

## Marine Plants – Estuaries

### description

Estuaries, also known as salt marshes, are a type of coastal wetland, typically impacted by tidal fluctuations. They are found where fresh water from rivers or streams meets with salt water from the ocean, and vegetation within an estuary exhibits varying degrees of salt-water tolerance. Nutrient mixing in estuaries is ongoing due to the rise and fall of the tide, and as a result, estuaries are highly productive habitats. They are considered particularly important due to their support for a wide variety of species and role as nursery grounds for numerous commercially and recreationally important species.

This atlas page illustrates estuaries along the BC coastline. Two separate projects have worked to map estuaries in recent years: the Sensitive Ecosystem Inventory (SEI) and the Pacific Estuary Conservation Program (PECP). Both projects used aerial photography and GIS tools to map the estuaries. Data from the PECP was used as it was originally mapped, and combined with data available from the SEI projects for the Eastern Vancouver Island and the Gulf Islands project, Bowen Island and the Sunshine Coast. The first two SEI datasets contained the ecosystem subclass wetland marsh (WN:ms) and polygons from this subclass were extracted if they were within 500 metres of the coastline. The subclass estuarine marsh (EM) from the SEI project for the Sunshine Coast was also included.

The PECP dataset ranked estuaries based on their biological importance to water birds (ducks, geese, swans, loons, and grebes) based on estuary size, habitat type and rarity, herring spawn occurrence, water bird use, and intertidal biodiversity (Ryder et al. 2007). Those rankings, which range from high to low (1 to 5), are displayed on the atlas page. The Fraser River was not ranked by the PECP and was assigned to the highest ranking (class 1) based on reviewer feedback. Because the estuaries from the SEI dataset were not ranked, these were assigned to the lowest ranking (class 5).



PHOTO: DAVE NICOLSON



PHOTO: ROB COQUYT

### data sources

- Province of British Columbia and Environment Canada (Canadian Wildlife Service) – Sensitive Ecosystem Inventory
- Pacific Estuary Conservation Program – Estuaries

### data resolution

- All estuary features were captured and digitized at a scale of 1:10,000 or 1:20,000.

### date collected

- 1997, 2005

### date compiled

- 2009

### reviewers

- Cynthia Durance, Precision Identification
- Brad Mason, Fisheries and Oceans Canada, Community Mapping Network

### reviewer comments

- The SEI is more detailed and likely includes some smaller estuaries that weren't included in the PECP. The SEI project included ground surveys.
- The relative importance of an estuary would depend on priorities. Some are very important for birds, others for fish, others because they are large (high productivity), others because they are locally rare, etc. From a vascular plant perspective they are all equally important.
- Ecological value of estuaries is very high.

### caveats of use

- Data from the Sensitive Ecosystem Inventory were only available for the Strait of Georgia.
- Survey effort is not consistent across all planning units or across all areas of the coast and some habitats tend to be under-represented by some survey methods. Areas with no data may not have been surveyed and these data gaps are not necessarily indicative of an absence of estuaries. Some locations may still be important but currently lack associated data to confirm their value.
- This feature is a compilation of data collected by many people, for different purposes, using different survey techniques with different methodologies within each technique and, therefore, considerable care must be taken when using the data. Please refer to the original metadata document for data limitations and usage.
- Recommended date of expiry for use of these data in a marine planning context: None provided.

### map, feature data and metadata access

- Visit [www.bcmca.ca/data](http://www.bcmca.ca/data) for more information.

### references

- For more information on the SEI or PECP mapping projects, please see: Province of British Columbia. Sensitive Ecosystem Inventories. [www.env.gov.bc.ca/sei/](http://www.env.gov.bc.ca/sei/)
- Ryder, J.L., J.K. Kenyon, D. Buffett, K. Moore, M. Ceh, and K. Stipek. *An integrated biophysical assessment of estuarine habitats in British Columbia to assist regional conservation planning. Technical Report Series No. 476.* Canadian Wildlife Service, Pacific and Yukon Region, British Columbia. 2007.

**BCMCA Atlas**

**Marine Plants**

**Estuaries**

**Legend**

**Relative Importance**

- High
- Medium High
- Medium
- Medium Low
- Low

**Data Sources:**

Pacific Estuary Conservation Program, Province of BC and Environment Canada (Canadian Wildlife Service) - Sensitive Ecosystem Inventory

**Base Data:**

ESRI Base Data, GeoBase, GeoBC, NOAA, Natural Resources Canada, USGS, Washington State Government

**Thematic Data:**

For more information on data sources and methods please refer to the facing page to this map

**Projection:** BC Albers NAD83

0 25 50 75 100 125 150

Kilometres

0 25 50 75

Nautical Miles

1:4,250,000 \*

\* Written scales are approximate and are based on a 11 x 17 inch paper size.

Prepared for:



Map template by Caslys Consulting Ltd.

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PACIFIC OCEAN

**Inset Map** 1:500,000\*

Notes: The inset has been provided to illustrate the level of detail available in the data. The inset is for illustrative purposes only and does not imply any significance to this region.