the BCCWS website, under Resources (www.birdscanada.org/volunteer/bccws/index.jsp).



Glaucous-winged Gull on Mitlenatch Island (K. Barry)

Unlike Thayer's Gull, Glaucous-winged Gull is a widespread and abundant resident of the BC coast that is undergoing a significant decline (-4.3% per year) from 1999–2011. It is a Pacific Coast endemic that forms part of a complex of similar species circling the northern hemisphere. Largest numbers of Glaucous-winged Gull were consistently recorded on the Survey on the east coast of Vancouver Island, near Nanaimo, Parksville, Big Qualicum River estuary, Baynes Sound and Campbell River, especially during March coincident with herring spawn events. Christmas Bird Count data from the Salish Sea and data from Puget Sound also suggest declines for Glaucous-winged Gulls. In the Strait of Georgia, nesting pairs have decreased by about 31%. Furthermore, many of the small islands that previously supported nesting gulls have been abandoned. These decreases may be due to increased disturbance levels and predation by Bald Eagles or reduced food quality. The consistent, continuing declining trend is a major cause for concern, perhaps more so for this species whose range is confined to the Pacific Northwest compared to more widespread gull species.

Although our BCCWS trends results indicate a significant decline for Rhinoceros Auklet from 1999-2011 (-17.7% per year), long-term breeding surveys on several colonies on the north and central coast of BC indicate that most Rhinoceros Auklet colonies are stable or increasing, except for the Pine Island colony. Most of the North American population breeds on a small number of islands on the BC coast and adjacent parts of Washington and southeast Alaska. This species overwinters in the southern and central coasts of BC and further south along the Pacific coast. Large groups of Rhinoceros Auklet were observed on the Survey in the Johnstone Strait area and around Victoria. Numbers of Rhinoceros Auklet appear to have increased in Hecate Strait from 1984 to 1994, but predation by introduced raccoons may have impacted breeding colonies on some islands off Haida Gwaii. Because Rhinoceros Auklets are an open water marine species, the shoreline-based BCCWS may not be the best monitor for this alcid.

A close relative of Rhinoceros Auklet, Marbled Murrelet is endemic to the North Pacific and is the only alcid to nest in trees in mature coastal forests. It occurs in inshore waters year-round along most of the BC coast. Surveys identified concentrations along the Sunshine Coast and in Johnstone Strait. No significant trend was apparent from the Survey over the 1999–2011 period, but this murrelet's diminutive size makes it difficult to see when it is offshore. It is listed as Threatened under Canada's Species at Risk Act and globally as Endangered (IUCN 2011) based on loss of old growth forest breeding habitat. Major declines have also been reported in Puget Sound. The BCCWS may not be the best survey for assessing regional trends in Marbled Murrelet, but it may provide useful local insights to the wider picture of its status in coastal BC.

One species showing an increasing trend that is prompting some concern is Canada Goose. Introduced Canada Geese overwinter in this area and are becoming increasingly abundant and can cause considerable damage from grazing and trampling coastal marshes. In many areas, this results in erosion of native plants, leading to invasive grass colonization and domination of short plant communities due to excessive nitrogen from faeces.

Understanding which factors may be driving species declines or increases is challenging, and complicated by the possibility that some species showing apparent declines may be re-distributing away from the areas being surveyed. Changes in behaviour, for instance aggregating offshore rather than inshore due to predation risk by Bald Eagles, may have important implications for the interpretation of BCCWS trend data. It is also important when interpreting the BCCWS 12-year dataset to look at longer time series data, like Christmas Bird Counts and other regional surveys. Future work will involve combining survey counts with detailed habitat data to identify habitats used by coastal waterbirds in different seasons (e.g., moult periods, wintering grounds, and spring staging areas), and possibly to predict species distributions in unsurveyed areas.

Welcome New Volunteers

A hearty thank you to all volunteers, past and present, who contribute to the BC Coastal Waterbird Survey and a warm welcome to new participants:

David Bedry, Frank Bosco, Jenny Clark, Gord Curry, Graham Ford, Wesley Greentree, Jill Hawkins-French, Sue Horner, Denis Horwood, Kristen Lambke, Loys Maingon, Kathryn Manry, Cate McEwan, Joe McKenna, Remi Odense, Steven Roais, Donna Ross, Margie Shepherd, Roger Simms, Peggy Sowden & David Thomson, Terry Thormin, Lea Walsh and Lisa Zervakis.



