Georgia Strait Alliance
Caring for Our Coastal Waters

BACKGROUNDER

The Strait of Georgia Under Threat

About The Strait of Georgia

The Strait of Georgia is part of the Salish Sea and is located between Vancouver Island and the mainland coast of British Columbia. The Strait stretches 220 km from the US border (where it adjoins Puget Sound), north to Campbell River and the Discovery Islands. The Strait is part of a huge estuary system – a place where hundreds of rivers flow into the sea, helping to shape the unique characteristics of the region and making the Strait of Georgia biologically rich.

The Strait of Georgia is a beautiful jewel, but Parks Canada has called it “the most at-risk natural environment in Canada.”

What are the critical issues threatening The Strait of Georgia?

Urban Sprawl and Development

Nearly 75 per cent of British Columbians currently live around the Strait of Georgia. By 2020, the population in this area is expected to increase from three million to more than four million, and up to eight million if you include the entire Salish Sea region. Already the Strait and its watersheds face serious environmental problems, the bulk of these caused by rapid human population growth and urbanization. Our waterfronts show the stress of increasing densification that is not built and managed on ecological principles. Increasing land-use conflicts caused by the competing needs of waterfront stakeholders also pose serious challenges.

Climate Change

Climate change is having an impact in the Strait of Georgia. This can be seen in higher than average air and water temperatures, changing patterns of precipitation, extreme or unusual weather events, and a significant decline in the average snowpack. Among the most worrisome impacts of climate change are:

Major Storm Events
People living around the Strait have already started to notice an increase in the intensity and variability of major storms. These storms put vulnerable marine habitat at risk, increase the risk of flooding in coastal communities, and have the potential to destroy infrastructure.

Sea Level Rise
Sea level rise is caused by the thermal expansion of ocean waters and the melting of glaciers and ice fields. Sea level rise will bring flooding, shoreline erosion, seawater intrusion into groundwater, and the loss of up to one quarter of the world's wetlands in this century.

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Ocean Acidification
By burning fossil fuels, we are changing the chemistry of the ocean, making it deadly for many of the creatures that live in it. Up to a third of all the CO2 we release into the atmosphere is absorbed by the ocean. As it dissolves, it produces carbonic acid, which makes seawater acidic.

Ocean acidification will make it much harder for animals with shells to survive because increasing acidity weakens and then dissolves their shells. Species without shells will also be threatened as the effects ripple up the entire marine food chain. For example, the loss of pteropods (a group of sea snails and sea slugs) will put the Chinook salmon that feed on them at risk. And in turn, the orcas that feed on Chinook salmon will be at risk.

Here in the Strait, ocean acidification threatens many species, including:

- Oysters, clams and scallops
- Corals and tubeworms
- Plankton such as pteropods (tiny snails) and coccolithophores (a type of algae)
- Fish and mammals that rely on these plankton (salmon, mackerel, herring, cod, humpback and grey whales)
- Rockfish and some other bottom-feeding fish
- Squid
- Eggs and larvae of many species
- Orcas

The economic impacts of ocean acidification will be serious in our region. More than 15,000 British Columbians work in commercial fishing, sport fishing or shellfish aquaculture. Together, they contribute close to $500 million per year to BC's economy.

Fossil Fuel Transport

BC's coast is facing a host of fossil fuel export infrastructure development proposals. Among the proposed projects are Kinder Morgan's crude oil pipeline, coal export facilities on Texada Island and at the Surrey Fraser Docks, and the Quicksilver LNG facility. And this does not include the growing number of projects being proposed on the Washington State side of the Salish Sea. If approved, these projects will create a "fossil fuel super highway" in the Salish Sea region, putting communities, marine species, and habitat at risk.

Risk of Spills
An increased volume of crude oil and other fossil fuels moving through our waters equals an increased risk of a major oil spill. This would impact important marine and estuarine ecologies throughout the Strait, and it would result in damage to our economy and quality of life, from ruined fisheries to impacts on tourism and recreation. Spill response capability and funding in BC is woefully inadequate, and lags far behind other jurisdictions. The best spill response in the world only recovers 25 per cent of the oil, which leaves an unacceptable 75 per cent left in the environment forever.

Contributing to Climate Change
Fossil fuel projects are on the frontlines of the climate change challenge. The tar sands oil – the dirtiest fuel on earth – that would be carried by Kinder Morgan would be responsible for emissions of up to 175 million tonnes of carbon dioxide per year, four times more than BC's entire annual C02 emissions. Add the LNG and coal projects, and that number grows. Approving these projects would lock BC into a climate-polluting path, away from climate leadership and away from investment in alternative sources of energy.

About Kinder Morgan's Trans Mountain Pipeline
Kinder Morgan's proposal is to build a new pipeline to nearly triple the capacity of its existing Trans Mountain pipeline. As a result, the number of tankers carrying toxic tar sands oil through the Georgia Strait would increase from 30 per year to 400 per year. The sole purpose of the pipeline is to transport diluted bitumen destined for offshore export.

