Welcome to the 2005 Puget Sound Georgia Basin Research Conference. This booklet is your guide to three days of what we hope will be an informative and engaging program. In this booklet you will find information on the oral presentations included in each concurrent session, a description of the poster presentations and a quick-reference grid of the conference agenda.

Please stop by the Conference Information Center in the 6th East Lobby if you have questions.

Enjoy the conference!

KEYNOTE PRESENTER

Dr. Joe Gaydos  
Tuesday AM General Session

Joe Gaydos is a wildlife veterinarian and the Regional Director for the SeaDoc Society, a marine ecosystem health program of the UC Davis Wildlife Health Center. A passionate observer of wildlife, he is interested in ensuring that good science is conducted and used to restore and better manage populations of marine fish and wildlife. He also studies diseases of free-ranging wildlife and how they impact the health of wildlife populations. Joe lives with his wife and two girls on Orcas Island where they like to hike, camp, beachwalk and kayak.

Public Forum  
Wednesday, March 30

Please join us for an interactive, moderated discussion of the Deployment of Science in the Transboundary Region with elected officials and representatives of the scientific community. Open to the general public.

6:30 PM Reception
Welcome Comments from: Mr. Jeffrey Parker, Consul General of Canada

7:30 PM Panel Discussion
Moderator: Brad Ack, Chair, Puget Sound Action Team

Panel Members:
• Mike Harcourt, former Mayor of Vancouver and former Premier of British Columbia
• Ron Sims, King County Executive
• Jay Manning, Director of Washington State Department of Ecology
• Tracy Collier, Acting Director of the Environmental Conservation Division, NOAA Fisheries
• other panelist to be determined

Our thanks to the Canadian Consulate in Seattle for their support of this special event.
GENERAL INFORMATION

Conference Location
All conference activities including sessions, posters, lunches and receptions will take place in 6th Floor meeting space in the Washington State Convention and Trade Center.

Registration Desk
6th Floor East Lobby
Hours:  Monday: 6:00–8:00 pm
       Tuesday: 7:30 am - 5:00 pm
       Wednesday: 7:30 am - 5:00 pm
       Thursday: 7:30 am - 3:30 pm
Conference staff will be wearing blue ribbons and will be available to answer questions you may have throughout the conference.

Name Badges
Your name badge is required for admission to all sessions, lunches and other conference activities. Please wear it at all times. At the end of the meeting, you may recycle your name badge at the Registration Desk.

Lunches
Daily lunches will be served in ballroom 6B, next to the Poster Hall. Please set your lunch ticket at your place to be collected by your server. If you requested vegetarian meals, “Vegetarian” is printed on your lunch ticket.

Refreshment Breaks
Refreshment breaks will be served in the Poster Hall (6C) and in the 6th Floor East Lobby. Please refer to the program detail for scheduled break times.

Messages
The message board will be located in the 6th East Lobby near the Registration Desk.

Cellular Phones and Pagers
Please turn the sound off on your cellular phones and pagers during sessions as a courtesy to the speakers and other participants.

Concurrent Sessions
Presentation times for each session are listed in the program detail. Program is subject to change.

Poster Hall
Ballroom 6C
The 2005 Research Conference will highlight the poster presentations with expanded interactive poster sessions on all three days of the meeting.
Poster Session Schedule:
   Tuesday Poster Session Gala: 4:30-6:00 pm
   Wednesday Poster Session: 2:30-3:30 pm
   Thursday Poster Session: 9:30-10:30 am
In addition to the poster sessions, posters will be available for viewing throughout the conference including during continental breakfasts, after lunch and during morning and afternoon breaks.
Poster authors: Please set up your poster on Tuesday morning from 7:00-9:30 am. Posters should be removed after the lunch break on Thursday.

Press Room
Room 614 will be available for news and media-related needs throughout the conference. Please check in at the Registration Desk for a badge and access to the Press Room.

Session Chairs
Session chairs are asked to attend a preparatory morning meeting on the day of your session. In these meetings we will review presentation guidelines and introduce time-keepers for each session. Continental breakfast will be provided. The session chair meetings will take place at the following times (please note that the times are different each day):
   8:45 am, Tuesday
   7:45 am, Wednesday
   7:15 am, Thursday

Speaker Prep Room
The Speaker Prep room is located in Room 613. Speakers who plan to use computer projection should bring electronic files (saved to a CD or USB flash drive and clearly labeled with presenter name, session and title) to the Speaker Prep Room in advance so that all presentations may be pre-loaded on session room computers. For morning sessions, turn in your presentation the day before your session. For afternoon sessions, turn in your presentation in the morning on the day of your session. Audiovisual technicians will be available to load your presentation onto the computers that will be supplied for your use.

Conference Proceedings
Conference organizers will publish full proceedings. A CD-ROM containing the Proceedings of the 2005 Puget Sound Georgia Basin Research Conference will be sent to all conference attendees by August of 2005. Additional copies will be available for purchase from the Puget Sound Action Team. Proceedings will also be available on-line. Until the Proceedings are available, please refer to the abstract book included in your conference packet for abstracts of conference presentations and biographical information on presenters.

Note to authors: The submission deadline for full manuscripts or extended abstracts is Thursday, March 31. Disks or CDs may be turned into the Speaker Prep Room.

Closing Session / Student Awards
The closing plenary session scheduled for 4:30–5:30 pm in Ballroom 6A on Thursday, March 31 will feature a conference wrap up from the co-chairs, and a recognition ceremony for those students who presented exceptional technical papers and posters. Students will be evaluated during the course of the conference.

Poster Gala

TUESDAY, MARCH 29
4:30–6:00 PM
POSTER HALL, BALLROOM 6C
• Outstanding posters
• Decision support tools
• Food and drink
• Band: Pearl Django
Please join us for this special event!
## TUESDAY - MARCH 29, 2005

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am</td>
<td>Conference Check-In &amp; Coffee Service</td>
<td>6th Floor East Lobby</td>
</tr>
<tr>
<td>9:30-11:45am</td>
<td>Opening General Session</td>
<td>Ballroom 6A</td>
</tr>
<tr>
<td></td>
<td>Welcome</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sarah Brace, Conference Co-Chair, Puget Sound Action Team</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tribal Welcome</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Terry Williams, Tulalip Tribes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Opening Remarks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brad Ack, Chair, Puget Sound Action Team</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don Fast, Regional Director General, Environment Canada</td>
<td></td>
</tr>
<tr>
<td>12:00–1:00pm</td>
<td>Opening Luncheon</td>
<td>Ballroom 68</td>
</tr>
<tr>
<td></td>
<td>Governor Christine Gregoire will address the conference participants</td>
<td></td>
</tr>
<tr>
<td>1:00–2:30pm</td>
<td>Concurrent Sessions 1</td>
<td></td>
</tr>
<tr>
<td>Room 609</td>
<td>Session A1</td>
<td></td>
</tr>
<tr>
<td>Room 611</td>
<td>Session B1</td>
<td></td>
</tr>
<tr>
<td>Room 606</td>
<td>Session C1</td>
<td></td>
</tr>
<tr>
<td>Room 612</td>
<td>Session D1</td>
<td></td>
</tr>
<tr>
<td>Room 607</td>
<td>Session E1</td>
<td></td>
</tr>
<tr>
<td>Room 608</td>
<td>Session F1</td>
<td></td>
</tr>
<tr>
<td>2:30–3:00</td>
<td>Break and Poster Viewing</td>
<td>Poster Hall &amp; 6th Floor East Lobby</td>
</tr>
<tr>
<td>3:00–4:30pm</td>
<td>Concurrent Sessions 2</td>
<td></td>
</tr>
<tr>
<td>Room 609</td>
<td>Session A2</td>
<td></td>
</tr>
<tr>
<td>Room 611</td>
<td>Session B2</td>
<td></td>
</tr>
<tr>
<td>Room 606</td>
<td>Session C2</td>
<td></td>
</tr>
<tr>
<td>Room 612</td>
<td>Session D2</td>
<td></td>
</tr>
<tr>
<td>Room 607</td>
<td>Session E2</td>
<td></td>
</tr>
<tr>
<td>Room 608</td>
<td>Session F2</td>
<td></td>
</tr>
<tr>
<td>4:30–6:00pm</td>
<td>Poster Gala</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poster Session • Refreshments • Music</td>
<td></td>
</tr>
</tbody>
</table>

## WEDNESDAY - MARCH 30, 2005

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am</td>
<td>Coffee Service &amp; Poster Viewing</td>
<td>Poster Hall &amp; 6th Floor East Lobby</td>
</tr>
<tr>
<td>8:30–10:00am</td>
<td>Concurrent Sessions 3</td>
<td></td>
</tr>
<tr>
<td>Room 607</td>
<td>Session A3</td>
<td></td>
</tr>
<tr>
<td>Room 611</td>
<td>Session B3</td>
<td></td>
</tr>
<tr>
<td>Room 606</td>
<td>Session C3</td>
<td></td>
</tr>
<tr>
<td>Room 612</td>
<td>Session D3</td>
<td></td>
</tr>
<tr>
<td>Room 609</td>
<td>Session E3</td>
<td></td>
</tr>
<tr>
<td>Room 608</td>
<td>Session F3</td>
<td></td>
</tr>
<tr>
<td>10:00–10:30am</td>
<td>Break &amp; Poster Viewing</td>
<td>Poster Hall &amp; 6th Floor East Lobby</td>
</tr>
<tr>
<td>10:30am–Noon</td>
<td>Concurrent Sessions 4</td>
<td></td>
</tr>
<tr>
<td>Room 607</td>
<td>Session A4</td>
<td></td>
</tr>
<tr>
<td>Room 611</td>
<td>Session B4</td>
<td></td>
</tr>
<tr>
<td>Room 606</td>
<td>Session C4</td>
<td></td>
</tr>
<tr>
<td>Room 612</td>
<td>Session D4</td>
<td></td>
</tr>
<tr>
<td>Room 609</td>
<td>Session E4</td>
<td></td>
</tr>
<tr>
<td>Room 608</td>
<td>Session F4</td>
<td></td>
</tr>
<tr>
<td>12:00–1:00pm</td>
<td>Lunch &amp; Poster Viewing</td>
<td>Ballroom 6B &amp; Poster Hall</td>
</tr>
<tr>
<td>1:00–2:30pm</td>
<td>Concurrent Sessions 5</td>
<td></td>
</tr>
<tr>
<td>Room 609</td>
<td>Session A5</td>
<td></td>
</tr>
<tr>
<td>Room 611</td>
<td>Session B5</td>
<td></td>
</tr>
<tr>
<td>Room 606</td>
<td>Session C5</td>
<td></td>
</tr>
<tr>
<td>Room 608</td>
<td>Session D5</td>
<td></td>
</tr>
<tr>
<td>Room 607</td>
<td>Session E5</td>
<td></td>
</tr>
<tr>
<td>Room 612</td>
<td>Session F5</td>
<td></td>
</tr>
</tbody>
</table>
**WEDNESDAY - MARCH 30, 2005**

