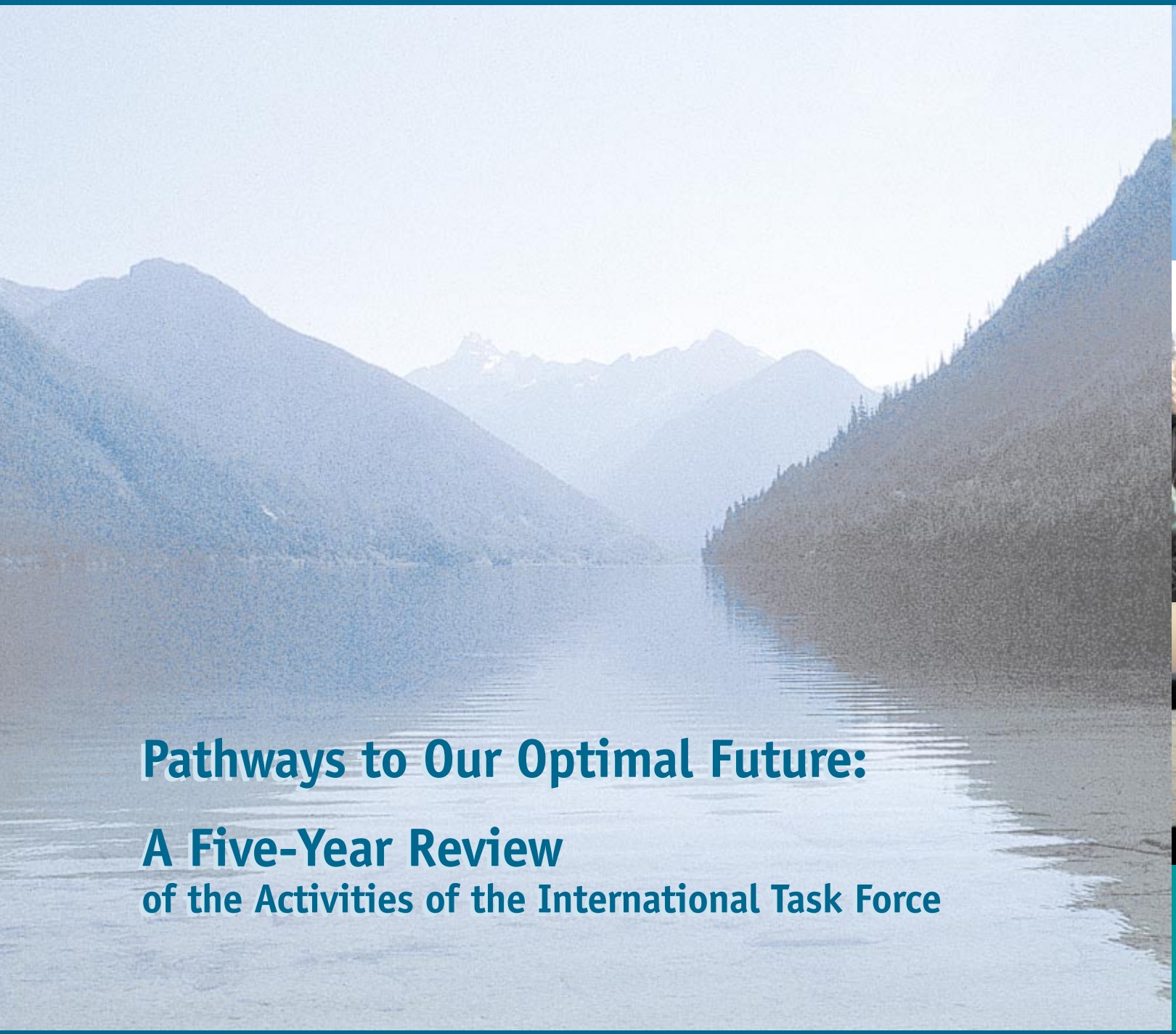

Pathways to Our Optimal Future:

A Five-Year Review
of the Activities of the International Task Force

Puget Sound/Georgia Basin
International Task Force

We Would Like to Hear From You!