BC Beached Bird Survey: 2011 Summary

by Karen Barry

The BC Beached Bird Survey (BBS) is designed to collect baseline information on the causes and rates of waterbird mortality. This program relies on volunteers who conduct monthly beach walks looking for seabird carcasses that have washed up onshore. There are now over 70 volunteers involved in this program and in 2011, more than 400 surveys were completed covering a total of 770 km of BC's coastline! Canadian Wildlife Service staff who conduct annual monitoring on Triangle Island, which is a very important breeding colony for Cassin's Auklets, Tufted Puffins, Common Murres, Rhinoceros Auklets, Pelagic Cormorants, Leach's and Fork-tailed Storm-petrels, and more, are contributing to the Beached Bird program by conducting beach surveys when they can during their summer field season. Opportunistic surveys in remote locations like this are a very valuable addition to the database!



Horned Grebe, found at Iona
(G. and T. Mitchell)

In 2011, a total of 85 beached waterbirds from 17 different species were found (see Table next page). The most common species was Glaucous-winged Gull and Unknown species, both making up 18.8% of the total. This was followed by Unknown Gull, comprising 16.5%.

In 2011, the most active regions for beached birds included the west coast of Vancouver Island and the White Rock-Blackie Spit area. The highest number of beached birds found on a single survey occurred in April 2011 on the Beecher Street - Blackie Spit route when 7 carcasses were found (Andrew & Alison Prentice). On the west coast, beached birds were regularly found at Combers Beach (Darlene Choquette), Schooner Cove (Robert & Mara Love; Darlene Choquette) and Chesterman's Beach (Robert & Mara Love). Other areas where a few beached birds were reported in 2011 included Peach Arch to Little Campbell River bridge (Stan Olson), White Rock Pier West (Leona Breckenridge) and Iona (Eve & Ildiko Szabo). On Vancouver Island, carcasses were found frequently at Goose Spit (Art & Sue Martell; Bill Stewart), Cape Lazo (Malcolm Jolly) and French Creek North (Marilynn Futer & Bill Campbell). A total of 4 carcasses were found from 3 surveys on Triangle Island in 2011. Despite the high activity in many locations, most volunteers do not find any dead birds on their surveys. Nevertheless, "zero data" is perfectly normal and provides very important baseline information!



Mallard wing, found at Blackie Spit
(A. Prentice)

Another important type of information that volunteers report from their surveys is observations of oiling, either on the beach or on carcasses. In 2011, no oil was reported on beaches and no oiled birds were found on regular Beached Bird surveys - good news!

With assistance from Beached Bird volunteers, we continue to submit intact carcasses to the Canadian Wildlife Service and the Ministry of Agriculture & Lands' Animal Health Lab to conduct post-mortem exams and identify cause of death. In 2011, BBS volunteers collected 13 fresh carcasses which were submitted to the lab. Results show that waterbirds died from a variety of causes such as disease, predation, trauma, and drowning/fisheries bycatch. Although many unanswered questions remain, we are gaining a better understanding of the causes of waterbird mortality and the incidence of oiling through this Citizen Science monitoring program.



Glaucous-winged Gull, found in Comox
(D. Robinson)

Total Carcasses Found by Species and Region in 2011

Region	North Coast	S. Vancouver Island & Gulf Islands	West Coast Vancouver Island	Boundary Bay	Lower Mainland	Sunshine Coast	TOTAL BIRDS	PERCENT (%)
Common Loon		1		1	1		2	2.4
Horned Grebe							1	1.2
Red-necked Grebe		1		1			2	2.4
Western Grebe				1	1		2	2.4
Northern Fulmar			1				1	1.2
Double-crested Cormorant				5			5	5.9
Unknown Cormorant					1		1	1.2
Great Blue Heron		1					1	1.2
Mallard				1			1	1.2
Surf Scoter		1					1	1.2
White-winged Scoter				4			4	4.7
Unknown Scaup				1			1	1.2
Bufflehead		2			1		3	3.5
Unknown Goldeneye			1				1	1.2
Bald Eagle		1					1	1.2
California Gull					1		1	1.2
Glaucous-winged Gull	1	4	1	9		1	16	18.8
Unknown Gull			1	12	1		14	16.5
Common Murre		1	4				5	5.9
Rhinoceros Auklet	1		3				4	4.7
Cassin's Auklet	2						2	2.4
Unknown species		2	12		2		16	18.8
TOTAL BIRDS	4	14	23	35	8	1	85	100.0

Welcome New Volunteers

A hearty thank you to all volunteers, past and present, who contribute to the BC Beached Bird Survey and a warm welcome to new participants:

Robert Auger & Anne Whyte, Barbara Burnside, Catching the Spirit Youth Group, Linda Cole, Merrily Corder, Stu Crawford, Graham Ford, Sally & Al Frost, Nigel & Jan Hurford, Erika Justmann, Andy Kaye, Al Kirkley, Don & Vanessa Kramer, Ian Macdonnell, Mike McGrenere, Sharon McInnes, Gerry McKeating, Mitlenatch Island Stewardship Team, Lilliana Paz, Elin Price, Catherine Soper & Dan Grima, Derek & Gayle Tedder, Jocelyn Verreault, Janet Woolgar and Anita Watts.



