Salish Sea Transboundary Ecosystem Indicators:
Executive Summary

Introduction

Coast Salish people have lived in balance within the Salish Sea ecosystem since time immemorial. Currently, over 7 million people live in the areas around the Salish Sea, benefitting from the resources the ecosystem provides.

By the year 2025, we can expect the population in the Salish Sea ecosystem to expand to over 9 million people. Sustainability of the Salish Sea ecosystem is critical to our continued use and enjoyment of this place.

What are ecosystem indicators?

The Health of the Salish Sea Report, a joint initiative between the U.S. Environmental Protection Agency (EPA) and Environment Canada, describes trends that help us identify priorities for future action across the entire Salish Sea. Earlier transboundary ecosystem indicator reports were published in 2002 and 2006. This report updates the previous indicators and expands the suite of information to increase their relevance to ecosystem health, including human well-being.

The information presented by the indicators reflects published studies and monitoring data on valued ecosystem components in the Salish Sea. This integration involves significant collaboration among multiple agencies and stakeholders. For each indicator, we also present Coast Salish Traditional Ecological Knowledge as "sustainable perspectives." Coast Salish knowledge allows us to extend the timeline for indicators and draws attention to the significance of connections among indicators.

To help convey the status and trends of these important ecosystem components and how they relate to human activities, 10 indicators address the following questions:

1. What is happening?
2. Why is it important?
3. Why is it happening?
4. What is being done?

EPA United States Environmental Protection Agency

Environment Canada Environnement Canada

Canada

What do the ecosystem indicators tell us in this latest report?

We see positive trends on some issues, such as improving air quality and reductions in certain persistent toxic chemicals in the aquatic food web. Other issues, such as habitat protection and water quality, need more attention.

The state of air

Fine particulates – Improving trend

Thirteen of the 14 air monitoring stations in our study meet both Canadian and U.S. standards, and levels of pollution are generally decreasing thanks to new actions in Washington and British Columbia that control sources of air pollution. Read our full indicator report on air quality in the Salish Sea.

The state of species

Marine species at risk – Declining trend

Between 2008 and 2011, 23 new species were identified as threatened or of concern, representing the greatest increase since reporting was established in 2002.

Chinook salmon – Steep declining trend

Chinook salmon populations are down 60% since the Pacific Salmon Commission began tracking salmon data in 1984.

Killer whales (Orcas) – Neutral trend

Although there was a steep decline between 1994 and 2001, the population appears to have stabilized in recent years.

Toxics in the food web (Pacific herring and harbor seals) – Improving trend

Levels of PCBs in harbor seals have been declining since the 1980s, although the decline has slowed in recent years. Levels of flame retardant chemicals – called PBDEs – are also declining in harbor seals.

The state of water

Freshwater quality – Improving trend

Data collected between 1999 and 2011 for 17 rivers shows improving trends in 3 of the rivers (Samish, Nisqually and Deschutes). Though 12 of the 17 rivers regularly or occasionally exceeded water quality guidelines, there were no rivers with statistically significant declining trends over this period.

Marine water quality – Declining trend

Marine dissolved oxygen is showing a long-term decline in the waters of Puget Sound and in the deeper waters of Georgia Strait. Marine Water Condition Index scores also have been in general decline over the past 10 years for many areas in Puget Sound.

Stream flow – Declining trend

Summer stream flow has shown statistically significant declines in 10 of the 17 stations studied since 1975.

The state of human well-being

Shellfish beaches – Neutral trend

There has been a slight increase in shellfish beds closed to harvesting, but this may be due in part to increased monitoring.

Swimming beach – Neutral trend

Overall, nearly three quarters of swimming beaches in the Salish Sea consistently meet water quality standards.

Inspire action

We all have a common interest and a responsibility to protect and restore the Salish Sea. Government action alone cannot address these issues. Community groups, non-profits, tribal governments, cities and municipalities are delivering protection and restoration work that is showing some results. Important examples of this work can be found through the Puget Sound Partnership's Project Atlas, EPA's funding map and Environment Canada's EcoAction Community Funding Program (see links below).

You can use the ecosystem indicators presented in this report to encourage conversation, identify partners in collaboration and inspire action to improve ecosystem health. The information and links identifying other sources of information can help all of us to identify specific areas and actions that need our attention and efforts.

About the data

A number of current publications report on environmental conditions in the Salish Sea. The ecosystem indicators in this report draw on existing publicly available information, including agency technical reports, scientific sampling from Canadian and U.S. sources, and scientific work by non-governmental organizations.

History

In 2000, EPA and Environment Canada signed a Joint Statement of Cooperation to facilitate cross-border understanding, dialogue and collaboration on Salish Sea issues. From this partnership came the Salish Sea ecosystem indicators report to help show where we are seeing progress in sustainably managing the Salish Sea ecosystem and its valuable resources, where conditions are declining, and where course corrections are needed.

For more information ...

Health of the Salish Sea Ecosystem website
http://www2.epa.gov/salish-sea

Puget Sound Partnership Project Atlas
www.psp.wa.gov/pugetsoundprojectatlas

EPA Puget Sound page
http://epa.gov/pugetsound

Environment Canada EcoAction
Community Funding Program
www.ec.gc.ca/ecoaction

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