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December 2000

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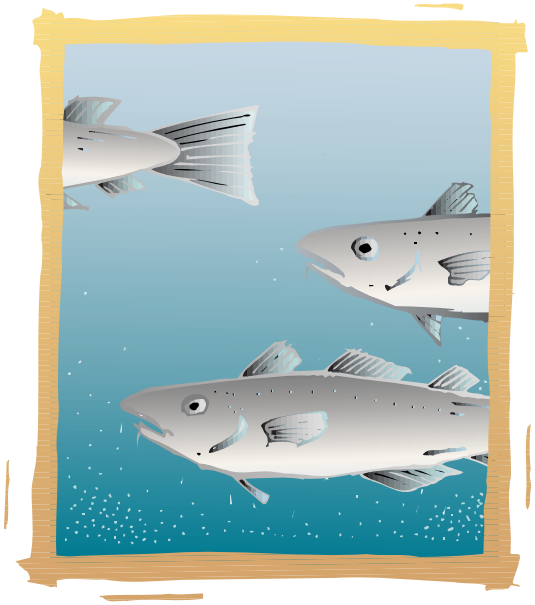

Pathways to Our Optimal Future:

A Five-Year Review of the Activities of the Puget Sound/Georgia Basin International Task Force

Tracking the Recommendations of the Marine Science Panel

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INTRODUCTION

The Province of British Columbia and the State of Washington share a unique and natural wonder, an inland sea that houses an incredibly rich and diverse ecosystem. Unfortunately, the region is also experiencing significant impacts from unsustainable settlement practices brought about by unprecedented population growth. Impacts from agriculture, urbanization and industrial activities are posing serious threats to the long-term sustainability of our shared waters.

In 1992, British Columbia Premier Mike Harcourt and Governor Booth Gardner of Washington State signed an Environmental Cooperation Agreement that committed the province and state to *promote and coordinate mutual efforts to ensure the protection, preservation and enhancement of our shared environment for the benefit of current and future generations.* The Agreement recognizes that environmental concerns do not respect physical or political boundaries.

The Environmental Cooperation Council (ECC) was created shortly after the signing of the agreement to address the numerous issues transcending the boundary between British Columbia and Washington. The ECC formed the Puget Sound/Georgia Basin International Task Force to focus on environmental issues in the Strait of Georgia and Puget Sound. Task force members are program staff from federal, provincial and state agencies, tribes, First Nations, and regional organizations from both sides of the international boundary.

In 1993, the Environmental Cooperation Council appointed a Marine Science Panel comprised of six university and government marine scientists from British Columbia and Washington to make recommendations for management of shared marine waters. Their task was to bring the best science available to bear on the perceived problems. The panel presented twelve recommendations to the ECC in August 1994. The Council then directed the Task Force to develop actions to implement the Marine Science Panel's recommendations.

The International Task Force divided the Marine Science Panel's recommendations into three priority levels. This report outlines the progress made in the intervening five-year period in responding to the recommendations and discusses several new challenges that the Task Force could address over the next few years.

High Priority Recommendations

Protect Marine Life
Establish Marine Protected Areas
Prevent Nearshore Habitat Loss
Prevent Introduction of Non-indigenous Species

Medium Priority Recommendations

Control Toxic Waste Discharges
Coordinate Research & Monitoring
Undertake Strategic Planning
Prevent Large Oil Spills
Prevent Major Freshwater Diversions

Low Priority Recommendations

Ensure the Freedom of Scientific Information
Increase Communications Across Border
Comprehensive Program Audit

High Priority Recommendations

Protect Marine Life
Establish Marine Protected Areas
Prevent Nearshore Habitat Loss
Prevent Introduction of Non-indigenous Species

PROTECT MARINE LIFE

The Marine Science Panel suggested that management agencies in both countries shift priorities toward protecting fish and wildlife species rather than managing for maximum sustainable harvest. Specifically, the panel recommended:

- severely curtailed harvest of all species for which a significant population decline has been noted;
- adoption of a precautionary approach to management of those fish and wildlife stocks for which there is insufficient information;
- conservative management of species harvested in non-traditional fisheries to maintain viable population levels;

Key Task Force Responses

The Task Force supports the review and revision of management and assessment strategies as needed to protect biodiversity and ensure sustainable resources in Puget Sound and Georgia Basin.