A collaborative project led by PRBO Conservation Science

Partners & Collaborators

- U.S. Forest Service (United States)
- PRBO Conservation Science (United States)
- Bird Studies Canada (Canada)
- Asociación Calidris (Colombia)
- Centro Neotropical de Entrenamiento en Humedales or CNEH-Internacional and Servicio Nacional de Areas Protegidas por el Estado (SERNANP) (Peru)
- Aves y Conservacion (Ecuador)
- Canadian Wildlife Service (Canada, Atlantic coast of South America)
- Grupo Aves del Noroeste (GANO), Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE), Mexico)
- Audubon Panamá (Panama)
- Manomet Center for Conservation Sciences (United States, Atlantic and Caribbean coasts)
- BirdLife International (Central and South America)
- Western Hemisphere Shorebird Reserve Network (WHSRN)

Migratory Shorebird Project: Connecting Communities Across the Americas

The Migration Phenomenon

Each year, millions of shorebirds migrate in waves from their wintering grounds along the Pacific and Caribbean coasts to their nesting grounds in Alaska and northern Canada, stopping at just a few rich feeding spots along the way.

About the Migratory Shorebird Project

The largest ever coordinated survey of wintering shorebirds on the Pacific Coast of the Americas, the Migratory Shorebird Project, initiated in 2011, is a cooperative effort of 14 conservation science organizations (and counting) led by PRBO Conservation Science to conserve shorebirds and wetlands from Alaska to Peru.

Goals of the Project

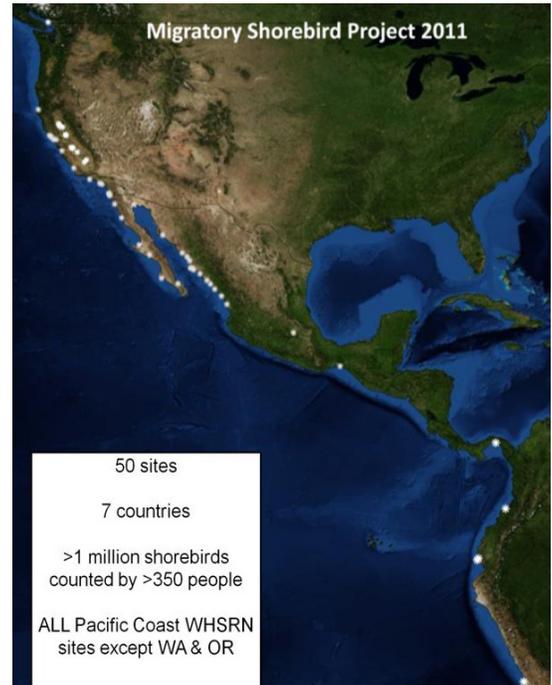
1. Find out where shorebirds go throughout a year, how many there are and how this changes through time at two levels: Individual “site level” (e.g. San Francisco Bay, Panama Bay) and range-wide.
2. Determine which research questions are most important to ask and how to ask and answer them using scientific methods in order to figure out what factors are influencing shorebird populations the most.
3. Make recommendations and take action to conserve and protect shorebirds and wetlands at the flyway through site level, based on the information collected, compiled and analyzed from our shorebird population monitoring and research.

What Partners Are Already Doing

- Coordinating the study of over 1 million shorebirds at more than 2,000 sites, in 7 countries, on 2 continents, making this the largest ever coordinated survey of wintering shorebirds on the Pacific Coast of the Americas.
- Using the study to evaluate impacts of habitat loss, pollution, and climate change on shorebirds.
- Suggesting conservation actions to regional and international partners.
- Educating people about the importance of wetlands for people and shorebirds.
- Training volunteers in shorebird research – more than 350 participants so far.
- Raising money to support the work of each partner. Leveraged initial investment to raise \$500,000 in additional grants and in-kind support.



Western Sandpiper Flock (T. Middleton)



Become Part of the Migratory Shorebird Project

Join this ambitious 10-year, multi-partner research project to help guide shorebird conservation. You will be part of the team protecting shorebirds and wetlands from Alaska to Peru through research for conservation. We need your help, as a scientist, a volunteer scientist, an educator, or funder.

