

Coastal waterbirds are in decline

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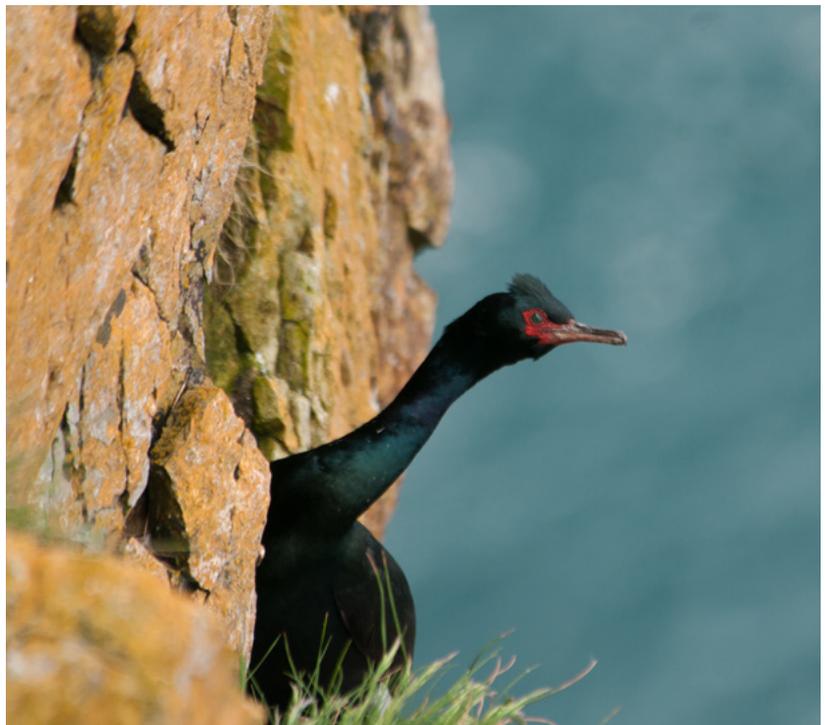
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What's happening?

British Columbia's diverse coastline is a mecca for marine birds. Not only does B.C. fall within the Pacific Flyway – a superhighway for migratory birds – the Salish Sea and areas along the North Coast are important staging habitat for numerous overwintering marine birds. Additionally, remote coastal islands provide breeding habitat for rarely seen birds that spend most of their time offshore like tufted puffin and ancient murrelets.



Pelagic cormorant. (Photo: Catherine Jardine)

Studies in the Salish Sea suggest that the abundance of wintering marine birds have been declining since the 1990s.^{1,2} Declines are most prominent among species that prey on forage fish and that do not breed locally. Although it is likely that there are many contributing factors to these declines, shifts in the availability of prey is thought to be driving these trends.^{3,4,5} Other factors that threaten our marine birds include oil spills, fisheries bycatch, human disturbance,^{8,9} habitat loss, and introduced predators.¹⁰

Until recently, the plight of marine birds and the habitats they depend on have been out of sight and out of mind for many British Columbians. However, multiple die-off events over the past few years have brought marine bird carcasses ashore on some of the province's

most popular beaches, highlighting the importance of the region to marine birds and the threats they face. For example, during the winter of 2014–2015, over 100,000 Cassin's auklets washed ashore along beaches from Haida Gwaii down to central California. Carcasses that were examined indicate that many of the birds died of starvation.^{11,12} More recently, during the summer of 2016 over 1,000 rhinoceros auklets washed ashore on beaches that ring the Juan de Fuca Strait and outer coast of Washington. The cause of death in this case was attributed to a bacterial infection. The bacteria involved are poorly characterized and have not been reported in seabirds before.¹³ Though the causes of these events differ, both likely signal larger environmental changes in our marine waters.



Tufted Puffin (Photo: Catherine Jardine)

Why is it important?