The State of Washington has focussed its efforts on:

- protecting a diversity of species including birds, the harbour porpoise and a variety of fish and shellfish species;
- developing conservative management for sustainable resources including developing management and conservation plans for Puget Sound groundfish, forage fish and various shellfish including Olympia oysters;
- restricting harvest of stressed species such as Puget Sound rockfish, herring and invertebrates including marine snails, chitons and shore crab;
- developing ways to measure population sizes that do not rely on harvest landings.
- developing public education and stewardship programs to raise awareness on the importance of protecting marine resources; and
- publishing *Puget Sound's Health/2000* and the *Our Changing Nature* series.

British Columbia developed a report called *Protecting Plants and Animals in the Strait of Georgia: Ideas for Action*.

Future Direction

- British Columbia will develop an action plan and implementation strategy for the protection of marine plants and animals in its coastal waters.
- Many new actions are planned in Washington to halt the declines and foster recovery of depressed species.
- Washington and British Columbia agencies will continue to work closely together to protect marine life.
- A joint Washington/British Columbia protection of marine life strategy may be developed.

ESTABLISH MARINE PROTECTED AREAS

The Marine Science Panel noted that the establishment of Marine Protected Areas (MPAs) could effectively safeguard both natural habitats and the fish and wildlife that inhabit them. The panel's vision was to establish a transboundary MPA that would span the waters of Puget Sound and the Georgia Basin and encapsulate many of the important marine values and features attributed to both regions. The panel also recommended that a portion of each major marine and nearshore habitat type be protected in the shared waters.

Key Task Force Responses

- The Task Force supports MPAs with goals that include protecting biodiversity, maintaining sustainable natural resources, and improving stressed fishery species.
- The Washington work group developed a draft strategy for establishing MPAs in Puget Sound.
- The British Columbia work group developed a strategy for establishing MPAs on Canada's Pacific coast.
- In Washington, three state agencies are developing MPAs to provide protection of key habitats and to support a variety of functions including sustainable resources throughout Washington's marine waters.
- Washington Department of Fish and Wildlife adopted an MPA policy in 1998 and implemented seven new "Marine Reserves" and "Conservation Areas", increasing the number of WDFW MPAs by 50%.
- San Juan County developed an innovative approach to marine reserves, selecting a series of "Bottomfish Recovery Zones" as voluntary MPA sites.
- A joint federal-provincial Pacific Marine Heritage Legacy Initiative was announced in 1995 to expand the network of coastal and marine protected areas and assist in other integrated coastal planning processes in British Columbia.
- A Land and Coastal Resource Management Planning Process (LCRMP) for the British Columbia Central Coast was initiated in 1996. This strategic level comprehensive planning process will help identify potential MPAs.
- *Marine Protected Areas: A Strategy for Canada's Pacific Coast,* a draft discussion document, was developed.
- Two candidate MPA projects were announced in the Georgia Basin under Canada's Oceans Act in 1998.
- In 1998, Parks Canada announced a two-year feasibility study for a proposed National Marine Conservation Area in the southern Strait of Georgia.

Future Direction

- In Washington, work will continue to an overall MPA plan and on selecting new MPAs to be a part of a network.
- The Northwest Straits Marine Conservation Initiative is working to achieve a scientifically-based regional system of MPAs through seven county Marine Resources Committees.
- In British Columbia, recommendations on the proposed MPA Strategy will be put forward for final consideration. In addition, work on the MPA candidate projects, the southern Strait of Georgia feasibility study and CCLCRMP process will continue.

PREVENT NEARSHORE HABITAT LOSS

The loss of nearshore habitat was identified by the Marine Science Panel as one of the most significant concerns in the Puget Sound and Georgia Basin regions. The panel recommended that:

- a public process be initiated at the community level to determine the extent of habitat losses that are acceptable to society;
- no further loss of nearshore estuarine habitat should be allowed in embayments that have already lost more than 30% of their historic habitat area;
- no net loss of nearshore estuarine habitat should be permitted;
- habitat enhancement and restoration undertaken to compensate for habitat loss due to nearshore development, dredging and other activities should be carefully monitored; and
- additional nearshore habitat research should be undertaken.