How to Get Involved

Data from monthly counts conducted by BC Coastal Waterbird Surveyors will be included in the Migratory Shorebird Project. The project will potentially be looking for volunteers with skills in shorebird surveys, flock estimation and identification training, and potentially other skills relevant to local, site-level conservation, including conservation and habitat management and media/ outreach work, to travel to sites in Central and South America to help build local capacity to conduct shorebird monitoring and conservation work

For more information: Visit www.migratoryshorebirdproject.org or contact the BC Bird Studies Canada office at BCprograms@birdscanada.org or 1-877-349-2473

Update on Plastics Ingestion Research in BC Marine Birds

by Karen Barry & Stephanie Avery-Gomm

In the 2010 issue of the BC Coast BirdWatch newsletter, we reported preliminary results from a plastics ingestion study led by Stephanie Avery-Gomm, a graduate student at UBC, on Northern Fulmar collected by BC Beached Bird survey volunteers from Tofino. Since then, the study was expanded to include Northern Fulmar from Oregon and Washington, which were examined to assess the amount and type of plastics they may have ingested. In September 2012, the complete study entitled “Northern Fulmars as Biological Monitors of Trends of Plastic Pollution in the Eastern North Pacific” was published in the scientific journal, *Marine Pollution Bulletin* (volume 64). The study found that over 92% of the 67 fulmars examined from the North Pacific had ingested an average of 36.8 pieces, or 0.385 g of plastic, which is considerably higher than reported from previous decades (see graph next page). Predominantly user plastics were consumed, such as fragments, sheets, rubber, sponge, balls of plastic fibers, and Styrofoam.

Northern Fulmar are procellariid seabirds and like many petrels (i.e., Sooty Shearwaters, albatross), they forage exclusively at sea, have vast migratory ranges and a non-selective surface foraging ecology that makes them prone to ingest plastic. As a result, the stomach contents of a single Northern Fulmar provide a quantitative ‘snapshot’ sample of small-sized plastic pollution from a large offshore area (100s of km²). In the North Sea, the mass of plastic ingested by beached Northern Fulmars is used as an indicator for tracking plastic pollution. Therefore, Northern Fulmar could be a cost-effective and standardized biological indicator to monitor trends in plastic pollution here in the North Pacific as well.

The results of the study suggest that high levels of plastic ingestion found in Northern Fulmar from the eastern North Pacific are similar to levels reported for fulmar from the historically polluted North Sea, indicating that high levels of plastic pollution occur in both regions.

This leads to another important question: Are marine birds that reside primarily in the nearshore coastal areas of BC also ingesting plastic? To answer this, Stephanie examined stomach contents from 115 specimens of 17 other marine-associated bird species, including Rhinoceros Auklets, Common Murre, Tufted Puffins and many others. So far, low amounts of plastic have been found in other species’ stomachs, although in many species only a few birds have been examined. This suggests that either plastic ingestion is low, or that stomach contents of beached birds is not a suitable method for monitoring plastic ingestion in these other species (i.e., some species readily regurgitate indigestible items like plastic).

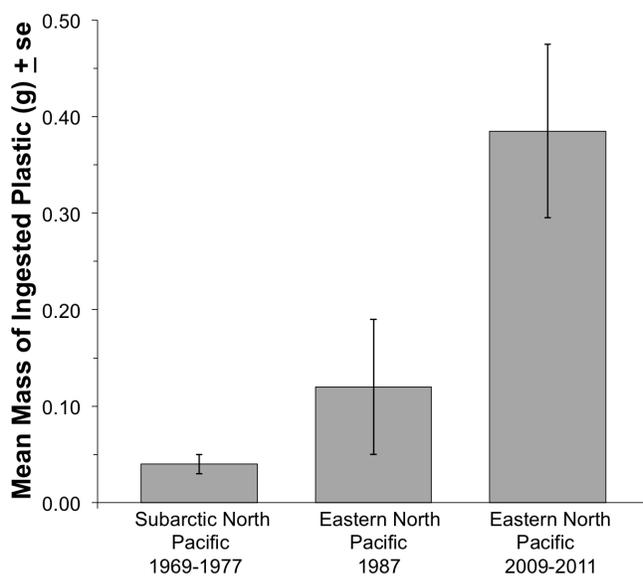
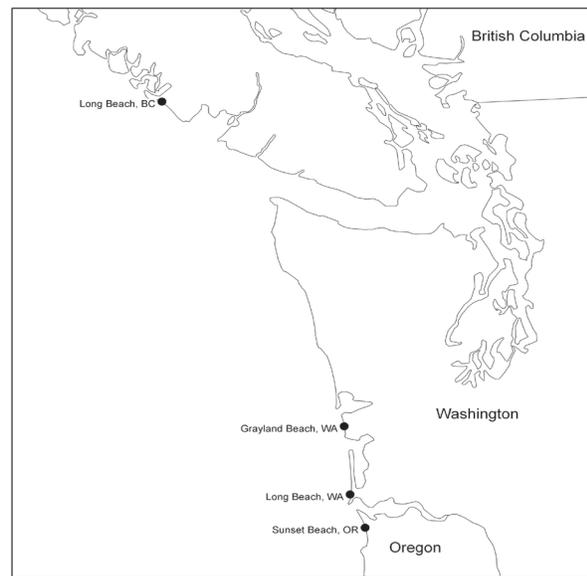
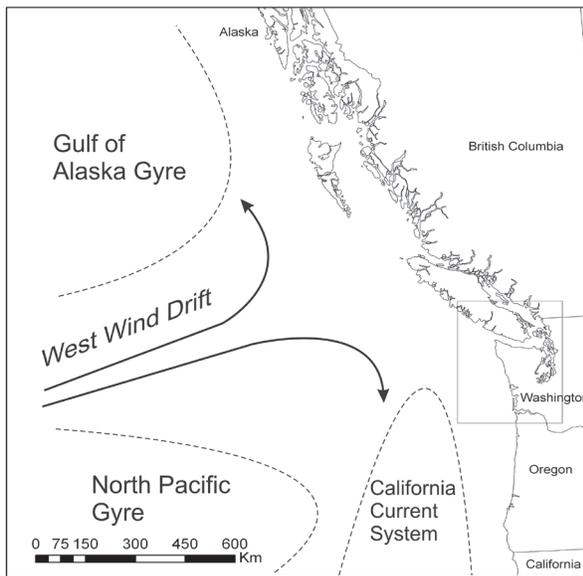