<table>
<thead>
<tr>
<th>2:30–3:30pm</th>
<th>POSTER SESSION (with refreshments)</th>
<th>Poster Hall (6C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30–5:00pm</td>
<td>CONCURRENT SESSIONS 6</td>
<td></td>
</tr>
<tr>
<td>Room 609</td>
<td>Session A6</td>
<td>Room 611</td>
</tr>
<tr>
<td>Avian Populations: Their Habitat Use and Human Influence Near the Salish Sea</td>
<td>New Toxics Research</td>
<td>New Toxics Research</td>
</tr>
<tr>
<td>Room 606</td>
<td>Session C6</td>
<td>Room 608</td>
</tr>
<tr>
<td>BC/WA Marine Science Panel: 10 Years Later</td>
<td>Hood Canal: Corrective Actions</td>
<td>Hood Canal: Corrective Actions</td>
</tr>
<tr>
<td>Room 607</td>
<td>Session E6</td>
<td>Room 612</td>
</tr>
<tr>
<td>Session E6 Coastal and Watershed Planning</td>
<td>Restoration: Illustrating Process-Based Restoration Concepts I</td>
<td></td>
</tr>
</tbody>
</table>

| 5:00–6:30pm | Dinner Break (on your own) |
| 6:30–9:00pm | Reception and Evening Forum |

**THURSDAY - MARCH 31, 2005**

| 7:30am | Coffee Service & Poster Viewing | Poster Hall & 6th Floor East Lobby |
| 8:00–9:30am | CONCURRENT SESSIONS 7 |
| Room 611 | Session A7 | Room 612 | Session B7 |
| Workshop: Recent Forage Fish Science and Management | Urbanization Impacts |
| Room 606 | Session C7 | Room 607 | Session D7 |
| Panel: Ecological Indicators of the Transboundary Area | Panel: Getting Started on Integrated Assessment for the Puget Sound Ecosystem |
| Room 609 | Session E7 | Room 608 | Session F7 |
| Session E7 Marine Waters Forcasting and Variability | Restoration: Illustrating Process-Based Restoration Concepts II |

| 9:30–10:30am | POSTER SESSION (with refreshments) | Poster Hall (6C) |
| 10:30–Noon | CONCURRENT SESSIONS 8 |
| Room 611 | Session A8 | Room 612 | Session B8 |
| Shellfish: Science and Management | Smart Growth and Low Impact Development |
| Room 606 | Session C8 | Room 609 | Session D8 |
| Governance and Institutional Design | Contaminants in the Puget Sound and Georgia Basin — An Ecosystem Perspective |
| Room 607 | Session E8 | Room 608 | Session F8 |
| Session E8 Environmental Education and Outreach II | Restoration: Restoration Science and Practice |

| 12:00–1:00pm | Lunch & Poster Viewing | Ballroom 6B & Poster Hall |
| 1:00–2:30pm | CONCURRENT SESSIONS 9 |
| Room 611 | Session A9 | Room 612 | Session B9 |
| Contaminants in Humans and Wildlife I | Community Basin Planning |
| Room 606 | Session C9 | Room 609 | Session D9 |
| Aquatic Nuisance Species and Invasives II | Marine Conservation |
| Room 607 | Session E9 | Room 608 | Session F9 |
| Session E9 Focus Studies Related to Shorebirds and Passerines Along the Salish Sea | Restoration: Advancing the Science of Restoration |

| 2:30–3:00pm | Break | 6th Floor East Lobby |
| 3:00–4:30pm | CONCURRENT SESSIONS 10 |
| Room 611 | Session A10 | Room 612 | Session B10 |
| Contaminants in Humans and Wildlife II | Non-Point Pollution Impacts on Water Quality |
| Room 606 | Session C10 | Room 609 | Session D10 |
| Panel: Oil Spill Prevention and Response in the Puget Sound Georgia Basin | Marine Protected Areas |
| Room 607 | Session E10 | Room 608 | Session F10 |
| Session E10 Tourism: Opportunities and Impacts | Restoration: The Future of Restoration |

| 4:30–5:30pm | Closing Session and Student Awards | Ballroom 6A |
Tuesday, March 29, 2005

7:30am  Conference Check-In / Coffee Service
6th Floor East Lobby

7:30–9:30am  Poster Set-up
Poster Hall – Ballroom 6C

9:30–11:45am  Opening Plenary Session
Ballroom 6A

Welcome
Sarah Brace, Conference Co-Chair
Puget Sound Action Team
David Fraser, Conference Co-Chair
Environment Canada

Tribal Welcome
Terry Williams, Tulalip Tribes

Coast Salish Welcome
TBD

Opening Remarks
Brad Ack, Chair, Puget Sound Action Team
Don Fast, Regional Director General, Environment Canada

Keynote Address
Research and Conservation in the Puget Sound Georgia Basin: where we’ve been and where we are going.
Dr. Joe Gaydos, Regional Director and Wildlife Veterinarian
The SeaDoc Society, UC Davis Wildlife Health Center

11:45am–Noon  Break and Poster Viewing

Noon–1:00  Opening Lunch
Ballroom 6B

Governor Christine Gregoire will address the conference participants from 12:30–12:45.

1:00–2:30PM  CONCURRENT SESSIONS 1

Session A1: Elwha River Restoration I
Chair: Christopher Konrad
Room: 609

1:00pm  Alteration of channel and ecosystem dynamics downstream of Elwha dams
Tim Beechie*, Martin Liermann, Ali Senauer, Kris Kloehn, Sarah Morley

1:15pm  Monitoring and analysis of sediment transport in the Elwha River
Christopher Konrad*

1:30pm  Pre-dam removal monitoring in the Elwha River Basin: establishing baseline conditions for primary and secondary productivity

1:45pm  Pre-dam removal monitoring in the Elwha River Basin: establishing baseline levels of stable isotopes in fish and benthic communities
Jeffrey Duda*, Sarah Morley, Holly Cee, Martin Liermann, Kris Kloehn, Reginald Reisenbichler, Jerome Freilich, George Pess, Brian Winter, Peter Kiffney, Patrick Connolly, Ian Jezorek

2:00pm  Shoreline Change near the Elwha River - Impacts of Dams and Dam Removal.
Jonathan Warrick*, Guy Geffenbaum, Peter Ruggiero, Jim Johannesson, Matt Beirne

Session B1: Wastewater Impacts
Chair: Kimberle Starke
Room: 611

1:00pm  Application of cautions, warnings and triggers to benthos for the GVRD marine WWTP outfalls
Brenda Burd*, Albert van Roodseelaar, Stanley Bertold

1:15pm  Balancing Wastewater Disposal and Shellfish Protection at the Very End of Puget Sound
Bill Fox*, Merita Trohimovich, Skip Albertson, Frank Meriwether

1:30pm  The Sea Environmental Assessment, Communication, and Health (BEACH) Program: Results and Trends from 2004
Lynn Schneider*, Jessica Archer, Sue Davis, Jan Newton

1:45pm  Brightwater Marine Outfall: Overview of Status and Potential for Impacts to Puget Sound
Jim Simmonds*

2:00pm  Reducing Combined Sewer Overflows at Denny Way
Anne Symonds*

2:15pm  Controlling mercury from dental waste: A success story
Elsie Hulsizer*, Patricia Magnuson

Session C1: Freshwater Ecosystems
Chair: Rob Plotnikoff
Room: 606

1:00pm  Biological Stream Assessment at Federal-Provincial Water Quality Stations in the Georgia Basin
Stephanie Sylvestre*, Andrea Ryan

1:15pm  Calculation of the CCME Water Quality Index for Selected Rivers in the Georgia Basin
Andrea Ryan*, Beverly McNaughton, Stephanie Sylvestre

1:30pm  Estuary Feasibility Study for Capitol Lake
Steven W Morrison*, Perry Lund

2:00pm  A process-based morphological model of Capitol Lake
Douglas George*, Guy Geffenbaum, Giles Lesser, Bob Barnard, Perry Lund

2:15pm  Tributary junctions as hotspots for biological productivity and diversity
Correigh Greene*, Peter Kiffney, Jason Hall

Session D1: Traditional Ecological Knowledge
Chair: TBD
Room: 612

1:00pm  Learning Experiences from the Bioaccumulative Toxics in Native American Shellfish Project
Jamie Donatuto*

1:15pm  Plant communities in a cultural landscape: incorporating aesthetics and historical land use in managing Iceberg Point (Lopez Island, WA)
Madrona Murphy*

1:30pm  Native Uses Of Wetlands And Natural Resources Planning: The Swinomish Indian Tribal Community’s Wetlands Cultural Assessment
Todd Mitchell*

*Presenting Author
**Session E1: Climate Change: Variation and Change**

*Chair: Mark Johannes*

*Room: 607*

1:00pm  **Simulating Future Streamflows in Rainfall Driven Rivers in British Columbia Using IHACRES and Improved Climate Downscaling**  
Paola Allamano, Alex Cannon, Paul Whitfield*

1:15pm  **Long-term variability and change in freshwater inputs to Puget Sound**  
Philip Mote*, Alan Hamlet, Nathan Mantua

1:30pm  **Climate Model Downscaling for Regional Impacts Studies**  
Eric Salathe*

1:45pm  **Impacts of Climate Variation and Change Events on Salmon Populations in Southern British Columbia: Implications for Conservation and Restoration**  
Kim Hyatt*

2:00pm  **Adaptive Management of Water Resources in the Puget Sound**  
Lance Vail*

2:15pm  **Climate Change and the City of Seattle’s Water Supply**  
Matthew W. Wiley*, Richard N. Palmer

---

**Session F1: Restoration: Assessing the State of the Ecosystem**

*Chair: Dennis Dauble*

*Room: 608*

1:00pm  **Soils for Salmon: Restoring Soil and Watershed Functions with Organics**  
David McDonald*

1:15pm  **Port of Seattle Pier 64/65 Thin-Layer Sediment Cap and Bell Harbor Marina Projects Habitat Mitigation Monitoring Results 1999-2002**  
Gerald Erickson*, Gary Mauseth, Leslie Sacha, Douglas Hatchkiss