Pollution

Toxic Chemicals & Pesticides

Fish and other aquatic life are affected by what we use in our homes and gardens. Hazardous waste goes down the drain into local sewers or septic systems, eventually leaching into rivers, streams, and coastal waters, causing serious impacts on wildlife.

Non-Point Source Pollution

The Strait has become a dumping ground for chemicals that are harmful to human health and the marine environment. This includes industrial pollutants such as cyanide, lead zinc, residual chlorine, ammonia, nitrates, methyl tertiary butyl ether (MTBE) and PCBs. Unfortunately, not enough is known about what is really being dumped into our air, water, and soil, and this has hindered the work towards positive improvements.

Ship Pollution

Thousands of ships ply the Strait of Georgia's waters each year, including oil tankers, fuel barges, naval vessels, cruise ships, fish boats, pleasure craft, and ferries. Ship pollution culprits include:

- Oil and fuel **spills** from boats of all sizes.
- Discharge of bilge water, greywater, sewage, lubricating oil, and engine coolants.
- Ships, not cars, are the primary source of **air pollution** in the Lower Mainland. They produce one third of the region's sulphur dioxide and are the second biggest producer of nitrous oxide.
- The average **cruise ship** carries 3,000 passengers and crew and is a virtual floating town, complete with all the waste, sewage, and pollution that any town produces.
- The estimated 400,000 **recreational boaters** in BC also have an impact on the marine environment. Sewage, bilge and greywater discharges, fuel and hydrocarbons, toxic paints and maintenance products, and disruptive interactions with wildlife all put species and habitat at risk.
- There are hundreds of **derelict vessels** floating in the waters off BC's coast. These decaying vessels not only leach hazardous materials but also have the potential to cause fuel spills if they collide with another vessel or other infrastructure.

Dumping

Environment Canada permits the disposal at sea of approximately two to three million tonnes of materials each year, including dredged or excavated material, fish waste and other organic matter, ships, aircraft, platforms or other structures, and bulky substances composed of iron, steel, concrete, or other similar matter. Most of the dumped materials go to designated ocean disposal sites, including about 20 sites in the Strait of Georgia and adjoining waterways.

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Artificial Reefs

On a number of occasions, recreational diving organizations in our region have pressed for and won permits to dump derelict ships and even an airplane to be used as artificial reefs. Despite public concerns about environmental impacts, derelict vessels have been sunk in various locations including sites off Nanaimo, Sechelt Inlet, Chemainus, Sidney, and Howe Sound.

Fish Farming

Fish farming causes a host of problems for wildlife and the marine environment in the Strait:

Sea Lice

High concentrations of fish in open net-cages provide the perfect conditions for breeding disease and parasites such as sea lice. These parasites latch onto the fish and in the right conditions multiply far beyond normal levels. Because net-cage salmon farms are open to the ocean, these diseases can be passed back and forth between wild and farmed salmon. Though there have been some successful efforts made to reduce sea lice concentrations, some impacts remain.

Waste

The huge quantities of untreated waste that fish farms produce go straight into the ocean. Fish farm waste consists of fish feces, uneaten food pellets, drugs and drug residues, pesticides, fungicides, and feed additives. Untreated fish farm waste spills through the cages, collects at the bottom of the ocean, and smothers the sea floor. As this layer breaks down, it consumes the oxygen vital to shellfish and other bottom-dwelling sea creatures.

Escapes

BC's salmon farming industry has introduced the Atlantic salmon, a non-native species, into the Pacific Ocean. The introduction of non-native species has been identified by the United Nations, environmental scientists, and conservationists as one the greatest threats to global biodiversity. Escaped Atlantic salmon compete for wild salmon habitat and food; they eat wild salmon fry and eggs; they can carry parasites and diseases.

Marine Mammals

Fish net entanglement and drowning and the shooting of marine mammals around fish farms is a major source of concern.

Government Mismanagement of Marine Resources

Governmental decisions that prioritize industry at the expense of the environment threaten the Strait and all the species that call it home. Recent examples of this type of mismanagement by government include:

- Lack of meaningful investment in environmental protection by federal and provincial governments.
- Erosion of environmental protection laws by the federal government.
- Depletion of federal resources and staff dedicated to environmental monitoring and protection.
- Prioritization of fossil fuel development over environmental protection.

About Georgia Strait Alliance
Georgia Strait Alliance is a charitable organization dedicated the protection and restoration of the marine environment where 75 percent of British Columbians live, work, and play. GSA works with the community and experts to find science-based solutions to the problems and issues that threaten the Georgia Strait. A healthy and protected marine environment is good for the economy, communities, and wildlife. http://www.georgiastrait.org

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