Northern Fulmar found on Chesterman’s Beach, Tofino by Beached Bird Survey volunteers (R. Love & M. Love)

Larger sample sizes are needed to fully understand the pervasiveness of plastic ingestion among BC's coastal marine bird species, and to identify vulnerable species. We are very grateful to all the volunteers who are assisting with the carcass collection program of the Beached Bird program so that we may continue to investigate the level of plastic ingestion in BC's marine birds.

Further Reading:

Northern Fulmars as Biological Monitors of Trends of Plastic Pollution in the Eastern North Pacific. 2012. Stephanie Avery-Gomm, Patrick D. O'Hara, Lydia Klein, Victoria Bowes, Laurie K. Wilson, Karen L. Barry, *Marine Pollution Bulletin*, Volume 64, Issue 9, Pages 1776–1781.



Top: Maps showing the current systems that can transport plastic in the eastern Pacific and 4 locations where Northern Fulmar were collected for this study.

Bottom: Average amount of plastic found in birds from previous sampling in the Pacific was lower than that from the current study (2009-2011).

On the lookout for invasive Cordgrass, *Spartina* by Karen Barry & Kathleen Moore

Spartina are aggressive invasive plant species that originate from England, Chile and eastern U.S, which can invade intertidal zones such as mudflats and beaches in the Pacific Northwest. In 2003, *Spartina anglica* was found in the Fraser River Delta for the first time raising concerns about the spread of this invasive cordgrass. Two other *Spartina* species have since been discovered in BC: *S. densiflora* (Vancouver Island) and *S. patens* (Burrard Inlet). These other two species tend to establish on shorelines with coarser materials in higher intertidal zone.

The impacts of *Spartina* species include: conversion of mudflats to monoculture stands, loss of habitat for waterbirds and fish, accretion of sediments, and modification of drainage patterns. Intertidal areas in Washington dominated by *Spartina* have exhibited large declines in the abundance of shorebirds and waterfowl.

The British Columbia *Spartina* Working Group (BCSWG) has been formed to work toward the eradication of non-native, invasive *Spartina* species (*S. anglica*, *S. densiflora*, and *S. patens*) along the BCCoast. A monitoring program included mapping approximately 35 km in the Fraser Delta, 18 km of shoreline on the East Coast of Vancouver Island in Baynes Sound and 30km of shoreline near Tofino (by kayak - English Cove, Bedwell Sound).

Results from the 2011 inventory show that the abundance and density of *Spartina anglica* in Boundary Bay and Roberts Bank has continued to increase from 2007 and even more rapidly on Roberts Bank since 2010. *Spartina* was not found on the Tofino mudflats and *S. densiflora* is expanding its range in Baynes Sound.

Volunteers or naturalists who are regularly out in estuaries and mudflats are asked to keep an eye out for *Spartina*. It's important to know if it is spreading to new areas. Scientists are also interested to know whether any *Spartina* species are used by birds. If you see *Spartina*, please note the location, date and contact the Community Mapping Network, rknight@telus.net. For more information and distribution maps, see www.spartina.ca.

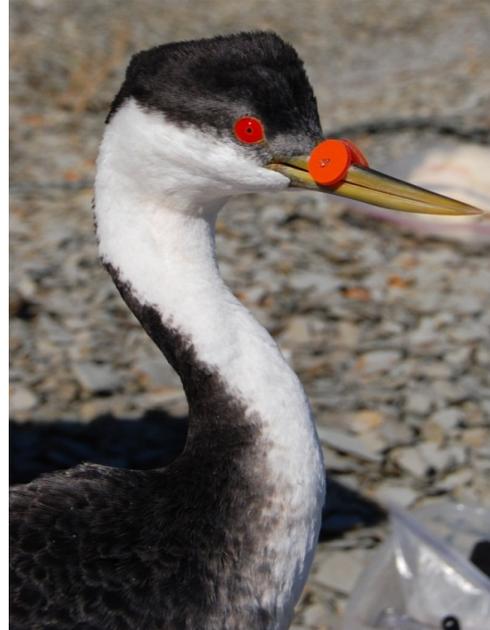
Distinguishing Features:

- Perennial, salt-tolerant grass
- Bright green to grayish green
- Round, hollow stems
- Fine hairs at the ligule, which is a thin outgrowth at the junction of leaf



Spartina from Boundary Bay Regional Park
(L. Shiner)

Western Grebe Research Project: Have You Seen These Birds?