Key Task Force Responses

The Washington and British Columbia work groups developed the following common objectives for conserving and restoring nearshore habitat:

- preserve and restore key nearshore habitats;
- inform citizens about the importance of nearshore habitat;
- encourage stewardship activities;
- learn more about the ecological functions of nearshore habitats;
- develop innovative and integrated plans that conserve important nearshore resources;
- administer effective regulatory programs; and
- coordinate across the border to achieve complementary and mutually desirable benefits.

The Washington Nearshore Habitat work group completed a report in 1998 entitled *Nearshore Habitat Loss in Puget Sound: Recommendations for Improved Management.* The report outlines a comprehensive approach to reduce nearshore habitat loss. It also completed, *Puget Sound Nearshore Habitat Regulatory Perspective: A Review of Issues and Obstacles.*

In 1999, the Puget Sound Water Quality Action Team produced, in coordination with the work group, the *Puget Sound Shoreline Stewardship Guidebook* and distributed it to 7,000 shoreline land-owners.

Other notable activities include:

- revising the *Shoreline Management Guidelines*;
- inventory and mapping of nearshore habitats;
- Rapid Zone Habitat Inventory;
- vegetation and substrate maps of Whatcom, Skagit and Island Counties
- kelp maps of Jefferson and Clallum Counties;
- the Puget Sound Shorelines Website; and
- the Shoreline Armouring Alternatives Project.

Future Direction

- In Washington, state and federal agencies, tribes and other entities, coordinated by the PSWQAT will continue to preserve, restore, enhance and monitor the ecological processes that create and maintain marine and freshwater habitats.
- The British Columbia work group's action plan is scheduled for completion in the autumn of 2000 and will be implemented through the partnership of the Georgia Basin Ecosystem Initiative.

PREVENT INTRODUCTION OF NON-INDIGENOUS SPECIES

The Marine Science Panel noted that the shared waters are at risk from the intentional or accidental introduction of non-indigenous species. The Panel recommended that the responsible agencies in Washington and British Columbia make serious efforts to prevent the introduction of non-indigenous species (NIS) by:

- establishing and enforcing strict ballast water discharge regulations;
- considering hatchery and aquaculture as a means to increase native species;
- developing protective protocols or best management practices for the handling, transport and disposal of NIS; and
- initiating a public education program to reduce intentional and inadvertent importation of non-indigenous species.

Key Task Force Responses

Work groups were established in 1995 to evaluate the risk of non-indigenous introductions and to propose to the ECC and regulatory agencies a strategy to minimize risks to the environment and economic well being of our communities. The groups developed a joint strategy for minimizing the introduction of non-indigenous species into shared waters as outlined in, *Pathways and Management of Marine Non-Indigenous Species in the Shared Waters of British Columbia and Washington*.

Through the efforts of the work groups, this issue now has a much greater priority in Washington and British Columbia and many actions are underway to prevent the introduction and spread of non-indigenous species.

- Washington State recently passed the *Exotics Species Committee Bill* and the *Ballast Water Monitoring Bill*;
- The Puget Sound Expedition: A Rapid Assessment Survey of Non-indigenous Species in the Shallow Waters of Puget Sound found 39 non-indigenous species in the area;
- British Columbia is consolidating inventory information on non-indigenous species.
- Fisheries and Oceans Canada is participating in the development of national guidelines to reduce the unintentional introduction and transfer of non-indigenous species in ballast water; and
- British Columbia is participating in the research of ballast treatment technologies, which would reduce the number of non-indigenous species introduced into the province.

Future Direction

- The Washington Aquatic Nuisance Species Coordinating Committee is replacing the Washington Workgroup and continues to work on preventing the introduction of non-indigenous species and monitoring and controlling established species.
- Under the United States' *National Invasive Species Act*, a Western Regional Panel comprising 18 states and four provinces was formed to address aquatic nuisance species in western water resources and will integrate and coordinate efforts.
- Increased emphasis will be placed on public education and stewardship activities through the production of identification guides for non-indigenous species and public participation in beach surveys.

Medium Priority Recommendations

Control Toxic Waste Discharges
Coordinate Research and Monitoring
Undertake Strategic Planning
Prevent Large Oil Spills
Prevent Major Freshwater Diversions

CONTROL TOXIC WASTE DISCHARGES

The Marine Science Panel noted that while some sources of toxic chemicals are being reduced, non-point sources of toxic chemicals remain a major obstacle to controlling sediment and microbial contamination in the shared waters. The Panel recommended continuing efforts to bring all point sources of toxic chemicals under control with additional emphasis placed on controlling non-point sources of pollution including surface water runoff from urban and industrial areas.

