



Puget Sound Georgia Basin Ecosystem Indicator Report

Executive Summary



Conditions Worsening



Marine Species at Risk

The Puget Sound Georgia Basin Ecosystem Indicators give a glimpse into the health of our ecosystem, which includes the interactions among seven million people, their health, local economies and a complex system of water, land, plants, animals and microorganisms. This indicator describes the formal number of listings or designations of marine species identified to be at risk of extinction within the Puget Sound Georgia Basin. The species listed are native to this area and are important components of the local estuarine and marine ecosystem. The indicator addresses only those marine species that utilize the Puget Sound Georgia Basin ecosystem and were formally listed or designated as an at-risk species prior to September 2004. In each case, a local population of a species has been listed or designated by state, provincial or federal agencies in the U.S. or Canada because it is genetically distinct and uniquely adapted to this area, and therefore its decline warrants special attention to ensure its conservation.

In many ways, the species at risk indicator represents the cumulative effects that humans have on the Puget Sound Georgia Basin through population pressure, toxic chemical and nutrient pollution, and habitat loss through land use changes. It is these factors, in combination with over-harvesting, that have resulted in a decrease in local abundance and biodiversity and the ability of species to successfully reproduce at rates that would sustain their populations.

What Is Happening?

As of September 1, 2004, 63 species of concern were either listed or designated as being at risk by one or more of the jurisdictional agencies in either Puget Sound or the Georgia Basin. **Species Added** to the Puget Sound Georgia Basin Marine Ecosystem List between 2002 and 2004 are: Bull Trout; Killer Whale, Offshore Population; Leatherback turtle; Cultus Lake and Sakinaw Lake Sockeye Salmon; Bocaccio; Stellar Sea Lion; Grey Whale -- Northeast Pacific population; Harbour Porpoise -- Pacific Ocean population; and the Northern, or "Pinto" Abalone.

The Northern Resident Killer Whales constitute 16 pods with approximately 205 members. Between 1997 and

2003, the population declined by seven percent. The Southern Resident Killer Whales (pods J, K and L) currently contain about 85 members. The southern residents' population declined 17 percent between 1995 and 2001 and were listed as endangered under U.S. Federal law in late 2005.

| Species | TOTAL |
|---------------|-------|
| INVERTEBRATES | 3 |
| FISHES | 27 |
| REPTILES | 1 |
| BIRDS | 23 |
| MAMMALS | 9 |
| TOTAL | 63 |

Marine animal species listed or designated as being at-risk in the Puget Sound and Georgia Basin

Why Is It Happening?

Three major factors influence species decline:

- **Habitat loss, degradation and fragmentation**
Nothing more profoundly affects a species' ability to survive than habitat loss. Wildlife face severe stress when wetlands, forestlands, prairies and shoreline areas are paved over, armored, dredged or drained, creeks are piped into culverts, over-water structures are constructed, and nets are dragged across bottom

habitats. Once native habitat is converted to other uses, particularly with traditional development approaches and patterns, the remaining habitat often becomes more isolated in a fragmented landscape of multiple land uses. Wildlife populations associated with these fragmented habitats are often isolated from other breeding populations, competition and predation from other species and food resources.

continued

Why Is It Happening? *continued*

- **Pollution and chemical contaminants**
The Puget Sound Georgia Basin has a long legacy of intensive industrial activities including industrial wastewater discharges, mining, pulp and paper mills, oil refineries, and smelting. Contamination from these sources is exacerbated by overall polluted surface runoff. Contaminants of concern include heavy metals, organic compounds such as polycyclic aromatic hydrocarbons (PAHs, carcinogens created through petroleum combustion), flame retardants, phthalate esters (used in plastics and cosmetics) and polychlorinated biphenyls (PCBs).
- **Over-harvesting** from both commercial and recreational interests.

How Does This Affect Me?

- Affects the legacy to our communities and our children
- Physical and emotional well-being
- Losing species habitat means loss of flood protection, pollinators that produce crops, potential medicines and biochemical compounds
- Costly clean-up and restoration
- Imbalance in species causes other problems like opening niche space for aggressive, non-native species
- Loss of recreational and wildlife viewing revenues: Washington is fifth in the U.S. for revenues associated with wildlife viewing. No species to look at, less local revenue

What Can I Do?

Your Tool Box

- **Join local conservation organizations:** Contact the Cascade Land Conservancy, The Nature Conservancy, or local land trusts to find out how you can help in your local community. Also see The Land Trust Alliance of BC for an array of tools, including the Ecological Gifts Program.
- **Develop community partnerships to protect or restore local habitats** that support salmon, shellfish, marine and shoreline birds and other species. Canada's Federal Habitat Stewardship Program works to protect habitat and contribute to the recovery of species listed as endangered, threatened or of special concern.
- **Use natural landscaping and low impact development:** Work with landscape suppliers that emphasize native species and use organic landscaping techniques and compost supplements. Create beautiful and functional landscapes that help slow polluted runoff and attract wildlife.

What Are We Doing About It?

Public Sector Strategies: Federal, provincial/state and local government strategies for protecting and recovering species fall into the following categories:

- Scientific assessments, including monitoring and surveys
- Species recovery and management planning by public agencies and partners through grant programs
- Land acquisition or easement by public agencies and other conservation interests including private landowners, farmers, community groups and non-profit organizations working through habitat acquisition and land trusts, tax incentives, conservation reserve enhancement programs, wetland reserves or farm/ranchland protection and forest stewardship programs

Learn more http://www.epa.gov/region10/psgb/indicators/species_at_risk/

Share what's important to you and your community
<http://www.epa.gov/region10/psgb/contact/>



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The Puget Sound Georgia Basin Ecosystem Indicators Report is a collaborative effort brought to you by Federal, State, Provincial and Local partners from the United States and Canada.