Declines in British Columbia's Western Grebe wintering numbers have prompted research on migratory connectivity and wintering distribution. Scientists from Simon Fraser University and Environment Canada marked Western Grebes on their breeding grounds in central Canada with a combination of plastic nasal disks (orange or white) and pink dye on the neck and cheeks. The pink dye may be faded or completely gone by winter.

How to Help:

If you see a bird with nasal disks and/or pink dye, please contact **Dan Esler (desler@sfu.ca)** or **Eric Palm (epalm@sfu.ca)** and provide the date, location of the bird and the approximate number of Western Grebes observed in the area. Thank you!



Environment
Canada



Beached Bird Surveys in Maplewood Conservation Area

by Catherine Soper, Ecologist at Klohn Krippen Berger and
BC Beached Bird Surveyor

Myself, Catherine Soper, and my partner, Dan Grima are local North Vancouver residents and birding enthusiasts! We first took part on a Beached Bird survey last winter by helping out on a survey route in Ambleside Park, West Vancouver. We really enjoyed the experience and so decided to find our 'own' beach to survey closer to home. We approached Maplewood Conservation Area and they loved the idea.

We conducted our first survey at Maplewood Flats on July 31, 2012. We searched the wrack line for bird carcasses in the early evening, just after high tide. The entire shoreline was searched, except for the sensitive mudflats and salt marsh. As we went, we recorded beach conditions (size of the wrack line and amount of driftwood), information that is important in understanding local deposition patterns, and the presence of any oil, or oiled or entangled wildlife.

Thankfully no traces of oil, or oiled or entangled birds were found, but we did find a dead adult Double-crested Cormorant. The carcass had not decomposed much so identification was easy, but just to be sure we measured the tarsus, bill and wing and compared our results to the Beached Bird Field Guide, produced by COASST, which is supplied to every Beached Bird volunteer as part of the survey kit. We then attached a uniquely numbered tag to the bird to ensure the carcass is not recounted.

At the end of August, we went back out for our second survey and the Double-crested Cormorant was nowhere to be seen, but instead we found a beached Corvid. By the third survey in September, the Corvid had also disappeared. During the fourth survey in October, we found a beached gull. It turns out that Maplewood Flats is an interesting spot for beached birds. I wonder what we will find on our next surveys!



Catherine and Dan examine a carcass found at Maplewood (D. Grima)



Double-crested Cormorant found at Maplewood (D. Grima)

USEFUL WEB RESOURCES

Puget Sound Seabird Survey

Science by citizens, not just citizen science



Puget Sound Seabird Survey

www.seabirdsurvey.org

The Puget Sound Seabird Survey (PSSS) is a citizen-science survey managed by Seattle Audubon to gather data on wintering seabird populations in Puget Sound. The program is very similar to our BC Coastal Waterbird survey - it involves monthly shore-based assessments of seabird density on more than 2,400 acres of nearshore saltwater habitat. The website includes information for volunteers as well as summaries of waterbird abundance and species lists in Puget Sound.



SEABIRD ECOLOGICAL ASSESSMENT NETWORK

Seabird Ecological Assessment Network

www.tufts.edu/vet/seanet/

The Seabird Ecological Assessment Network (SEANET) is a citizen science program initiated by the Tufts Center for Conservation Medicine in 2002. SEANET volunteers conduct year-round beached bird surveys in order to identify and record information about bird mortality along the east coast of the United States. The project has expanded to beaches throughout New England, New York and New Jersey and more recently, to the southeastern US, with beaches in South Carolina, Georgia and Florida. The latest news and updates are on the SEANET Blog.



B.C. Cetacean Sightings Network

www.wildwhales.org

Wild Whales is the home of the B.C. Cetacean Sightings Network, a conservation and research program of the Vancouver Aquarium, in partnership with Fisheries and Oceans Canada (DFO). The group collects sightings of all cetaceans (whales, dolphins and porpoises) and sea turtles from British Columbia and surrounding waters. Using an online form, anyone can enter their sightings and then review a summary of sightings and access resources to help identify whales and dolphins.

