

The Boundary Bay Ecosystem

Background Information:

Boundary Bay is a 250-square kilometre biome of seashore, intertidal mud flats, estuaries, salt marshes, farmland and urban areas. The ecosystem is linked with those of the Fraser River, Burns Bog, Roberts Bank and Sturgeon Bank, together making up the Fraser River Estuary, an area noted for its species diversity and its great numbers of wintering waterfowl and birds of prey.

Four Major Habitat Zones

- eelgrass beds,
- mudflats
- salt marshes

Boundary Bay provides habitat to a myriad of macro-algae, apiphytic micro-algae, marine invertebrates and fish that can in turn feed many species. Deep waters beyond the low tide zone provide habitat for birds, fish and marine mammals.

Habitats of Boundary Bay and the Fraser River Estuary support:

- Millions of birds migrating along the Pacific Flyway,
- One of Canada's highest numbers and diversity of wintering waterfowl (more than 100,000)
- Over 333 different species of birds
- More than 100,000 wintering waterfowl,
- 16 species of gull,
- Great Blue Heron colonies,
- The only Canadian nesting population of Barn Owls, and
- One of Canada's largest winter populations of raptors, with 22 recorded species.
- Some of the other wildlife making Boundary Bay home include cougar, bear, coyote and racoons. Some of the marine mammals include grey whales, dolphins, sea lions and seals.

The Pacific Flyway

The north-south routes that migrating birds follow along the west coast of North America are referred to collectively as the Pacific Flyway. Boundary Bay, a major stop-over in the spring and fall, attracts 50 different species of shorebirds and numbering in the hundreds of thousands. Travelling between wintering grounds in South or Central America and nesting areas north in the high Arctic, shorebirds, waterfowl and songbirds stop to rest and feed. This vital rest stop allows them to gain the energy and fat needed to fly on to their next stop, which may be thousands of kilometers away.

Why do Birds Come Here? (*Food and Habitat!*)

- Boundary Bay is marine influenced from the South Georgia Strait and has six rivers flowing into it. Estuaries, where salt and fresh water mix, are biologically rich and provide habitat for much wildlife.
- Along Boundary Bay's shores, expansive eelgrass beds, mudflats and salt marshes provide habitat to a myriad of algae, marine invertebrates and fish that in turn feed many species of birds.
- Deep waters beyond low tide provide habitat for birds, fish and marine mammals. Dozens of bird species can be seen in deep waters and along the rocky shore feeding on fish, crab, mussels and other marine life.
- Upland forests provide important habitat for songbirds, woodpeckers, hawks and owls. During spring and fall, warblers migrate through the woodlands.



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What can you do to make a difference?

- Birds need peace and quiet. Enjoy the beach away from the tidal area where the birds are feeding. If they are tired or hungry on their long journey they fall into the sea and perish.
- Keep dogs on a leash and away from birds on mudflats, beaches and fields. Pick up pet feces.
- Learn about healthy living with nature and ways to prevent pollution.
- Look but leave – shells, eelgrass, sea weed, driftwood; all contribute to the food web.
- Carry a bag and pick up litter when walking the beach.
- Learn about gardening for wildlife and how to help protect natural areas.
- Volunteer with a local stewardship group; you can make a difference!

Is Boundary Bay Protected? *(The short answer is “sort of”!)*

Birds have migrated to Boundary Bay for at least 10,000 years to feed and rest during long journeys; others winter here. As remaining natural areas are developed, where will the birds go? Legal protection in the IBA (Important Bird Area) is patchy. The Alaksen National Wildlife Area is officially designated a Ramsar Site, a wetland of global importance. It includes the Reifel Migratory Bird Sanctuary. Boundary Bay and Strugeon Bank have provincial protection as Wildlife Management Areas (WMA) and are part of the Western Hemispheric Reserve Network <https://whsrn.org/> but currently are not designated by the provincial government as Ramsar sites.

A Ramsar designation signifies that a wetland is considered to be of international importance, providing increased protection and recognition for the site, leading to enhanced conservation efforts, potential funding opportunities, and promoting sustainable management practices for the wetland ecosystem, benefiting both local communities and biodiversity at large; essentially, it highlights the wetland's critical ecological role on a global scale. Boundary Bay does not have such protection.

Boundary Bay's watershed includes rare and endangered ecosystems including Coast Douglas-fir forest and a web domes peat bog. Important but threatened natural habitats are mixed conifer/ deciduous forests, old fields, hedgerows, farmland, wetlands, wild salmon and nutrient bearing streams and estuaries. Dozens of birds species can be seen in deep waters and along the rocky shore feeding on fish, crab, mussels and other marine life. Eelgrass beds form the rich food base for fish, shellfish and waterfowl in shallow waters. Please take the time to learn more about the essential nature of Boundary Bay!

Learn More:

Anne Murray has been documenting and writing about this area for many years and has published numerous books. On the Nature Guides BC (<https://www.natureguidesbc.com/>) site you will find:

- Bird, plant and animal checklists
- Links to publications and local organizations
- Photographs and articles (on a linked blog)

Boundary Bay: A Special Place, is a publication of FosBS and is available on our website along with additional informative brochures & teaching resources.

<https://www.birdsonthebay.ca/educational-guides-brochures>



www.birdsonthebay.ca