WWF

FACTSHEET

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Marine

Estuaries of British Columbia

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ESTUARIES

HIGHLY PRODUCTIVE AND AT RISK IN B.C.

Introduction

Estuaries are the rainforests of the sea – complex, dense with living organisms, and strongholds for biodiversity. They are highly-productive ecosystems that are becoming increasingly at risk in British Columbia due to a lack of adequate management and protection.

Millions of juvenile B.C. salmon spend part of their life cycle in estuaries during their migratory passage to the sea. Hundreds of thousands of wintering waterfowl seek food and refuge in their waters every year. Eulachon, Dungeness crab and green sturgeon are a few of the lesser known species that depend on the nutrient-rich estuary environment. By some estimates, fully 80 per cent of all recreationally-caught fish species rely on these ocean nurseries at some point in their life cycle.[1]

Salt water and tides influence the upriver portion of the estuary.

As well as supporting an abundance of life, estuaries fill many crucial ecosystem functions; filtering water, regulating nutrients and protecting against the worst impacts of coastal storms. These vital services are well understood, yet almost half of B.C.'s estuaries are now under threat and need our protection.[2] Climate change, pollution and industrial development are a few of the threats from both land and sea. The loss of healthy estuaries would impoverish our coastlines, rivers and communities.

A Powerhouse Ecosystem

Only a tiny portion – 2.3 per cent – of B.C.'s coastline is classified as estuary.[3] According to the Canadian Wildlife Service, Class 1 estuaries are those considered most valuable for their size, their intertidal biodiversity and the variety of species that use their services. B.C.'s Class 1 estuaries include the Chemainus River/Bonsall Creek Complex, Courtenay River, Cowichan River, Georgetown Creek, Kitimat River, Nanaimo River, Nicomekl/Serpentine River Complex and Skeena/Ecstall/McNeil River Complex.

The province's two largest estuaries are found on the Fraser and Skeena Rivers. Already, the Fraser River delta has lost more than two thirds of its estuary habitat to urban and industrial development.[4] And the Skeena estuary - ranked as one of the most important in B.C. – is now threatened by rapid expansion of new commercial and industrial development.

The Climate Change Threat

Climate change poses another major threat to estuaries. Rising sea levels and shifting storm patterns are forcing estuaries to gradually drift inland. In areas where dikes or seawalls are built, estuaries are prevented from moving further inland. Exposed to rising seas, the estuary environment will eventually lose its delicate balance of fresh and saltwater, and its habitat will be destroyed.

Climate change is also affecting the timing of spring floods in rivers as rainfall patterns change. This can alter the amount of sediment and nutrients washed downstream, which in turn can affect estuary plant and marine life. Climate impacts on ocean currents and oxygen levels also change the way the ocean delivers marine nutrients to estuaries. These changes will make the estuary resources humans depend on – such as salmon and crab – less secure.