Key Task Force Responses

Toxic chemical work groups were established in British Columbia and Washington in 1998 to develop a joint strategy for minimizing the risks and introduction of toxic chemicals into the shared waters. Specific projects include:

- several bilateral research studies;
- an inventory of contaminated sites;
- descriptions of toxic chemicals issues; and
- an assessment of transboundary movement of toxic chemicals.

Future Direction

The toxic chemical work groups will undertake studies to identify the sources and effects of these substances in the Puget Sound/Georgia Basin ecosystem. Strategies will be developed to examine the following:

- the potential of environmental quality benchmarks to indicate reductions in toxic chemical pollution;
- controls on point and non-point sources of toxic chemicals; and
- initiatives to reduce concentrations of persistent, bio-accumulative toxic chemicals (PBTs) in the shared waters.

COORDINATE RESEARCH AND MONITORING

The Marine Science Panel recommended coordinated monitoring of transboundary waters, sediment and biota to answer ecological questions and provide information for determining environmental management policies.

Key Task Force Responses

The Task Force continues to promote interactions between the scientific communities on each side of the border whenever possible. Several bilateral research studies have been undertaken. However, limited progress has been made toward coordinated monitoring efforts due to other more pressing priorities.

- A report titled *Marine Sampling Methods Used in the Georgia Basin and Strait of Juan de Fuca by Canadian Scientists* was produced to advance the use of common sampling and analysis protocols, and

- a common protocol, "ShoreZone" has been developed for classification and mapping of nearshore habitat and is being applied to all marine waters of Washington State.

Future Direction

- The Task Force will continue to encourage interactions between scientists from Washington and British Columbia including bilateral research studies, and workshops and conferences, to share information or data on research, monitoring, inventory, and assessments.

- The Task Force will continue to work towards long term trend analysis of ecosystem status and trends and development of a *State of Shared Waters* report.

UNDERTAKE STRATEGIC PLANNING

The Marine Science Panel recommended that Washington and British Columbia undertake joint strategic planning that would encompass all aspects of the marine environment, the surrounding watersheds and any other human activities that might have an impact on aquatic resources.

Key Task Force Responses

A workshop on strategic planning took place in 1996 and identified a number of areas for additional collaboration including:

- monitoring programs;
- developing common habitat protection measures;
- serving as a clearinghouse of information and scientific data;
- establishing and managing marine protected areas;
- involving local government in marine protection;
- undertaking joint protection and management of marine plants and animals; and
- coordinating joint public education and public involvement activities.

Future Direction

- The Task Force will continue to support and encourage cross-border exchanges and cooperation, especially in the planning process, monitoring strategies, and the exchange of data.
- The Task Force will continue to develop partnerships and participate in the Georgia Basin Ecosystem Initiative, the Fraser Basin Council, the Puget Sound Water Quality Management Plan, and the Environment Canada/Environmental Protection Agency's Statement of Cooperation on the Puget Sound and Georgia Basin Ecosystem.

PREVENT LARGE OIL SPILLS

Although the possibility of a major oil spill still represents a serious ecological threat in the shared waters, the Marine Science Panel concluded that many impacts could be avoided or minimized through preventative and proactive measures such as:

- management efforts to ensure the safe transport of petroleum products;
- increased education activities; and
- an accelerated implementation schedule from the British Columbia/States Task Force on Oil Spill Prevention.

Key Task Force Responses

- Improved rescue tug capability for the Juan de Fuca Strait.
- Improved risk assessment activities.
- Continued work of the British Columbia/States Task Force on Oil Spill Prevention.

Future Direction

- Improve vessel traffic routing.
- Develop oil transfer standards.
- Phase out single-hulled oil tankers.
- Reduce non-oil pollution from vessels such as marine debris, ballast water and air pollution.
- Participate in review and update of the comparability analysis of shipping regulations on both sides of the strait.
- Promote citizen involvement in oil spill prevention and response dialogue on both sides of the border.