1:30pm  **A Novel Approach to Sample for River Water Quality in the Fraser Estuary**  
Mark Sekela, Taina Tuominen, Gail Moyle, Melissa Gledhill*

1:45pm  **Juvenile Chinook salmon (Oncorhynchus tshawytscha) utilization of estuarine distributory channel and nearshore marine habitats of the Snohomish River, Washington.**  
Mindy Rowse*, Kurt Fresh, Brian Keldar, Anna Kagley

2:00pm  **Environmental Biomarkers and the Health of Ecosystems**  
Irvin Schultz*, Charlie Bradt

---

2:30–3:00pm  **Break and Poster Viewing**  
*East Lobby and Poster Hall*

---

**Session A2: Marine Mammals**

*Chair: John Calambokidis*

*Room: 609*

3:00pm  **Do Orcas Use Symbols?**  
Howard Garrett*

3:15pm  **Diving behavior of “southern resident” killer whales in the trans-boundary waters of British Columbia and Washington: implications for foraging ecology**  
Robin Baird*, Brad Hanson

3:30pm  **A tale of two porpoise species: Seasonal movements and habitat use of Dall’s and harbor porpoise in the Salish Sea as determined by radio-telemetry**  
Brad Hanson*, Robert Delong

3:45pm  **Science and industry: Bridging the gap to identify harbour porpoise (Phocoena phocoena) seasonal movements and habitat use.**  
Anna Hall*, Andrew Trites

4:00pm  **Gray whales in Puget Sound and surrounding waters: not just migrants**  
John Calambokidis*

4:15pm  **Humpback whales in the Puget Sound/Georgia Strait Region**  
Erin Falcone*, John Calambokidis, Gretchen Steiger, Mark Malleson, John Ford

**Session B2: Stormwater Impacts**

*Chair: Alice Cheung*

*Room: 611*

3:00pm  **Trace Metal Retention in Urban Stormwater Ponds in the Lower Fraser Valley, B.C.**  
Julia Bryden*, Hans Schreier, Ken Hall

3:15pm  **Ecological significance of sediment biotic and geochemical effects related to the Iona WWTP outfall discharge to the Strait of Georgia off Sturgeon Bank**  
Brenda Burd*, Stanley Bertold, Cathy McPherson, Valerie Macdonald

3:30pm  **Stormwater Research Needs Identified in Conjunction with Updating WSDOT’s Highway Runoff Manual**  
Kenneth Stone*

3:45pm  **The ENVVEST Approach for Stormwater Pollutant Loading in the Sinclair- Dyes Inlet Watershed**  
Jill Brandenberger*, Chris May, Eric Crecelius, Martin Miller, Robert Johnston, Jerry Sherrell

4:00pm  **Great (Wet) Streets: Merging Street Design and Stormwater Management to Improve Neighborhood Streets**  
Stephanie Hurley*, Megan Wilson*

*Presenting Author
**Session C2: Population Genetics and Phylogeography**  
Chair: Lorenz Hauser  
Room: 606  

3:00pm  The Biogeography and Molecular Diversity of *Mastocarpus papillatus* (Rhodophyta, Phyllophoraecae)  
Sandra Lindstrom*  

3:15pm  Sharks in the Salish Sea: Broad- and fine-scale phylogeography of the spiny dogfish (*Squalus acanthias*)  
James Franks*, Nicci Vega, Vince Gallucci, Lorenz Hauser  

3:30pm  Long-term changes in population structure and genetic diversity of Pacific herring (*Clupea pallasi*) in Puget Sound  
Danielle Mitchell*, Greg Bargmann, Pat McAllister, Lorenz Hauser  

3:45pm  Finding Nemo in Puget Sound: parental identification of brown rockfish juveniles  
Lorenz Hauser*, Lyndsay Newton, Larry LeClair, Ray Buckley  

4:00pm  Decadal changes in genetic diversity of Puget Sound coho salmon  
William Eldridge*, Kerry Naish, Jim Myers  

---  

**Session D2: Sediment Contamination**  
Chair: John Dohrmann  
Room: 612  

3:00pm  Sedimentation and contaminant loading: impacts on eelgrass (*Zostera marina*) bed health in northern Puget Sound  

3:15pm  Recontamination Sources at Three Sediment Caps in Seattle  
Patrick Romberg*  

3:30pm  Spatial and temporal patterns in sediment quality at the Point Grey disposal site  
Robert Wilson*, Sarah McKinnon, Dixie Sullivan  

3:45pm  Effects of a Breach Fill Maintenance Project on Benthic Communities in Half Moon Bay, Westport, WA  
John Nakayama*, Peter Striplin, Christopher Hunt, Stephen Martin  

4:00pm  Port of Seattle Pier 64/65 Thin-Layer Sediment Cap Monitoring Results 1994-2004  
Gerald Erickson*, Gary Mauseth, Leslie Sacha, Douglas Hotchkiss  

4:15pm  Dredging residuals happen - anticipation and management of residuals are key to successful sediment remediation projects.  
Jeffrey Stern*, Clay Patmont  

---  

**Session E2: Marine Waters Climate Change**  
Chair: Mark Johannes  
Room: 607  

3:00pm  Will Global Warming Impact Eelgrass in the Pacific Northwest?  
Ron Thom*, Lohna O’Rourke, Susan Sargeant, Amy Borde  

3:15pm  An Examination of Climate and Fisheries Effects Upon Ecosystem Dynamics of the Strait of Georgia Compared to Larger Northeast Pacific Ecosystems  
David Freirksh*, Villy Christensen, Richard Beamish, Daniel Pauly  

3:30pm  Exploring adaptation to climate variation and change: important issues and lessons to be learned in Puget Sound and the Georgia Basin.  
Mark Johannes*  

3:45pm  Co-variability of the Strait of Georgia and the northeast Pacific Ocean on climatic time scales  
Patrick Cummins*, Diane Masson  

4:00pm  Identifying and separating impacts of climate change and seal predation on the distribution and abundance of herring in the Strait of Georgia  
Doug Hay, Bruce McCarter, Kristen Daniel, Tom Therriault*  

4:15pm  Climate related variation in Puget Sound density and oxygen  
Jan Newton*, Julia Bos, Skip Albertson  

---  

**Session F2: Case Studies: Impacts of Human Activities**  
Chair: Mike Sato  
Room: 608  

3:00pm  Effects of forest harvesting on soil amorphous aluminosilicates (imogolite-type material) and implications for water quality  
Stephanie Grand*, Dr. Leslie Lavkulich, Dr. Robert Hudson  

3:15pm  North Bay Case Inlet Water Reuse Facility  
James Dougherty*, Harry Sellers  

3:30pm  Reducing the installation impact of submarine cables on eelgrass (*Zostera marina*): Details of a new technique.  
Terry Turner*, Sandy Wyllie-Echeverria, Shaun Austin  

3:45pm  Northwest Straits Commission Derelict Fishing Gear Removal Project  
Tom Cowan, Jeff June, Sasha Horst*  

4:00pm  Environmental Impacts of Recreational Boating in the Gulf Islands National Park Reserve of Canada  
Kate Leatherbarrow*, Phil Dearden, Cliff Robinson  

---  

**Poster Gala**  
Ballroom 6BC  

Poster Session with refreshments and entertainment.  
See poster listing on pages 34–40  

*Presenting Author
**Wednesday, March 30, 2005**

**7:30am** Coffee Service / Poster Viewing
6th Floor East Lobby & Poster Hall

**8:30–10:00am** Concurrent Sessions 3

**Session A3: Focus on Fish I**
Chair: James Shannon
Room: 607

- 8:30am Juvenile Salmon Baseline Studies in the Nisqually Estuary: 2002-2004 Results
  Sayre Hodgson*, Christopher Ellings, Kyle Brakensiek, Rick Coshow
- 8:45am Seasonal Response of an Aquatic Macroinvertebrate Community to Salmon Spawning
  Jon Honea*, Robert Gara
- 9:00am Above the dam: salmon colonization in the Cedar River, Washington
  Joseph Anderson*, Thomas Quinn
- 9:15am High straying rates of hatchery coho in upper Hood Canal tributaries
  Peter Bahls*
- 9:30am Spatial, temporal, and length distributions of marked and unmarked juvenile Chinook salmon in nearshore surface waters of Puget Sound
  Casey Rice*, Correigh Greene, Kurt Fresh, Reg Reisenbichler
- 9:45am Observations of coded wire tag juvenile hatchery Chinook in the Duwamish River and Elliott Bay
  James Shannon*, William Taylor

**Session B3: Flame Retardants: Science and Policy Perspectives**
Chair: Mike Gallagher and Cheri Peele
Room: 611

- 8:30am Polybrominated diphenyl ether (PBDE) flame retardants and human health
  Denise Laflamme*
- 8:45am PBDEs and their hydroxylated (OH-BDE) and methoxylated (MeO-BDE) metabolites in fish and marine mammals
  Barry Kelly*
- 9:00am A multi-species approach to evaluate the presence of polybrominated diphenyl ethers in the Puget Sound food web.
  Sandra O'Neill*, James West, Gina Ylitalo
- 9:15am Emerging concerns: flame retardants in the marine mammals of Puget Sound and Strait of Georgia
  Peter Ross*, Steven Jeffries, Donna Cullon, John Ford, Harriet Allen
- 9:30am Washington State PBDE Interim Chemical Action Plan
  Cheri Peele*

**Session C3: Environmental Education and Outreach I**
Chair: Wendy Avis
Room: 606

- 8:30am The Island County "Certified Shore Stewards" Program
  Gary Wood*
- 8:45am Tales of a Talking Oyster: How shoreline owners have rolled up their sleeves to restore private shellfish beds plagued with bacterial contamination in lower Hood Canal.
  Teri King*, Judy Likkel
- 9:00am Galiano Up-Close, What Do You Value?
  Keith Erickson*, Kate Emmings
- 9:15am Using Coastal Monitoring Programs to facilitate Environmental Education and Civic Involvement
  Ian Miller*
- 9:30am The Effects of Field Science Research Integrated into K-12 Curriculum
  Nicole Ricketts*
- 9:45am Shoreline Stewardship Support for Local Government
  Clive Callaway*, Sarah Kipp

**Session D3: Coast Salish Heritage**
Chair: TBD
Room: 612

- Parts 1, 2 and 3: Swinomish Earth Enhancement Celebrations 2003-2005: The Planning Process
  Britta Eschete*, Susan Moreno, Janie Beasley*, Larry Campbell, Barb James*
  Archaeological Evidence for Sustainability of Coast Salish Sea Urchin Harvesting
  Russel Barsh*

**Session E3: Panel—Climate Change—Variation and Change**
Chair: Mark Johannes
Room: 609

Panel Description – How do you incorporate climate variation and change into transboundary management and policy in the PS/GB region?