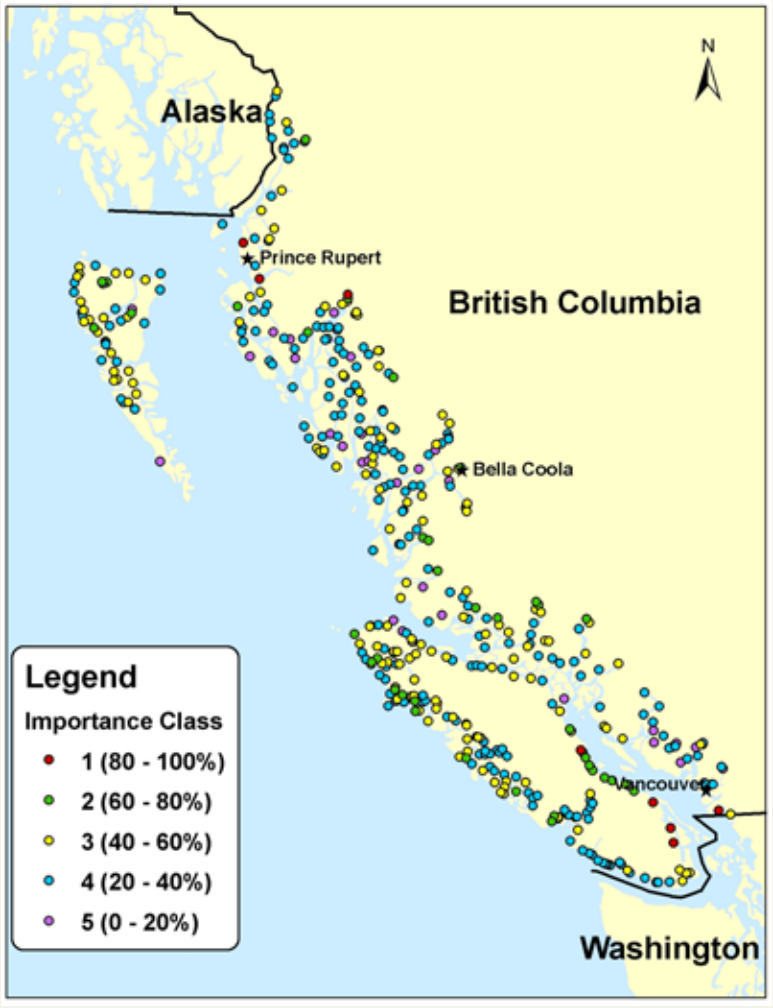
Marine mammals gather seasonally to feed on the abundance of fish and other marine life in the estuary.

Planning for Protection

Many estuaries are not adequately managed and no single agency or level of government has the ability to fully protect them. Instead, cooperation among governments, industries and the public is required to develop collaborative management plans.

WWF-Canada has been working in the Skeena estuary – B.C.'s second-largest – mapping eelgrass to better understand the dynamics of its growth. Eelgrass beds act as important carbon sinks that can help B.C.'s efforts to meet its carbon emission reduction commitments.

WWF is also proud to be participating with other groups on B.C.'s north coast to develop marine spatial and land use plans that will ensure the protection of these vital ocean rainforests now and into the future.



Map identifying Importance Classifications of 442 estuaries in BC, not including the Fraser estuary.*

*Map reproduced from Ryder, J.L., J.K. Kenyon, D. Buffett, K. Moore, M. Ceh, and K. Stipec. 2007. 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.

WWF-CANADA'S VISION

WWF-Canada's vision for enhanced protection of estuaries includes:

- Management plans for B.C.'s Class 1 estuaries, including designated conservation areas and robust monitoring.
- Reformed water licensing procedures in a new B.C. Water Act that meets the flow needs of rivers by 2014.
- Completion of a BC-Canada Northern Shelf Bioregion Marine Protected Area network by 2020 that includes enough estuarine habitat to safeguard against climate change.

To learn more, visit wwf.ca

[1] Lellis-Dibble, K. A., K. E. McGlynn, and T. E. Bigford. 2008. Estuarine Fish and Shellfish Species in U.S. Commercial and Recreational Fisheries: Economic Value as an Incentive to Protect and Restore Estuarine Habitat. U.S. Dep. Commerce, NOAA Tech. Memo. NMFSF/SPO-90, 94 p. Pg. 27.

[2] Ryder, J.L., J.K. Kenyon, D. Buffett, K. Moore, M. Ceh, and K. Stipec. 2007. 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. Pg. iii.

[3] Austin, M.A., D.A. Buffett, D.J. Nicolson, G.G.E. Scudder and V. Stevens (Eds.). 2008. Taking Nature's Pulse: The Status of Biodiversity in British Columbia. Biodiversity BC, Victoria, BC. 268 pp. Available at: www.biodiversitybc.org. g. 47.

[4] Austin, M.A., D.A. Buffett, D.J. Nicolson, G.G.E. Scudder and V. Stevens (eds.). 2008. Taking Nature's Pulse: The Status of Biodiversity in British Columbia. Biodiversity BC, Victoria, BC. 268 pp. Available at: www.biodiversitybc.org. Pg. 134

Why we are here
We are creating solutions to the most serious conservation challenges facing our planet, helping people and nature thrive.

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