The high visibility of marine birds coupled with their role in coastal ecosystems means that many are excellent indicators of our marine environmental health.¹⁴ Many coastal communities have also long understood the importance of our coastal environments for marine birds from both an ecological and an economic perspective. With bird related tourism on the rise, municipalities across B.C. are embracing the concept and are striving to make their regions a destination for birders.^{15,16,17}

B.C. also has a global responsibility towards the stewardship of our marine birds as our coastal environment supports nationally and globally significant populations of marine birds. As such, Birdlife International has designated over 50 sites along B.C.'s coast as Important Bird and Biodiversity Areas (IBAs) – a global initiative that aims to protect and manage a network of sites that are significant for the long-term viability of bird populations.¹⁸



Black oystercatcher. (Photo: Catherine Jardine)

What is the current status?

The BC Coastal Waterbird Survey is a long-term monitoring program coordinated by Bird Studies Canada. This monthly survey involves more than 700 volunteer citizen scientists at over 200 sites along B.C.'s

coast (Figure 1) and aims to assess the annual changes and long-term trends in the population and distribution of coastal waterbirds.

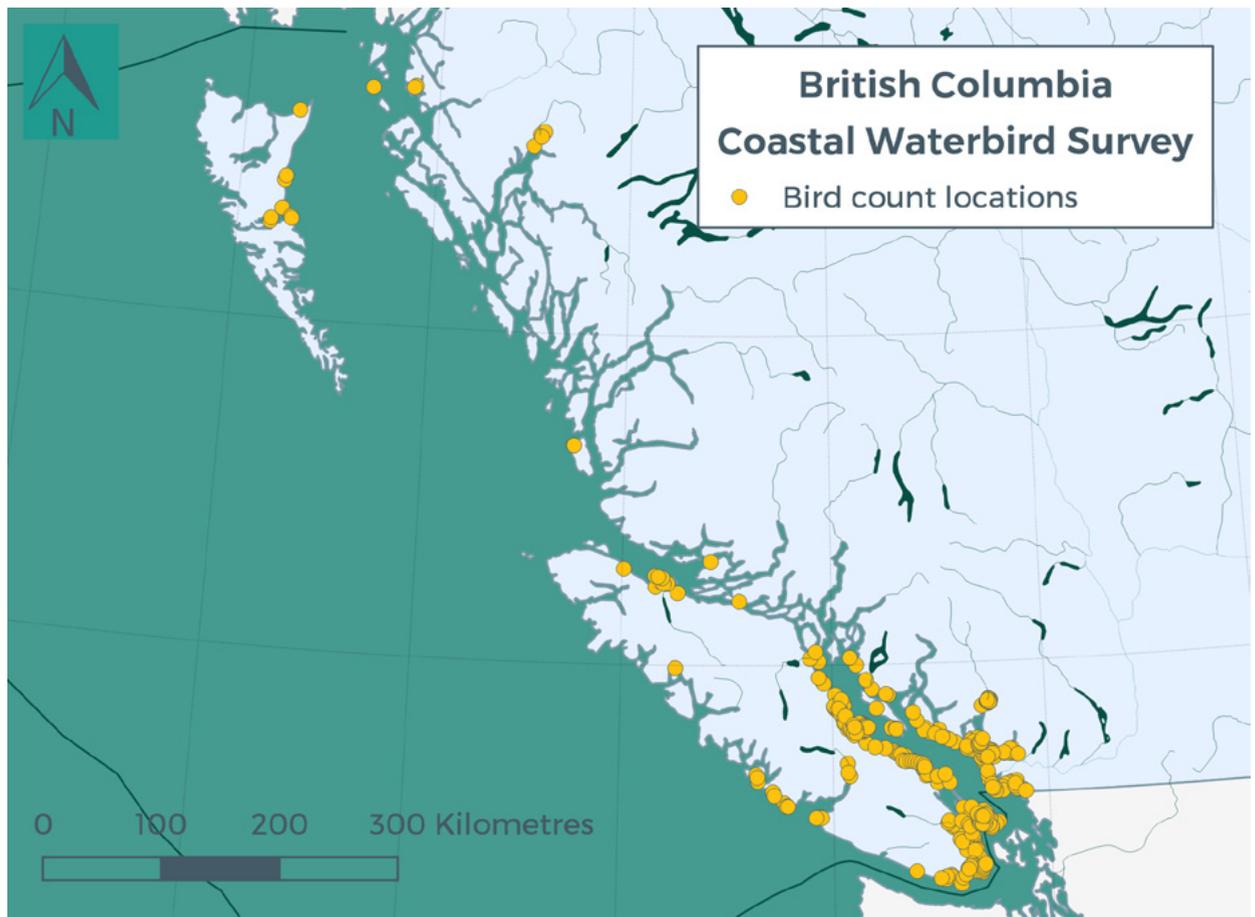


Figure 1. B.C. Coastal Waterbird Survey bird count locations.