While mitigation to climate change will be important, it can only slow the rate of greenhouse gases accumulation, but will not alter impacts and damage on the most sensitive portions of ecosystems and human communities. Social adaptation through landscape, aquatic and ecosystem based conservation, restoration, policy and management can be used to help ameliorate the affects of climate change. Adaptation science and research will help identify anticipatory approaches for sustainable use and development of ecosystems and their component species and habitats. Recognizing the need to improve our knowledge of climate change impacts and adaptation, a panel discussion has been developed to discuss a balance of existing and future research, planning, policy and management on the issues of climate change in Puget Sound and Georgia Basin.

Presenters:
Diana Allen, Simon Fraser University
Paul Whitfield, Environment Canada
Kim Hyatt, Fisheries and Oceans Canada
other speakers TBD

*Presenting Author

Chair: Doug Myers
Room: 608

Over 150 years, the legacy of human alterations of Puget Sound’s critical nearshore processes has led to ecosystem decline. This panel lays out a developing approach of interdisciplinary analysis, planning, research and demonstration projects to address nearshore process restoration at the ecosystem scale.

Curtis Tanner, US Fish and Wildlife Service, Olympia, WA  
The Puget Sound Nearshore Ecosystem Restoration Project: An Approach to Restoring Nearshore Ecosystems at a Sound-wide Scale

Charles Simenstad, University of Washington Fisheries Science, Seattle, WA  
Conceptualizing Restoration of Nearshore Ecosystem Processes

Doug Myers, Puget Sound Action Team, Olympia, WA  
Puget Sound Nearshore Conditions of the Past, Present and Future

Fred Goetz, US Army Corps of Engineers, Seattle, WA  
Formulating a Restoration Plan for the Puget Sound Nearshore

Tom Mumford, Washington Department of Natural Resources, Olympia, WA  
Challenges of Applying Adaptive Management to Restoration of Puget Sound Nearshore Ecosystems: Misconception and Irreversibility

Guy Gelfenbaum, US Geological Survey, Menlo Park, CA  
Coastal Habitats In Puget Sound: A Research Plan in support of Puget Sound Nearshore Ecosystem Restoration

Session B4: Air Quality

Chair: Peter Schwarzhoff
Room: 611

10:30am  Emission Reductions from the U-Pass Program in the Georgia Basin  
Iona To*

10:45am  Semi-Volatile Organic Pollutants in Snow from National Parks of the Pacific Northwest  
Kimberly Hageman*, Donald Campbell, Glenn Wilson, Dave Schmedding, Sascha Usenko, Staci Simonich

11:00am  Atmospheric Transport of Persistent Organic Pollutants to Cheeka Peak Observatory from 2002-2004  
Susan Genuardi*, Robert Killin, Jim Woods, Staci Simonich

11:15am  Canada-U.S. Convergence in Environmental Regulation: The case of marine vessel emissions.  
Steve Rybolt*

11:30am  Developing a Geomatics Protocol for Urban Air Pollution Sampling Based on a Range of Input Data  
Jason Su*, Michael Buzzelli, Michael Brauer, Timothy Larson, Dow Steyn, Anne-Marie Baribeau, Tenny Bache, Michael Rensing

11:45am  Development of the GVRD’s New Air Quality Management Plan  
Laurie Bates-Frymel, John Newhook*

Session C4: Elwha River Restoration II

Chair: Jerry Freilich
Room: 606

10:30am  Elwha River Restoration-Monitoring the Response of Fisheries and Aquatic Ecosystems at the Watershed Scale  
Michael McHenry*, George Pess, Gary Winans, Anne Shaffer, Brian Winter

10:45am  Predicting salmonid response to the removal of the Elwha River dams  
George Pess*, Mike McHenry, Tim Beechie

11:00am  Elwha and Glines Canyon dam removals: nearshore restoration and salmon recovery of the central Strait of Juan de Fuca  
J. Anne Shaffer*, Larry Ward, Pat Crain, Brian Winter, Kurt Fresh, Cathy Lear

Session D4: Decision Support Tools

Chair: Marshall Richmond
Room: 612

10:30am  Improved Environmental Data and Project Management Reporting  
Brian Pursel*

10:45am  Using the Capital Regional District’s Harbours Atlas for planning, managing and restoring harbour areas in Victoria, British Columbia  
Jody Watson*, Brian Emmett, Angela Forester, Tom Benjamin

11:00am  A Puget Sound Coastal Landform Classification GIS database  
Cinde Donoghue*

David Thurman*, Thomas Georgianna

11:30am  A Conceptual Model Tool for Coastal Management  
Amy Borde*, Nathan Evans, Ron Thom

*Presenting Author
**Session E4: Marine Waters: Modeling**

Chair: Mitsuhiro Kawase  
Room: 609

- 10:30am Simulation of Puget Sound hydrography and circulation, Spring - Summer 2004  
  Mitsuhiro Kawase*, Christian Sarason

- 10:45am In Situ and Remote Monitoring of Water Quality in Puget Sound: the ORCA Time-Series at Pt. Wells  
  Wendi Ruel*, Allan Devol, Steven Emerson, Randy Shuman

- 11:00am The Puget Sound Modeling System: Methods for nowcasting and forecasting Puget Sound hydrodynamics  
  Christian Sarason*, Mitsuhiro Kawase, Kate Edwards

- 11:15am An Aquatic Biogeochemical Cycling Model Simulation of Puget Sound, WA  
  Bruce Nairn*, Skip Albertson, Donald Averill, Al Devol, Mitsuhiro Kawase, Jan Newton, Christian Sarason, Mark Warner

- 11:30am Distribution and cycling of suspended particles inferred from transmissivity in the Strait of Georgia, Haro Strait and Juan de Fuca Strait  
  Sophia Johannessen*, Diane Masson, Robie Macdonald

**Session F4: Panel—Geologic Processes and Coastal Ecosystems**

Chair: Hugh Shipman and Guy Gelfenbaum  
Room: 608

Increasingly, scientists and managers are recognizing that modifications of natural patterns of sediment delivery and transport due to damming and diversion of rivers, diking and filling of estuarine areas, and armoring of coastal bluffs, can be significant factors in ecosystem decline. In this session, speakers will address recent improvements in our understanding of geologic and physical processes and their affect on coastal ecosystems within Puget Sound and the Georgia Basin.

- David Finlayson, University of Washington, School of Oceanography
- Jim Johannessen, Coastal Geologic Services Inc.
- Jonathan Warrick, US Geological Survey
- Jessica Lacy, US Geological Survey
- Patrick Pringle, Washington Department of Natural Resources

**LUNCH**  
Ballroom 6B

**Concurrent Sessions 5**

**Session A5: Status, Trends and Movements of Seaducks and Seabirds in the Salish Sea**

Chair: David Nysewander  
Room: 609

- 1:00pm The value of herring spawning events to spring conditioning of scoters in the Puget Sound Georgia Basin  
  Eric M. Anderson*, James R.Lovvorn, Daniel Esler, W. Sean Boyd, David R. Nysewander, Joseph R. Evenson

- 1:15pm Distribution and Characteristics of Nocturnal Resting Areas of Surf Scoter (Melanitta perspicillata), White-Winged Scoter (M. fusca), and other Seabird Species in Puget Sound  
  Joseph Evenson*, David Nysewander, Thomas Cyra, Bryan Murphie

- 1:30pm Marine Bird Abundance Changes In N. W. Washington Inshore Waters  
  John Bower*, Brian Cary, Caanan Cowles, Holly Donovan, Kevin Dixey, Johanna Hobart-Crane, Don Poe, Sandlin Pteecs, Suzanne Sanborn, Marc Staub, Mark VanderVen

- 1:45pm Status and Trend of the Marbled Murrelet in Waters of the Puget Sound  
  Thomas Bloxton*, Martin Raphael

- 2:00pm New insights into the breeding areas, migration routes, staging, molting, and local movements associated with those Surf and White-winged Scoters wintering in the inner marine waters of Washington Sta  
  David Nysewander*, Joseph Evenson, Bryan Murphie, Thomas Cyra, Dyanna Lambourn, Briggs Hall

- 2:15pm Understanding seabird individual movement patterns to assess vulnerability to bycatch in gillnet fisheries  
  Nathalie Hamel*, Julia Parrish

**Session B5: Workshop—Puget Sound Georgia Basin Airshed Strategy**

Chair: Nancy Helm and Martin Mullan  
Room: 611

The Georgia Basin-Puget Sound International Airshed Strategy was developed by a coordinating committee, under the US-Canada Border Air Quality Strategy, a cooperative effort to investigate barriers to reducing air pollution in transboundary air basins in North America, and builds upon previous agreements under the 1991 US-Canada Air Quality Agreement. This workshop will begin with presentations on the development of the International Airshed Strategy and the scientific characterization of the shared airshed. These presentations will be followed by an open discussion and question and answer session with workshop participants.