Important Bird Areas and Local Planning

by Karen Barry



In 2012, Bird Studies Canada began a one-year project funded by the Real Estate Foundation of BC to strengthen local governance and land-use decision making with respect to conservation values,

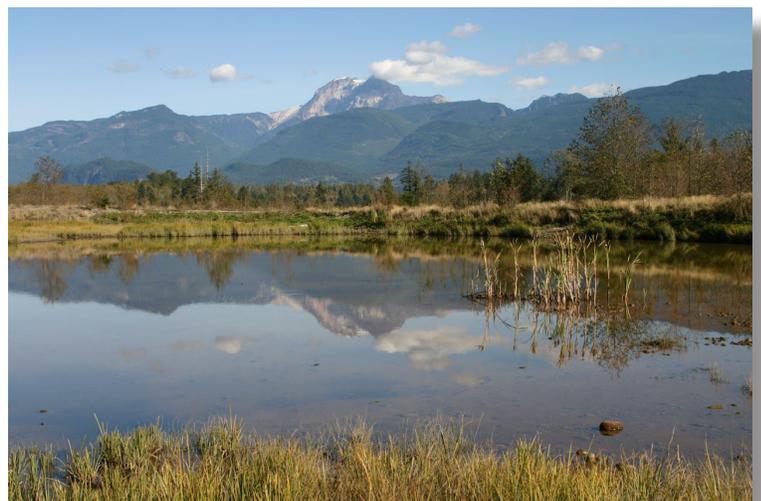
targeting coastal areas of eastern Vancouver Island and the Lower Mainland where high human use overlaps with Important Bird Areas (IBAs).

Although the IBA designation is non-regulatory, it can be very beneficial to local governments because of its global reputation and it can help prioritize and/or further support local government conservation initiatives or identify sensitive areas for possible Development Permit Area bylaws. In addition, bird monitoring data can be used in site-level planning and included in local habitat atlases. One of the first outcomes from this project was the addition of IBA information and other bird conservation guidance to the revised provincial land development guidelines "Develop with Care 2012: Environmental Guidelines for Urban and Rural Land Development in British Columbia." These Guidelines were jointly prepared by the BC Ministry of Forests, Lands and Natural Resource Operations and the Ministry of Environment. The Guidelines apply province-wide and are designed to be used by local governments, planners, engineers, public works staff, developers, consultants, architects, and owners, real estate agents and others involved in land development decisions.

We have been working with a number of local governments to incorporate information about IBAs and bird conservation objectives into a variety of planning and policy initiatives such as Official Community Plan (OCP) updates. An OCP outlines the longer term vision for a community and includes objectives and policies to guide decisions on planning and land use management within the area covered by the plan. An OCP can also designate development permit areas for several reasons, including environmental protection.

We have submitted recommendations on a draft OCP update to the Cowichan Valley Regional District for the Cowichan Bay area, which overlaps the Cowichan Estuary IBA. Other local governments to which we have submitted recommendations for their OCP updates include the City of Parksville, Richmond and Islands Trust, all of which have waterfront areas that overlap with IBAs. Although much work remains to be done for this project, the response has been very positive and local governments are interested to learn about IBAs and to explore ways to include bird conservation information in planning and policy initiatives. This project is a short-term pilot, however the outcomes and the process can be applied to local governments in other regions. We thank the Real Estate Foundation of BC for their support!

IBAs in British Columbia are a partnership program of:



Squamish Estuary IBA (C. Dale)



Coastal Waterbird Surveys in Viner River Estuary

Excerpted from the forthcoming book “Drawn to Sea” by artist and Coastal Waterbird Volunteer Yvonne Maximchuk, Echo Bay, BC



Billy Proctor, Theda and Yvonne Maximchuk (A. Meibaum)

In 2000, I heard about a “Citizen Science Project” to establish water bird identification and counting sites up and down the British Columbia coast for the purpose of quantifying and tracking population trends. I knew right away this was something I could do. I told Billy Proctor about it and he was interested

too. Now, like three or four hundred or so other bird lovers we count birds on the shoreline on the second Sunday of every month.

Our counting begins after Billy picks me up in his hard working blue speedboat. We leave my dock and run northwest towards the Burdwood Group. Right away we see Red-throated Loons, murrelets and murre, Red-necked Grebes, guillemots and gulls. Close to the seal haul-out on the south side of Denham Island there’s usually a number of Common Mergansers, Surf Scoters and more grebes. We know where to find the eagles now and which nests are active. Our area from the Burdwood Group and into Viner Sound Estuary supports an average of ten resident eagles, which is slowly increasing as newly hatched young mature and build their own nests.