PREVENT MAJOR FRESHWATER DIVERSIONS

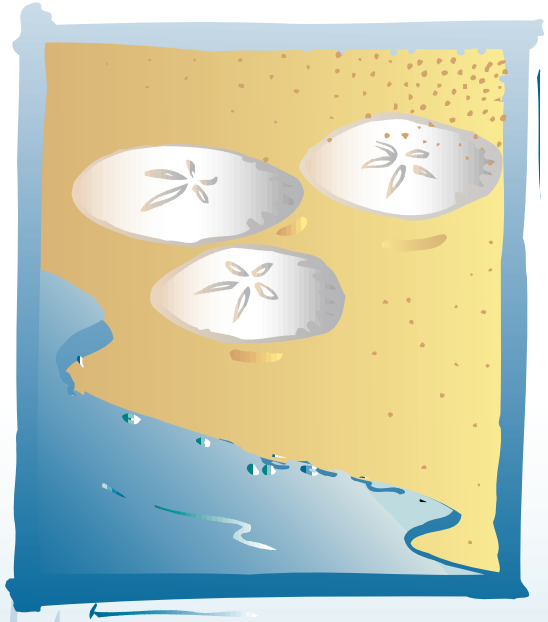
The Marine Science Panel was concerned that large freshwater diversions could destroy critical habitat and change important estuarine circulation patterns. The panel recommended that key streams and rivers be monitored to help ensure that water flow be maintained for safe fish passage and to note changes to estuarine circulation and salinity.

Key Task Force Responses

- Key river and stream flows have been monitored.
- In 1995, British Columbia passed the Water Protection Act which prohibits the export of bulk water out of British Columbia.
- In 1997, British Columbia passed the Fish Protection Act that provides legislative protection of water flows for fish. The Act also prevents any new bank-to-bank dams on many significant rivers in the Province including the Fraser River.
- In 1999, British Columbia announced the *Freshwater Strategy* which provides many water conservation measures and stewardship activities.

Future Direction

Given its other priorities and progress to date, the Task Force agrees with the Marine Science Panel that additional focussed efforts on preventing freshwater diversions are not required at this time.



Low Priority Recommendations

Ensure the Freedom of Scientific Information

Increase Communications Across Border

Comprehensive Program Audit

ENSURE THE FREEDOM OF SCIENTIFIC INFORMATION

The Marine Science Panel recommended that the British Columbia and Washington governments adopt a spirit of openness when conducting environmental research, as well as encourage the free exchange of ideas and information among all sectors of society.

Key Task Force Responses

The Task Force agrees with the Marine Science Panel and conducts itself in accordance with these recommendations.

Future Direction

Given its other priorities and progress to date, this has been identified as a low priority for additional Task Force work. However, attention will be given to resolving data sharing and access issues.

INCREASED COMMUNICATIONS ACROSS THE BORDER

The Marine Science Panel recommended strong collaboration between British Columbia and Washington scientists and managers as well as a program to educate and inform the public.

Key Task Force Responses

The Task Force agrees with the Marine Science Panel and conducts itself in accordance with these recommendations. In accordance with this, the Task Force:

- provides ongoing communications among agencies on transboundary marine issues;
- supports cooperation among agencies while maintaining awareness of organizational structures involved in marine issues;
- maintains the Puget Sound/Georgia Basin International Task Force Website and advertises meetings of the Task Force through the broad mailing list to about 500 interested parties;
- oversees implementation of work group recommendations;
- provides an organizational focus for transboundary marine issues by serving as a forum for public and stakeholders to engage agencies dealing with marine issues; and
- hosts workshops, seminars and meetings.

Future Direction

The Task Force will continue these activities:

- participating in meetings with stakeholders;
- publicizing significant transboundary issues and serve as a repository and link to such information; and
- collecting information on groups involved and act as a clearinghouse for this information.

A COMPREHENSIVE PROGRAM AUDIT

The Marine Science Panel recommended that "the Environmental Co-operation Council contract with an independent body to audit the goals and accomplishments of, and resource allocations to, programs and management activities that influence the shared waters and resources."

Key Task Force Responses

The Task Force agrees with the Marine Science Panel that this refers to an independent review of the performance of agencies.

Future Direction

The Task Force work is not the appropriate forum to undertake such an activity.