- Nancy Helm, Environmental Protection Agency, Region 10
- Martin Mullan, Environment Canada, Pacific & Yukon Region
- Peter Schwarzhoff, Environment Canada, Pacific & Yukon Region

**Session C5: Aquatic Nuisance Species and Invasives I**

Chair: Kevin Anderson  
Room: 606

- 1:00pm Development of molecular diagnostic tools to assess the introduction, establishment and ecology of invasive species in Puget Sound  
  Rusty Rodriguez, Julio Harvey*, Marshal Hoy, Regina Redman, Nancy Elder

- 1:15pm Applied Recovery Research on Sand-verbena Moth: A Puget Sound - Georgia Basin Endemic Species  
  Nick Page*

- 1:30pm Defending Our Shores: Ballast Water Treatment Technologies  
  Russell Herwig*, Jeffery Cordell

- 1:45pm Effective Volunteer-Based monitoring for European Green Crab in Puget Sound.  
  Ann Eissinger*

- 2:00pm Feeding rate, prey preference, and prey size preference of two invasive predatory marine gastropods in Washington State  
  Lee McCoy*, Eric Buhle, Jennifer Ruesink

- 2:15pm Composition of Zooplankton in Ballast Water of Ships Entering Puget Sound  
  Nissa Ferm*, Jeffery Cordell, Russell Herwig

*Presenting Author
Session D5: Hood Canal: Investigating the Low Dissolved Oxygen Condition  
Chair: Jan Newton  
Room: 608

1:00 pm  Circulation Characteristics of Puget Sound Related to Understanding Hood Canal  
Glenn Cannon*

1:15 pm  Hypoxia in Hood Canal: status and contributing factors  
Jan Newton*, Dan Hannafious, Julia Bos, Mark Warner

1:30 pm  Estimated Inputs of Nitrogen to Hood Canal, Washington  
Anthony Paulson*, Christopher Konrad, Raegan Huffman, Theresa Olsen

1:45 pm  GASP! The Response of Marine Fishes to Water with Low Dissolved Oxygen in Southern Hood Canal, Washington  
Wayne Palsson*, Robert Pacunski, Tony Parra

2:00 pm  Relationships between benthic infaunal community structure and dissolved oxygen levels in bottom waters of Hood Canal  
Margaret Dutch*, Sandra Aasen, Kathy Welch, Ed Long, Brian Grantham, David Shull

2:15 pm  Effects of low dissolved oxygen on harbor seal (Phoca vitulina) diet in Hood Canal  
Monique Lance*, Steven Jeffries, Josh London

Session E5: Focus on Fish III  
Chair: Greg Bargmann  
Room: 607

1:00 pm  Changes in growth and recruitment of the Puget Sound rockfish (Sebastes emphaeus) and implications for its role in the reef community in northern Puget Sound  
Julia Fulmer, Donald Gunderson*, Laura LaFrance, Bruce Miller, Betty Goetz

1:15 pm  Assessing the Potential for a Fish Index of Biotic Integrity in the Greater Lake Washington Watershed  
Deanna Matzen*, Hans Berge, Gino Lucchetti

1:30 pm  Sixgill shark (Hexanchus griseus) conservation ecology project update  
Shawn Larson*, Jeff Christiansen*, Joel Hollander*

1:45 pm  Otolith Chemistry Reflects Life-History and Environment of Quillback Rockfish  
Terrie Klinger*, Lance Morgan, Mike Sanborn, Kevin Telmer

2:00 pm  Habitat Characterization and Fish Associations in San Juan Channel  
Robert Pacunski*, Don Gunderson, Gary Greene, Wayne Palsson

2:15 pm  Diet and prey size spectrum of lingcod (Ophiodon elongatus), a top predator in rocky reefs of the San Juan Archipelago  
Anne Beaudreau*

Session F5: Panel—Integrated Approaches To Natural Drainage  
Chair: Peg Staeheli  
Room: 612

The 120-acre High Point housing project incorporates an extensive natural drainage system throughout the 34 blocks of right-of-way. The panel, comprised of planners, designers, modelers, and policy experts, will discuss the aspects involved in creating this pioneering low-impact drainage system.

Panel Facilitator: Peg Staeheli, SvR Design Company  
Panel:  
Kathy Gwilym, SvR Design Company  
Miranda Maupin, Seattle Public Utilities  
Tracy Tackett, Seattle Public Utilities  
Robin Kirschbaum, Herrera Environmental Consultants

2:30–3:30 pm  POSTER SESSION  
Poster Hall [see pages 34–40]

3:30–5:00 pm  Concurrent Sessions 6

Session A6: Avian Populations: Their Habitat Use and Human Influence Near the Salish Sea  
Chair: Mary Mahaffey  
Room: 609

3:30 pm  Wrangel Island (Russia) Snow Geese wintering on the Fraser and Skagit River deltas: population dynamics and interaction with Scirpus marshes.  
Sean Boyd*

3:45 pm  Bird use of hedgerows in southwestern British Columbia: effects of hedgerow composition, landscape composition and biogeography across scales  
Pam Krannitz*, Richard Feldman, Peter Sandiford, Shelagh Parken

4:00 pm  Spatial and temporal use of estuary and upland habitats by wintering waterfowl on the Fraser River delta and north Puget Sound.  
Kate Hagmeier, Dan Buffett*, Kirsty Gurney, Stuart Slattery

4:15 pm  Waterfowl distribution at multiple scales in the Georgia Basin Puget Sound.  
Dan Buffett*, Katherine Hagmeier, Kirsty Gurney, Stuart Slattery, Mark Petrie

4:30 pm  Relationships Between Marine Bird and Waterfowl Assemblage Composition and Gradients of Human Influence in Nearshore Puget Sound  
Casey Rice*

Session B6: New Toxics Research  
Chair: Ken Dzinbal  
Room: 611

3:30 pm  Toxic Substances Management Strategy and Action Plan for the Georgia Basin  
Gevan Mattu*, Christine Garrett

3:45 pm  An Overview of Recent Organotin Studies in the Georgia Basin  
Jeffrey Thompson, Tarren Reitsema, Paul Topping, Robert Wilson*

4:00 pm  Fish and Chips-Genomic Applications to New Toxicological Challenges  
Graham van Aggelen*, Joy Bruno, Heather Osachoff

4:15 pm  Effect of PCBs and PBDEs on thyroid and vitamin A levels in bald eagles  
Lilly Cesh*, David Garcelon, Tony Williams, John Elliott

4:30 pm  Phthalates - the Next “Phosphate”?  
Heather Trim*, BJ Cummings, Elsie Hulziser, Kris Flint

4:45 pm  Distribution patterns of PAHs at Mai Po Marshes Nature Reserve, Hong Kong  
Yan Liang*

*Presenting Author
Session C6: BC/WA Marine Science Panel: 10 Years Later
Chair: Andrea Copping
Room: 606

The BC/WA Marine Science Panel was appointed in 1993 by the Governor of the State of Washington and the Premier of British Columbia to address the status and future of the marine waters and resources of the shared marine waters. The MSP issued a report in 1994 that identified loss of functional habitat, particularly nearshore habitat, as being the greatest threat to the health and integrity of the ecosystem. Did the report effect substantive change? Ten years later the MSP members come together to consider this question, to re-evaluate the state of the shared waters, to second-guess their original evaluation, and to consider the direction that regional marine conservation efforts might take in future.

Andrea Copping, University of Washington
Richard Beamish, Fisheries and Oceans Canada
Curtis Ebbesmeyer, Retired Independent Oceanographer
Chris Garrett, University of Victoria
Bruce McCinn, NOAA Fisheries
Tom Pedersen, University of Victoria
Rusty Sweeting, Fisheries and Oceans Canada
Tom Mumford, Washington Department of Natural Resources
David Secord, University of Washington

Session D6: Hood Canal: Corrective Actions
Chair: Duane Fagergren
Room: 608

3:30 pm Targeted Oxygen Addition to Hood Canal: A Potential Management Strategy to Ameliorate the Impacts of Hypoxia
Marc Beutel*

3:45 pm Hood Canal Watershed Pledge
Robert Simmons*, Emily Piper

4:00 pm Historical changes to Hood Canal riparian forest landscapes
Ted Labbe*

4:15 pm Developing Early Corrective Actions to Address Hypoxia in Hood Canal
Dave Christensen*, Duane Fagergren, Anne Criss

4:30 pm Chum Salmon Carcass Removal in Hood Canal Tribal Commercial Fishery
Pete Granger*

4:45 pm HCDOP Citizens Monitoring Program: integrating a volunteer monitoring effort with the needs of a partnership-based research program
Dan Hannafous*, Renee Rose

Session E6: Coastal and Watershed Planning
Chair: Naki Stevens
Room: 607

3:30 pm Interactions Between Vegetation Patterns, Social Preferences, and Stream Biotic Conditions: An integrated approach to watershed planning
Vivek Shandas*

3:45 pm Tools for Managing the Fraser River Estuary: The FREMP Habitat Inventory and Classification Systems and Coordinated Project Review Process
Anna Mathewson*

4:00 pm The art of applying environmental science at a small watershed scale: A case study, Tsgecum Creek, British Columbia.
Stuart Hamilton*, Ian Bruce

4:15 pm Washington State Department of Natural Resources: Land Manager to Aquatic Steward
Carol Pieing*, Elizabeth Ellis

Session F6: Restoration: Illustrating Process-Based Restoration Concepts I
Chair: Jim Brennan
Room: 612

3:30 pm A framework for conservation and restoration management of nearshore ecosystems in Puget Sound
Maria Calvi*

3:45 pm Developing a Geomorphic Typology to Guide Regional Shoreline Restoration Planning on Puget Sound
Hugh Shipman*, Megan Dethier, Kurt Fresh, Fred Goetz, Tom Mumford, Charles “Si” Simenstad

4:00 pm A Science-Based Approach to Prioritizing and Conserving Estuary Habitats in British Columbia
John Ryder*, Dan Buffett, Kathleen Moore, Marianne Ceh

4:15 pm Incorporating Landscape Principles into Land Use Plans
Stephen Stanley*, Susan Grigsby, Jennifer Brown

4:30 pm Estuarine habitat characterization and distribution: potential evidence for landscape-scale dike impacts
Danelle Heatwole*, Jennifer Wilhelm, Roger Fuller

5:00–6:30 pm DINNER BREAK (on your own)

Public Forum
An interactive, moderated discussion of the Deployment of Science in the Transboundary Region with elected officials and representatives of the scientific community. Open to the general public.

6:30 pm Reception
Welcome comments from:
Mr. Jeffrey Parker, Consul General of Canada

7:30 pm Panel Discussion
Moderator: Brad Ack, Chair, Puget Sound Action Team

Panel Members:
• Mike Harcourt, former Mayor of Vancouver and former Premier of British Columbia
• Ron Sims, King County Executive
• Jay Manning, Director of Washington State Department of Ecology
• Tracy Collier, Acting Director of the Environmental Conservation Division, NOAA Fisheries
• other panelist to be determined

* Presenting Author
Thursday, March 31, 2005

7:30am Coffee Service & Poster Viewing
6th Floor East Lobby & Poster Hall

8:00–9:30AM Concurrent Sessions 7

Session A7: Workshop—Recent Forage Fish Science and Management
Chair: John Cambalik
Room: 611

Forage fish (sand lance, surf smelt, herring) are a critical link in the marine food web. Many organisms, including salmon species, some of which are listed as Threatened under the Endangered Species Act in the United States, depend on forage fish as an important component of their diet during various life stages. Forage fish populations are threatened by the loss of habitat and other factors. This panel will address the science and management issues surrounding forage fish and their habitat.