Recent analysis of the 17-year dataset (1999–2016) showed significant changes for a number of marine birds (Figure 2).^{19,20} At the guild level (groups of species), all birds showed declining trends, however some individual species showed increasing trends, such as the Canada goose, black oystercatcher, and ring-necked duck. Species that showed the greatest declines included the western grebe, canvasback, black scoter, and dunlin. Similar to the findings of other studies in the region, at the guild level declines in grebes and diving waterfowl were observed. Among other factors, changes in the availability of forage fish

is likely causing shifts in the overwintering ranges of these birds.^{21,22,23} Distributional shifts have been demonstrated through the analysis of Christmas Bird Count data along the Pacific Northwest, which indicate a 95 percent decline of grebe species in the Salish Sea over 36 years, while coastal counts from California for the same time period indicate an increase by over 300 percent.²⁴

Climatic changes can cause birds to misjudge the timing of migration, resulting in lower reproductive success.^{25,26} A proxy to measure this impact is migra-

TRENDS FOR COASTAL WATERBIRDS BY MIGRATION DISTANCE AND GUILD

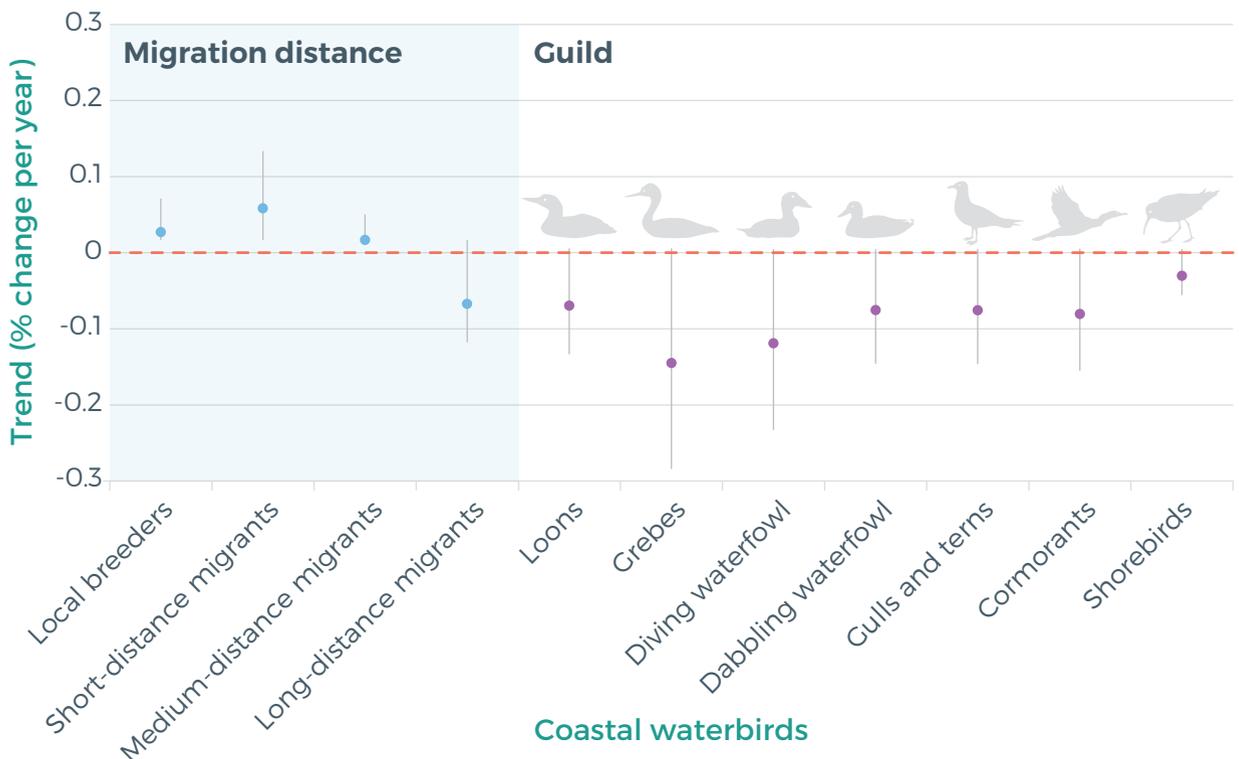


Figure 2: Trend analysis results for the Coastal Waterbird Survey (1999–2016) by migration distance (local breeders, short-distance migrants, medium-distance migrants, long-distance migrants); and guild (loons, grebes, diving waterfowl, dabbling waterfowl, gulls and terns, cormorants, shorebirds). Error bars represent the 95 percent and 2.5 percent quantiles of the mean value. Source: Bradley (2016).

tion distance. Categorizing B.C.'s marine birds into migration distance bands showed statistically significant declines in long-distance migrants, such as dunlin, while short-distance migrants (e.g., common goldeneye), and birds that breed locally (e.g., Canada goose) showed slight increasing trends.

Alcids are a group of marine birds that spend the majority of their lives at sea, coming to shore only to breed on remote islands. Some of B.C.'s coastal islands support globally significant numbers of alcids. Reliable estimates of overwintering alcids are challenging to obtain as they are not always visible to shore-based observers. However, Environment and Climate Change Canada's Seabird Colony Counts provide a reliable data source for some alcid species including rhinoceros auklet, ancient murrelet, and Cassin's auklet.