NEW CHALLENGES FOR THE TASK FORCE

The Task Force fulfills a unique organizational role. No other group provides a multi-agency, multi-stakeholder forum for transboundary marine issues in the Puget Sound and Georgia Basin area.

As the Task Force has addressed the majority of the Marine Science Panel recommendations, the Environmental Co-operation Council has asked that the group consider its future mandate. In response, the Task Force has employed a variety of means to assist in this consideration. These included a stakeholder telephone poll, two workshops, a questionnaire and discussions at various meetings.

Everyone seems to agree on one thing – the continuing need for a transboundary group to advance communication and co-operation among government agencies, tribes, First Nations, and stakeholders in the Puget Sound and Georgia Basin region. Based on the surveys and discussions, the following are some of the specific activities that were identified as requiring further attention by the Task Force:

- support transboundary cooperation by various organizations;
- identify, review and publicize emerging transboundary marine issues;
- provide ongoing communications among agencies;
- serve as a clearinghouse for information, data sources and contacts;
- collect and report information on transboundary marine issues;
- host workshops, seminars and meetings on transboundary marine issues;
- oversee transboundary work group recommendations;
- recommend action to protect and restore the marine environment; and
- facilitate discussions among the public and stakeholders.

While the Task Force plans to continue in its current institutional structure, it will remain open and responsive to institutional options that may become available in the future, such as playing a greater role in transboundary growth management and sustainability issues in the Puget Sound and Georgia Basin regions.

LIST OF KEY PUBLICATIONS AND ADDITIONAL INFORMATION

1) *Beyond the Border: Environmental Management in British Columbia and Washington* (Jan. 1, 1992). An issue paper prepared by Christine Nasser for U.S. EPA.

2) *Across the Border* (Sept. 30, 1992). Symposium proceedings and contacts for transboundary issues developed from a conference held in Bellingham, WA.

3) *Review of the Marine Environment and Biota of the Strait of Georgia, Juan de Fuca Strait and Puget Sound* (April, 1994). Proceedings of a scientific symposium held in Vancouver, B.C.

4) *Shared Marine Waters of British Columbia and Washington* (August 1994). The original Marine Science Panel report to the Environmental Cooperation Council.

5) *Shared Waters: The Vulnerable Inland Sea of British Columbia and Washington* (Nov., 1994). The summary document of the original Marine Science Panel report created for wider public dissemination.

6) *Marine Monitoring in the Border Areas* (Nov., 1994). A report prepared by John Armstrong summarizing general monitoring programs within Puget Sound and the Georgia Basin; includes location of stations on maps, metadata on types of information/ data collected and gives program contact.

7) *Laboratories and Field Stations of the Inland Marine Waters of Washington and British Columbia* (1995). A report prepared by John Armstrong and Kali Rembold. This report lists research facilities available in Puget Sound and the Georgia Basin and contact information.

8) *Puget Sound/Georgia Basin International Task Force brochure* (1996). Explains international process and how to get involved.

9) *Puget Sound/Georgia Basin International Task Force Workshop: Strategic Planning in the Shared Waters – Workshop Summary* (May, 1996). A report produced by Dovetail Consulting. The Workshop came out of a recommendation by the Marine Science Panel to undertake joint, cross-border strategic planning for the resources of the Puget Sound-Georgia Basin region. The workshop focused on identifying short- and long-term opportunities for Washington and British Columbia to work together.

10) *Marine Sampling Methods Used in the Georgia Basin and Strait of Juan de Fuca by Canadian Scientists* (June, 1996). A report prepared by the Water Quality Branch at BC Ministry of Environment, Lands and Parks assessing the ability to use the Puget Sound Protocols in BC waters.

11) *Puget Sound/Georgia Basin 1995 Transboundary Survey: Analytical Results for a Georgia Basin Bottomfish Survey* (July 23, 1996). A report prepared by Washington Department of Fish and Wildlife comparing the results of a bottomfish survey conducted in May 1995 with British Columbia and Washington government scientists.

12) *Pathways and Management of Marine Non-indigenous Species in the Shared Waters of British Columbia and Washington* (March, 1997). A report written by Ralph Elston of Battelle Laboratories. This report identifies potential threats from new exotics in the shared waters, identifies pathways of entry and makes general recommendations for preventing further unintentional introductions.