Kevin Long, North Olympic Salmon Coalition
Filling the Gaps: Documenting Forage Fish Spawning Beaches and Providing Community Education
Tina Whitman, Friends of the San Juans
Stephanie Buffum Field, Jim Slocumb
From Science to Stewardship: The application of forage fish habitat assessment data to the protection of shoreline resources in San Juan County, Washington
Tim Abbe, Jose Carrasquero-Verde, Steven Morrison, Thurston Regional Planning Council
Bulkinghead in Thurston County: Impacts on Forage Fish
Sandy Wylie-Echeverria, University of Washington
Tomas Mumford Jr., Nan Hu
Retrospective Analysis of Eelgrass (Zostera marina L.) abundance in small embayments within the San Juan Archipelago, Washington
Paul Hersberger, USGS, Jacob Gregg, Jon Richard, Garth Traxler
Larval Herring Acquire Resistance after Challenge with Viral Hemorrhagic Septicemia Virus
Greg Bargmann, Washington Department of Fish and Wildlife
Jake Schweigert, Department of Fish and Oceans
Puget Sound and Georgia Basin Forage Fish Management Plans

Session B7: Urbanization Impacts
Chair: Susan Haid
Room: 612

8:00am Landscape Fragmentation and Urban Sprawl in Pierce County, WA
Tom Carlson*

8:15am Spatial Relationships between Beneficial and Detrimental Nearshore Habitat Parameters in WRIA 9 and the City of Seattle
Kollin Higgins*, Paul Schlenger, Julie Hall, John Small, Dan Hennessy

8:30am Assessing the Impacts of Urbanization on Shellfish Growing Areas in Puget Sound, Washington
Marcie Demmy Bidwell*, Marina Alberti

8:45am Tools for evaluating areas of influence of pollutants within streams and marine waters of South Puget Sound
Mindy Roberts*, Skip Albertson, Dustin Bilhimer, Lawrence Sullivan

Session C7: Panel—Ecological Indicators of the Transboundary Area
Chair: Heidi Siegelbaum
Room: 606

We are literally awash in indicators at every scale. In many cases, the indicators show declining ecosystem trends and are full of deflating bad news. There are indeed success stories that mark improvement in discrete areas, but models of best practice and learning networks are underdeveloped. There is great opportunity to breathe life into indicators and place them in their rightful context. This panel will address issues such as: Working across borders and scales; target audiences; collecting data at all scales; storytelling and resonance; turning static information into change; and, diffusion models.

Risa Smith, Environment Canada
Canadian Biodiversity Index - First Results of Proof of Concept Testing
Nicholas Brown, SeaDoc Society
Species of Concern within the Puget Sound Georgia Basin Marine Ecosystem: changes from 2002 to 2004
Linda Gilkeson, B.C. Ministry of Water, Land and Air Protection
Improving the Effectiveness of Indicator Reporting: The BC Coast and Marine Environment Project
Chantel Stevens, Sustainable Seattle
Measuring what matters - sustainability indicators and the participatory process
Heidi A. Siegelbaum, Siegelbaum & Associates
Data Needs a Date: Transforming the Complexity of Science to Ecosystem Change in the Puget Sound Georgia Basin

Session D7: Panel: Getting Started on Integrated Assessment for the Puget Sound Ecosystem
Chair: David Fluharty
Room: 607

Ed Miles, Virginia and Prentice Bloedel Professor of Marine & Public Affairs and Senior Fellow, Joint Institute for the Study of Atmosphere and Oceans, University of Washington
Integrated assessments and their use: multiple external and internal stressors and climate change
Terrie Klinger, Assistant Professor of Marine Affairs, University of Washington and Chair of the Olympic Coast National Marine Sanctuary Advisory Council
Metrics for assessing marine environmental change
Tom Leschine, Professor and Director of the School of Marine Affairs, University of Washington
Metrics for assessing societal change
Dan Huppert, Associate Professor, School of Marine Affairs, University of Washington
Implicit trade-offs of demographic and economic trends
Dave Fluharty, Wakefield Professor of Ocean and Fishery Sciences, School of Marine Affairs, University of Washington
Institutional capacity to take integrated action
Patrick Christie, Assistant Professor, School of Marine Affairs, Programs on the Environment and Jackson School of International Studies, University of Washington
Role of iconic species in motivating change
Marc Hershman, Professor, School of Marine Affairs, School of Law, University of Washington
Puget Sound efforts in the context of PNW and national developments: institutional complexities
Session E7: Marine Waters Forcasting and Variability
Chair: Bruce Nairn
Room: 609

8:00am Wind Patterns in the Georgia Basin
Owen Lange*

8:15am A Climatology of Windstorms in the Western Pacific Northwest, 1948-2004
Wolf Read*

8:30am A collaborative ambient research and monitoring program in the southern Strait of Georgia
Brenda Burd, Albert van Roosdelaar, Sophia Johannessen, Robie Macdonald*, Phil Hill

8:45am Principle Component Analysis for Uniqueness in Puget Sound Hydrographic Stations (1989-2003) - Let the Data Speak!
Skip Albertson*

9:00am Seasonal water mass analysis for the Straits of Juan de Fuca and Georgia
Diane Masson*

9:15am Interannual variation in water quality variables in Puget Sound as revealed by time-series analysis
Julia Bos*, Jan Newton, Skip Albertson

Session F7: Restoration: Illustrating Process-Based Restoration Concepts II
Chair: Tom Mumford
Room: 608

8:00am Seahurst Park: Restoring Nearshore Habitat and Reconnecting Natural Sediment Supply Processes
Peter Hummel*, Jeff Dillon*, Scott Thomas, Jim Johannessen, Paul Schlenker, William Laprade

8:15am Using 3D visualization to portray Elwha River dam-removal
Ross Freeman*

8:30am Using Historical Data to Estimate Changes in Floating Kelp (Nereocystis leutkana and Macrocystis integrifolia) in Puget Sound, Washington
Helen Berry*, Tom Mumford, Peter Dowty

8:45am Developing Landscape Benchmarks to Monitor Urban Growth in Puget Sound
Marina Alberti*, Jeff Hepinstall, Bekkah Coburn, Michal Russo, Stefan Coe, Daniele Spirandelli

9:00am Next Steps in Nearshore Habitat Restoration for Puget Sound - the Practitioners Speak Out
Brie Van Cleve*, Andrea Copping

9:15am Links, chains and witness trees - using historical research to guide watershed restoration
Peter Bahls*

9:30–10:30am POSTER SESSION
Poster Hall (see pages 34–40)

Session A8: Shellfish: Science and Management
Chair: Stuart Glasoe
Room: 611

10:30am Effects of turbulent flow on the movement of larval sand dollars
Tansy Clay*, Danny Grunbaum

10:45am Olympia oysters: Where have they gone, and can they return?
Jacqueline White*, Jennifer Ruesink, Alan Trimble, Eric Buhle

11:00am Restoration Aquaculture of the Pinto Abalone (Haliotis kamtschatkana)
Krisi Straus*, Jonathan Davis, Kerry Naish, Carolyn Friedman

11:15am Spatial and Temporal Changes in Pinto Abalone (Haliotis kamtschatkana) Abundance at Ten Index Sites in the San Juan Archipelago
Don Rothaus*, Carolyn Friedman, Henry Cheng

11:30am New Approaches to Shellfish Protection in Puget Sound
Stuart Glasoe*, Harriet Beale, Marina Alberti, Marcie Bidwell, Aimee Christy

11:45am Patterns of benthic production in Puget Sound: where and why do bivalves grow best?
Alan Trimble*, Jennifer Ruesink, Megan Dethier, Helen Berry, Blain Reeves, Aimee Christy, Andrew Suhrbier, Lee McCoy, Amy Glaub

Session B8: Smart Growth and Low Impact Development
Chair: Bruce Wulkan
Room: 612

10:30am Evolution of Seattle Public Utilities’ Natural Drainage System Projects
Tracy Tackett*

10:45am Infiltration through Natural Drainage Systems in Seattle, Washington
Jeff Fowler*, Tracy Tackett

11:00am Case by case - the design and implementation of sustainable communities
Elisa Campbell*, Shana Johnstone

11:15am Integrating LID with Development Practices
David Sale*, Sandra Davis, Steven Wright, Chris Parsons

Lehna Malmkvist*, Rob Miller, Craig Mount

Session C8: Governance and Institutional Design
Chair: Randal Cripps
Room: 606

10:30am Opportunities and Limits of Regulations
Paul Inghram*

10:45am Trans-border Comparison of Three Sustainable Cities Programs: Vancouver, Seattle and Oslo
Craig ZumBrunnen*

11:00am The Coastal Zone Canada Association: Ten Years of Moving the ICOM Markers
Larry Hildebrand*

*Presenting Author
11:15am  The Fraser Basin Council: Advancing Sustainability in the Georgia Basin Through Collaborative Leadership
David Marshall*  

11:30am  The Georgia Basin Action Plan: Building on Success and Meeting Ongoing Challenges
Erik Karlsten*  

Session D8: Contaminants in the Puget Sound and Georgia Basin — An Ecosystem Perspective
Chair: Sandra O’Neill
Room: 609  

10:30am  Persistent organic pollutants in whole bodies of Pacific herring (Clupea pallasi) in Puget Sound, Washington: evidence of environmental segregation of stocks based on contaminant levels and patterns
James West*, Sandra O’Neill, Gina Ylitalo  

10:45am  Elevated levels of persistent organic pollutants in free ranging populations of Puget Sound populations of Pacific salmon: the importance of residency in Puget Sound.
Sandra O’Neill*, Gina Ylitalo, Margaret Krahn, Jim West, Jenny Bolton, Don Brown  

11:00am  Harbor seals as indicators of trends in contaminants in Puget Sound: comparison of results from two sites
John Calambokidis*, Peter Ross, Steve Jeffries, Michael Ikonomou  

11:15am  Adverse health effects of persistent organic pollutants in Puget Sound harbour seals
Maki Tabuchi*, Lizzy Mos, Neil Dangerfield, Steve Jeffries, Dyanna Lambourn, Nick Veldhoen, Caren Helbing, Peter Ross  

11:30am  Dietary sources of persistent organic pollutants in southern resident killer whales
Gina Ylitalo*, Sandra O’Neill, Don Brown, Jim West, Jennie Bolten, Margaret Krahn  

Session E8: Environmental Education and Outreach II
Chair: Mary Knackstedt
Room: 607  

10:30am  Volunteer fish and invertebrate surveys: what makes recreational SCUBA divers want to participate?
Abigail Sine*, Joseph Gaydos  

10:45am  Sound Stewards: The Art of Nurturing Our Super- Volunteers
Keeley O’Connell*, Bronwyn Dexter  

11:00am  Island Community Maps & Conservation in the Salish Sea Region
Sheila Harrington*  

11:15am  Getting to Healthy Shellfish Beds Through Community Connections
Erika Stroebel*, Gerald Larson  