The Seabird Colony Count data indicate that rhinoceros auklet breeding colonies showed slight increasing trends at all colonies monitored, except for one where a slight but significant decline has been noted.²⁷ The abundance of Cassin's auklets at six of the monitored colonies have been declining since 1985.²⁸ Ancient murrelet were listed as Special Concern under the Species at Risk Act in 1993 due to dramatic declines on colonies around Haida Gwaii. Though this population has not recovered to historic levels, abundance has changed little since the 1970s.²⁹ All three species of alcids monitored by Environment and Climate Change Canada's Seabird Colony Count nest in burrows in the ground. As a result, their populations are vulnerable to introduced mammalian predators such as rats and raccoons.³⁰

What is being done?

There are many groups working on the stewardship of marine birds, including numerous volunteers with various naturalist groups and non-profit environmental organizations. The IBAs are stewarded by volunteer caretakers through BC Nature and over 30 Christmas Bird Counts in coastal regions of the province are organized by local groups. Other long-term citizen science programs that monitor marine birds in the region include the BC Coastal Waterbird Survey and the Beached Bird Survey. Various groups are also working together to monitor seabirds, including En-

vironment and Climate Change Canada, Parks Canada, Mitlenatch Island Stewardship Team, Laskeek Bay Conservation Society, the Council of the Haida Nation, and Bird Studies Canada.

Threats to marine birds don't stop at the Canadian border. As a result, there are multiple international initiatives that are working to protect marine birds across the Pacific Flyway such as the [Migratory Shorebird Project](#) and the [Pacific Birds Habitat Joint Venture](#).

What can you do?



Individual and Organization Actions:

- Learn to identify our coastal species, connect with the natural world, and take the first step to conservation action by borrowing natural history books from the library, joining your local naturalist group for an outing, and participating in Citizen Science programs.
- Give birds space on the beach and on the water. Maintain a distance of at least 50 metres from marine birds on the water and on shore.³¹
- Choose sustainably caught seafood.



Government Actions and Policy:

- Improve policies and develop legislation to protect forage fish, one of the most vital components in our marine food webs, to ensure protection of our marine birds, ecosystems, and fisheries.
- Improve monitoring and mitigation to reduce bycatch in B.C.
- Provide local governments and Indigenous communities with better training, equipment, and support for internal planning for oil spill response.
- Follow through on global Aichi Biodiversity Targets – specifically Target 11 – to protect 17 percent of terrestrial and inland waters, and 10 percent of coastal and marine habitats by 2020.

Footnotes

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