Inside the lagoon-like protected center of the islands we’ll see pairs of Harlequin Ducks, the male just so beautiful! And the female, dun brown yet dignified. We’ve discovered the small rocks where the Black Turnstones chortle and flutter restively in large busy groups, nibbling at the mussels and barnacles of the low tide zone, skippety-hopping, running in short bursts, then as one, taking flight, their decorative black and white bars stitching herring-bone patterns in the sky as they wheel and turn en masse. Often we turn the motor off and drift close without them feeling threatened. In among the turnstones, the Surfbirds are almost indistinguishable unless we sit quietly and note that there are grayer birds with yellow legs in the mix; sometimes only one or two, sometimes as many as half the group.

Large flocks of Buffleheads (we call butterballs) puddle around the narrows near the Japanese Garden island where I painted a nude in the wilderness years ago. The males look like small sail boats from a distance, white low hull, black neck and white head as the sail. We circumnavigate the entire group of islands, peeking into the small bays to check for intensely mated pairs of Hooded Mergansers, or ‘hoodies’, I mark off each bird we count in the yellow note book. Leaving the end of the Burdwood Group where it faces up Tribune Channel we head for Penn Islet to see if the eagle is home, scanning for the large flock of Western Grebes that float with the tide on the more open sea. This flock fluctuates between two and nine hundred, an extraordinary number of birds. Often they’re elegant black and white necks are curled in a sleeping arc, but then up comes the head and the bright red eye searches for the source of the disturbance; us.

From Penn Islet, we aim for the shore of King Point, turning to run along the north side of Viner Sound. One heron lives on our 'beat' and it usually takes off with a squawk here. Just past him a precipitous cliff face is the right place for Pigeon Guillemot nesting. Often we see several of them bobbing in the water, watch their brilliant red legs when they dive or take off 'running on water'.

It's not difficult to identify uniquely patterned birds like Harlequin Ducks and Hooded Mergansers. The really tough ones are the gulls. Now I know when I see fifty or sixty bright white gulls perched on the stark branches of a dead fir tree it will be Mew Gulls and the smallest of the gulls on our beat, of course wear the solid black hood in summer, the appealing Bonaparte's Gull which almost always are seen in a group bobbing for tiny wriggling creatures or perched on small chunks caught in an eddy. Further into Viner, we see large flocks of Barrows Goldeneyes, one or two kingfisher, the odd Raven or pair gliding high. In Viner we've been thrilled to see an Osprey and a Sharp-shinned Hawk, and always in October hundreds of great Bald Eagles feasting on the chum salmon run. January and February we can count on the winter flocks of Trumpeter Swans residing at the river mouth because the lakes higher up the slopes of the valley are frozen over. This flock seems to be slowly increasing as well, we've seen up to five grey goslings in a group of eleven.

Some interesting results from keeping accurate records of birds on a regular basis are becoming evident now. Last year, I noticed some birds out front of the house that looked like Common Mergansers but weren't quite right. I went for the bird book and found the Red-breasted Merganser, a bird so uncommon here that I've only seen one once before. This winter, the tenth of the new century there's been over a dozen hanging about and puddling in the small bay in the corner here for weeks. We've also seen hundreds of Rhinoceros Auklets, a population which began with the advent of half a dozen or so that Billy spotted on his log salvage morning run one day and has expanded rapidly. These birds are feeding on a great influx of sand lance, and at dusk can be seen flying off down Cramer Pass, with six or eight shiny fish hanging out of their bills. They are bearing the fish to their young on the Storm Islands, forty miles away.



Black Oystercatcher (H. Reid)

We never see Oystercatchers on our bird count area as they occupy territory closer to the open ocean, but last winter I counted twenty-seven on the rock near Steep Island. The bird count data are valuable for many reasons. Data from our area and that of Sointula and

Telegraph Cove/Port McNeill were used to choose a time to raise the fuel barge sunk in Robson Bight, when the fewest birds possible would be impacted by a spill.

While some bird species are increasing or shifting their territory to follow food sources, others are declining and two I've really noticed are Pigeon Guillemots and Barrows Goldeneye. The bluff where hundreds of guillemots once bred is far quieter these days and even before I began formally counting birds the numbers of Barrow's Goldeneye were notable as well. Hundreds would arrive in the late fall and spend the winter entertaining me with their antics.

Our monthly waterbird count often brings other surprises: we've seen a swimming wolf, a rarely seen creature, bears in Viner estuary in spring and summer, seals, of course, porpoises, dolphins and whales, killer and humpback, minke and gray. Frequently, we surprise an otter or a mink, although never a raccoon anymore due to cougar predation and sometimes a curious sea lion will approach as we slow. For those who love to discover the hidden treasures and secret delights of anywhere wild and maybe some places not so wild, a bird count, while fascinating in and of itself, can be the opening gateway to a whole secret world.

Surveyor's Scrapbook



Pod of Orcas seen from Parksville (Ryan Cathers)



Bufflehead (Terry Thormin)



East Sooke scenery (Heather Reid)



Beached Bird training session on Mitlenatch Island (Krista Kaptein)

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