11:30am  Marine Shoreline Health as an Integrating Concept for Policy, Education and Public Involvement in Puget Sound
Mike Sato*, Naki Stevens  

11:45am  An NGO Initiative for developing community engagement in the development of a marine protected area in the Southern Strait of Georgia
Sabine Jessen*, Jodi Stark  

Session F8: Restoration: Restoration Science and Practice
Chair: Walter Pearson
Room: 608  

10:30am  Spatial Patterns and Trends of Eelgrass (Zostera marina) at Multiple Scales in Puget Sound: Key Findings from the First Five Years of Long-Term Monitoring
Blain Reeves*, Pete Dowty, Helen Berry, Tom Mumford, Sandy Wylie-Echeverria, Jim Norris, Ian Fraser  

10:45am  Eelgrass (Zostera marina) transplant survival and density trajectories over eight years at a North Puget Sound restoration site
Gregory Williams*, Ron Thom, John Southard  

11:00am  Improving the success of eelgrass (Zostera marina) restoration in the Pacific Northwest by using the three P’s: Planning, Planting, and Performance
John Southard*, Ron Thom, Greg Williams  

11:15am  Proactive Approaches Explored Promoting Functional Riparian Fish Habitat Creation and Restoration in Surrey, BC.
Tracy Anderson, Trevor Welton*, Ward Prystay*  

11:30am  Beach Rehabilitation and Monitoring at Marine Park, Bellingham: Recreating an Urban Beach in Bay-Wide Habitat Restoration Context
Jim Johannessen*, Mike Stoner, Shannon Kinsella, Peter Hummel  

11:45am  Tsleycum First Nation and the Restoration of the Patricia Bay Watershed
Ian Bruce*  

Noon–1:00pm  Lunch
Ballroom 6B  

1:00–2:30pm  Concurrent Sessions 9  

Session A9: Contaminants in Humans and Wildlife I
Chair: Jim West
Room: 611  

1:00pm  Environmental Public Health in Washington State: How Complete are the Data?
Kate Davies*  

1:15pm  Declining Chemical Contamination in Puget Sound? Results of the 1999-2003 National Mussel Watch Program
Alan Mearns*, Gunnar Lauenstein  

1:30pm  Current-use pesticides in coho salmon habitat in the Fraser River System, British Columbia
Peter S. Ross*, Stacey Venin, Neil Dangerfield, Million Woudneh  

1:45pm  Poisoning of birds of prey by anticholinesterase insecticides in agricultural areas of southwestern British Columbia
John Elliott*, Laurie Wilson, Pierre Mineau, Malcolm McAdie  

2:00pm  Evaluation of Polychlorinated Biphenyls (PCBs), Mercury, and DDT in Rockfish, English sole, Chinook Salmon and Coho Salmon from Puget Sound, Washington
Joan Hardy*  

*Presenting Author
Session B9: Community Basin Planning  
Chair: Larry Hildebrand  
Room: 612

1:00pm  Science, Policy, and Partners: A case study of the success of salmon recovery planning in the Snohomish River basin  
Martha Neuman*, Andrew Haas

1:15pm  Traversing the boundaries between science and policy: finding Pathways for place-based community planning  
Murray Journeay*, Sean Leroy, Sonia Talwar

1:30pm  Community Involvement in Eelgrass Protection  
Pat Pearson*, Judy D’Amore*, Anne Murphy, Heida Diefenderfer, Gabrielle LaRoche, Judy Surber, Michelle McConnell, Dan Titterness, Jeff Gallant, Shelly Randall

1:45pm  Integration of Joint City/Tribal Beach Seining Results into Shoreline Management & Salmon Recovery Efforts  
Paul Dorn*, Peter Namtveldt Best

2:00pm  The San Juan County Marine Stewardship Area: Developing a Voluntary Marine Management Regime that Recognizes the Social, Economic and Ecological Values of County Waters  
Jody Kennedy*, Mary Masters

Session C9: Aquatic Nuisance Species and Invasives II  
Chair: Kevin Anderson  
Room: 606

1:00pm  Invasio n Pathway Analysis and Genetic Screening Tool Development  
Joan Cabreza*

1:15pm  Life In The Stress Zone: The Role Of Fungal Symbiosis In The Distribution And Survival Of Plants In Puget Sound  
Rusty Rodriguez*, Regina Redman, Marshal Hay, Nancy Elder

1:30pm  Comparative Reproductive Events Of The Invasive Varnish Clam, nuttallia obscura, And The Fisheries Littleneck Clam, venerupis philippinarum  
James R. Selleck*

1:45pm  Impacts of invasive drills on Olympia oysters in Puget Sound: patterns and mechanisms  
Eric Buhle*

2:00pm  An Estuarine Invader - How Oregon’s Spartina Response Plan Is Reaching Beyond Borders  
Vanessa Howard*, Mark Sytsma, Mary Pauth, Dennis Isaacson

2:15pm  A partnership approach to Spartina removal in the Fraser River Delta  
Dan Buffett*, Kathleen Moore, Gary Williams, Ron Goldstone, Pat Lim, Verne Lucy, Tasha Murray, Juergen Bauman

Session D9: Marine Conservation  
Chair: Wayne Palsson  
Room: 609

1:00pm  Assessment of Bottomfish Density and Diversity within Potential Marine Reserves in Skagit County, Washington  
Andrew Weispfenning*, Paul Dinnel

1:15pm  Rockfish and Marine Protected Areas in the Puget Sound  
Corrina Chase*

1:30pm  Strategies for Use and Protection of the Gulf Islands Marine Environment  
David McCallum*, Rick Rollins

2:00pm  A Marine Atlas for the Proposed National Marine Conservation Area in the Southern Strait of Georgia  
William Henwood*

2:15pm  Retrospective analysis of eelgrass (Zostera marina L) abundance in small embayments within the San Juan Archipelago, Washington  
Sandy Wylie-Echeverria*, Tomas Mumford Jr., Nan Hu

2:30pm  Say Hello to Big Eddy: A global model for international cooperation for ecosystem-based oceans management and MPA development  
Sabine Jessen, Jodi Stark*

Session E9: Focus Studies Related to Shorebirds and Passerines Along the Salish Sea  
Chair: David Nysewander  
Room: 607

1:00pm  Successful Relocation of a Seattle Purple Martin Breeding Colony  
Kevin Li*

1:15pm  Shorebird feeding ecology: implications for conservation and management  
Kimberley Mathot, Robert Elner*

1:30pm  Movement and Spatial Requirements of Great Blue Heron Colonies Over Time  
Ann Eissinger*

1:45pm  Shorebird habitat use during fall and spring migration in the Greater Skagit-Stillaguamish Delta  
Gary Slater*, Roger Fuller, Greg Hood

2:00pm  Recovery of the Western Purple Martin bordering the “Salish Sea” - the Georgia Basin of British Columbia and Puget Sound, Washington  
Bruce F. Cousens*, J. Charlene Lee, Stan Koska, Laura M. Darling, Michelle Tirhi, J. Cam Finlay, Thomas W. Gillespie

Session F9: Restoration: Advancing the Science of Restoration  
Chair: Ron Thom  
Room: 608

1:00pm  Aquatic habitat Guidelines Project  
Barbara Nightingale*

1:15pm  Estuarine habitat restoration in the context of rising sea-level: planning on a landscape scale.  
Gregory Hood*

1:30pm  Linking nearshore processes with intertidal diversity in Puget Sound  
Megan Dethier*, Jennifer Ruesink, Helen Berry, Blain Reeves

1:45pm  Educating shoreline landowners: examples from King, Whatcom, Kitsap, and Jefferson counties  
Kathy Taylor*, Hilary Culverwell*, John Cambalik*

2:00pm  An interactive Decision Support System for marine shoreline characterization  
Anthony Gabriel*, David Cordner, David Parrish, Cinde Donoghue, Tim Gates

2:30–3:00pm  Break  
East Lobby
Session A10: Contaminants in Humans and Wildlife II  
Chair: Peter Ross  
Room: 611

3:00pm Polychlorinated Biphenyl concentrations in Adult Chinook salmon returning to coastal and Puget Sound hatcheries.  
Brian Missildine*

3:15pm The Effect of Heavy Metal Pollution in Aquatic Environments on Metallothionein Production in Mytilus edulis  
Lee Ann Acker*, Jeremiah McMahan, James Gawel

3:30pm Neurobehavioral Effects of the Carbamate Insecticide, Carbayrl, on Salmonids  
Jay Davis*, David Baldwin, Jana Labenio, Barbara French, Nathaniel Scholz

3:45pm An Assessment of Chlorinated Hydrocarbon Effects on Development of Wild Mink (Mustela vison) from Ontario and British Columbia, Canada  
John Elliott*, Pam Martin, Laurie Wilson, Christy Morrissey

4:00pm Xenoestrogen exposure and altered reproductive timing in Puget Sound English sole  
Lyndal Johnson*, Daniel Lomax, O. Paul Olson, James West, Sandra O'Neill

Session B10: Non-Point Pollution Impacts on Water Quality  
Chair: Heather Trim  
Room: 612

3:00pm Cumulative Effects of Agriculture on Water Quality in the Transboundary Sumas River Watershed  
Ione Smith *

3:15pm A Watershed-based Approach for Developing a Multi-Parameter TMDL In Sinclair- Dyes Inlet, Washington  
Christopher May*, Robert Johnston, Sally Lawrence

3:30pm Drinking water quality and well owner perceptions of quality in a rural watershed in British Columbia, Canada.  
Simone Magwood*, Hans Schreier

3:45pm Current In-use Pesticides in Streams Located in Agricultural, Urban and Relatively Undisturbed Areas of the Lower Fraser Valley  
Taina Tuominen*, Mark Sekela, Melissa Gledhill, Andrea Ryan

4:00pm Nutrients in an Eelgrass Dominated Bay: Seasonal and Diurnal Fluctuations in Dissolved Inorganic Nitrogen and Phosphorus  
Douglas Bulthuis*, Paula Margerum

Session C10: Oil Spill Prevention and Response in the Puget Sound Georgia Basin  
Co-Chairs: Alan Mearns and Jan Neel  
Room: 606

Matt Bernard, U.S. Coast Guard  
The Regional Contingency Planning Process

Naki Stevens and Jeff Pavey, People for Puget Sound  
A Brief History of Oil Spill Policy in Washington: Complacency or Vigilance?