13) *Protection and Restoration of Marine Life in the Inland Waters of Washington State* (May, 1997). A report written by James E. West. This report identifies the stressed biological species in the shared waters and the probable causes of this stress. The report also out-lines preliminary recommendations to be reviewed by the Marine Life Protection work group.

14) *Development and Application of a GIS Methodology to Monitor Estuarine Habitat Loss in the Strait of Georgia using Aerial Photographs* (May 16, 1997). A report prepared by LGL Limited for the Department of Fisheries and Oceans. This report examines GIS systems used on both sides of the border by various levels of government to monitor nearshore habitat.

15) *Puget Sound Marine Protected Areas Strategy Discussion Paper* (Jan., 1998 – draft). This draft report describes the need for marine protected areas to serve as nursery areas for depressed species in Puget Sound. The discussion paper also presents alternatives for a governance structure that would establish a network of sites. This paper will be discussed in a variety of public forums to be held throughout 1998. A final report can be expected in 1999.

16) *Strategy to Minimize the Introduction of Non-Indigenous Species to the Shared Waters of Puget Sound and the Georgia Basin* (June 2, 1997). A joint strategy prepared by the BC and Washington Work Groups on minimizing the introductions of exotic species. The document outlines joint principles, key elements and outcomes, seven areas for implementation.

17) *Marine Non-Indigenous Species In Washington and British Columbia: Implementation Plan* (June 6, 1997). A report outlining approximately 70 action items in Washington to prevent introductions of exotics into the shared marine waters. Action items focus on education, monitoring, research, controls, legislative analysis, response planning and coordination. A draft action list is also available for British Columbia.

18) *Cooperative Ecosystem Management Canada and U.S.: Approaches and Experiences of Programs in the Gulf of Maine, Great Lakes and Puget Sound/Georgia Basin* (July 23, 1997). A report prepared for Coastal Zone '97 by Larry Hildebrand, Victoria Pebbles and Holly Schneider Ross. This report analyzes the similarities and differences among these three transboundary ecosystem management efforts between Canada and the U.S.

19) *Nearshore Habitat Regulatory Perspective: A Review of Issues and Obstacles Identified by Shoreline Managers* (March, 1998). A technical report prepared by Ginny Broadhurst of the Puget Sound Water Quality Action Team that characterizes loss of habitat in Puget Sound and provides a regulatory analysis of current habitat management in Washington state.

20) *The Status of Marine Protected Areas in Puget Sound* (March, 1998; Revised Sept., 1998). A technical report prepared by Michael Murray for the Marine Protected Areas work group detailing the locations of over 100 marine protected areas in Washington waters and the degree of protection they currently offer marine resources.

21) *Nearshore Habitat Loss in Puget Sound: Recommendations for Improved Management* (October, 1998). This report was prepared by the Nearshore Habitat Loss Work Group in Washington detailing 79 recommendations for improving habitat management and preventing further losses. The report focuses on 6 key areas: regulations, planning, education, reservation/ restoration, research/ inventory, transboundary coordination.

22) *Strategy and Recommended Action List for Protection and Restoration of Marine Life in the Inland Waters of Washington State* (November, 1998). This report was prepared by the Washington Protect Marine Life Work Group and details 32 pages of specific recommendations regarding the 13 species listed as depressed (West, 1997). Recommendations cover harvest practices and limitations, habitat protection measures, pollution control, ecosystem effects and disturbance.

23) Murray-Metcalf Northwest Straits Citizens Advisory Commission's Report to Convenors (August, 1998). This report provided the recommendations subsequently authorized by Congress, to establish seven Marine Resources Committees and a Northwest Straits Commission to protect and restore marine resources in the Northwest Straits.

Draft Reports

1) *Protecting Plants and Animals in the Strait of Georgia: Ideas for Action* (1997). A draft report prepared by the Protect Marine Life Work Group in British Columbia, chaired by R.J. Beamish, Department of Fisheries and Oceans. This report outlines general recommendations for integrated management of biological resources and stewardship of those resources in British Columbia.

2) *Puget Sound Marine Protected Areas Strategy Discussion Paper* (Jan., 1998 – draft). This draft report describes the need for marine protected areas to serve as production and nursery areas for depressed species in Puget Sound. The discussion paper also presents alternatives for a governance structure that would establish a network of sites.