Linda Pilkey-Jarvis, WA Department of Ecology  
Washington State Initiatives for Oil Spill Preparedness


Debra A. Simecek-Beatty, National Oceanic and Atmospheric Administration and  
Carl E. Brown, Environment Canada  
A Primer for Oil Spill Remote Sensing

Session D10: Marine Protected Areas  
Chair: Ginny Broadhurst  
Room: 609

3:00pm Conservation leasing in Washington State- partnerships for improving and protecting state-owned submerged lands  
Jay Udelhoven*, Jacques White*

3:15pm Beyond Boundaries - Turning Conservation Targets into Conserved Areas  
Philip Bloch*

3:30pm Improving existing marine protected areas in Puget Sound  
Ginny Broadhurst*

3:45pm Gulf Islands National Park Reserve: A Conservation Assessment Review  
Todd Columbia*

4:00pm Salish Sea Selected as a Priority Conservation Area in the Baja California to Bering Sea Initiative  
Fan Tsao*, Lance Morgan, Sara Maxwell

Session E10: Tourism: Opportunities and Impacts  
Chair: Peter Ronalnd  
Room: 607

3:00pm Menzies Project: Funding Ongoing Baseline Data Collection With Sustainable Tourism Revenue  
Michelle McConnell*, James Norris

3:15pm An Assessment of Alaska Cruise Ship Wastewater Discharges  
Alan Mearns*, CJ Beegle-Krause, Lincoln Loehr, Kenneth Hall, Michael Watson, Charles McGee, Kenwyn George

Kari Koski*, Rich Osborne

3:45pm Wildlife Viewing Recreation: Economic Stimulant and Habitat Protection Tool  
Michael O’Malley*

4:00pm The evolution of commercial whale watching - action plan for 2005  
Anna Hall*

*Presenting Author
Session F10: Restoration: The Future of Restoration
Chair: Steve Gajewski
Room: 608

3:00pm Restoring Marine Habitats and Mending Social Communities
Nikki Wright*

3:15pm Habitat Based Science as a Management Tool for Washington’s State-owned Aquatic Lands
Carol Cloen*, Philip Bloch, ENTRIX, Battelle Marine Sciences Laboratory

3:30pm Using the Internet for Promoting Environmental Stewardship at WDNR
John Boettner*, Tom Mumford, Betty Bookheim

3:45pm Quick’s Bottom: A case study in wetland restoration.
Lehna Malmkvist*, Brian LaCas, Gerald Fleming

4:00pm Puget Sound Georgia Basin Shoreline Management Planning
Kirby Gilbert*

4:15pm Application of Spatially-Distributed Watershed Models for Resource Management
Mark Wigmosta*

Closing Session / Student Awards
4:30–5:30pm
Room: 6A

This closing plenary session features a conference wrap up from the co-chairs, and a recognition ceremony for those students who presented exceptional technical papers and posters.

Special Demonstrations
located in the Poster Hall

Educational Tool: Interactive DVD
located in the Poster Hall, Ballroom 6C

Return of the Plankton
Cameron Snow, John Williams*, Bruce Claiborne

Demonstrations: Decision Support Tools
located in the Poster Hall, Ballroom 6C

A Watershed-based Approach for Developing a Multi-Parameter TMDL In Sinclair- Dyes Inlet, Washington
Christopher May*, Robert Johnston, Sally Lawrence

Aquatic habitat Guidelines Project
Barbara Nightingale*

The Puget Sound Modeling System: Methods for nowcasting and forecasting Puget Sound hydrodynamics.
Christian Sarason*, Mitsuhiro Kawase, Kate Edwards

Integrated Modeling for Water Resource Management
David Thurman*, Thomas Georgianna

2005 Posters

Group 1: Puget Sound Georgia Basin Biota

P1.1 The Annual Census of Giant Pacific octopuses in Puget Sound
Roland Anderson*

P1.2 Southern Resident Killer Whales (Orcinus orca) and Pacific Salmon (Oncorhynchus Spp.): Correlations Through Space and Time in the Inland Waters of Washington State and British Columbia
Shannon McCluskey*, Miles Logsdon, Glenn VanBlaricom

Gary Wood*

P1.4 Representing and exploring summer distribution patterns of Southern Resident killer whales (Orcinus orca)
Donna D. Hauser*, Miles L. Logsdon, Elizabeth E. Holmes, Glenn R. VanBlaricom, Richard W. Osborne

P1.5 Genetic Stock Structure of Pacific Cod (Gadus macrocephalus)
Kathryn Cunningham*, Lorenz Hauser, Mike Canino, Ingrid Spies

P1.6 Centennial Plant Collection: Revisiting 1904 Herbarium Specimens from the San Juan Islands
Victoria Wyllie-Echeverria*, Claudia Mills

P1.7 Shellfish population survey of the Swinomish Reservation
Laura Klein*, Martin Sampson, Todd Mitchell, Elissa Fjellman, Eric Haskins

P1.8 Anchovies: the “other” forage fish in Puget Sound
Duane Fagergren*

P1.9 Movement and survival of acoustically tagged coho salmon smolts in south Puget Sound
Scott Steltzner*, Kyle Brakensiek

P1.10 Hydroacoustic and Underwater Videographic Survey of San Juan County Eelgrass Resources
Ian Fraser*, James Norris, Jim Slocomb, Sandy Wyllie-Echeveria, Stephanie Buffum-Field, Tina Whitman

P1.11 Not too hot, not too cold: Behavioral thermoregulation of adult sockeye salmon in Lake Washington
Jenny Newell*, Thomas Quinn

P1.12 Two Decades of Purple Martin Stewardship and Recovery in British Columbia
Bruce F. Cousins*, J. Charlene Lee, Laura M. Darling, J. Cam Finlay, Thomas W. Gillespie

P1.13 Causes of Mortality in Pinnipeds of Washington State during 2004
Dyanna Lambourn*, Stephen Raverty, Steven Jeffries, John Calambokidis, Mike Garner, Joe Gaydos, Melissa Miller, Pat Conrad

P1.14 Genetic diversity of Synechococcus in Puget Sound and the Northwest Straits
Karen L. Peterson*, Cheryl Williams, Nathan Ahlgren, Gabrielle Rocap

P1.15 Great Blue Herons of the Salish Sea: Status and Conservation.
Ann Eissinger* and the Heron Working Group

*Presenting Author
Group 2: Stressors on the Shared Ecosystem

P2.1  Juvenile salmon in the San Juan Archipelago
Tina Wyllie-Echeverria*, Russel Barsh

P2.2  Analysis of ozone and chlorine disinfection byproducts concerning ballast water treatment
Jake Perrins*, Bryan Nielsen, Russell Herwig

P2.3  Detection of the harmful algal species Pseudo- nitzschia and associated particulate and dissolved domoic acid with concurrent water column quality and nutrient concentrations obtained from a moored aut Judah Goldberg*, Aimée Christy, Jeannie Bush, Bich-Thuy Eberhart, Jan Newton, Vera Trainer

P2.4  Enumerating phytoplankton abundance in ballast water treatment experiments
David Lawrence*, Russell Herwig

P2.5  Effect of plasma lipid content on interpreting chlorinated hydrocarbon concentration in bald eagles Lilly Cesh*, David Garcelon, Tony Williams, John Elliott

P2.6  Regional risk assessment of the Japanese brown alga, Sargassum muticum, in Cherry Point, Washington
Ananda Seebach*, Audrey Colnar

P2.7  Evaluating Status and Trends in Fecal Pollution in Puget Sound
Tim Determan*

P2.8  Regional risk assessment of the European green crab, Carcinus maenas, in Cherry Point, Washington
Audrey Colnar*, Wayne Landis

P2.9  Literature Review and Analysis of Coastal Urbanization and Microbial Contamination of Shellfish Growing Areas
Stuart Glasoe*, Aimee Christy

Group 3: Restoration Strategies and Conservation Tools

P3.1  Fornsby Creek Project: Self-regulating tideways and estuary restoration
Todd Mitchell*, Karen Mitchell, Rachel LovellFord, Laura Klein

P3.2  Lone Tree Creek and pocket estuary restoration
Todd Mitchell, Kaia Smith*, Laura Klein, Rachel LovellFord, Karen Mitchell

P3.3  ERA Uncertainty Reduction by Mapping the Nearshore Habitats of Cherry Point, Washington, U.S.A.
Ananda Seebach*, Wayne G. Landis

P3.4  Beach Restoration/Rehabilitation in Puget Sound, WA: 5 Years of Monitoring at 2 Projects and Lessons Learned
Jim Johannessen*, Matt Chase

P3.5  Olympia Oyster Restoration in Fidalgo Bay, Washington
Jeanne Robinette, Russel Barsh, Paul Dinnell*, Ivar Dolph

P3.6  The Pierce County, Washington, Coordinated Salmon Habitat Protection and Restoration Strategy
Tom Kantz*

P3.7  Spatial and Temporal Patterns of Paralytic Shellfish Poisoning (PSP) in Puget Sound
Tim Determan*
**Group 4: Monitoring, Modeling and Measurement Tools**

P4.1  **Computer Modeling of Marine Waters with Open Source Software**  
Lambert Rubash*, Elizabeth Kilanowski

P4.2  **Statistical Models for Spot Air Quality Forecasts (O3 and PM10) in British Columbia**  
Jon Wang*, Edward Lord, Alex Cannon, Gregg Walters

P4.3  **Measuring and Assessing Environmental Quality in the Lower Mainland Region of British Columbia**  
Elizabeth Freyman*, Krista Payette, Rod Shead, Stephanie Meyn, Jane Hofweber, Jennifer Guay, Diane Sutherland, Dennis Barlow, Gwyn Graham, Brent Moore

P4.4  **Simulating the effects of sea-level rise on Zostera marina production in Padilla Bay, WA**  
Richard Gwozdz*, John Kybyczyn

P4.5  **The Development of Nearshore Stressor Conceptual Models for Chinook Recovery Planning in South Puget Sound**  
Tom Kantz*, Scott Steltzner, Sayre Hodgson, Joanne Schuett-Hames, Doris Small, Cynthia Wilson, John Kliem

P4.7  **An Analysis of Large Woody Debris in two Puget Sound Salt Marshes: Elger Bay, Camano Island, Sullivan Minor Marsh, Padilla Bay**  
Andrea MacLennan*, Tom Terrich, PhD

P4.9  **Nearshore habitat characterization on the Swinomish Reservation**  
Karen Mitchell*, Todd Mitchell, Laura Klein, Rachel LovellFord, Martin Sampson

P4.9  **Nearshore Structure Survey of the Swinomish Reservation**  
Rachel LovellFord*, Todd Mitchell, Laura Klein, Martin Sampson, Eric Haskins

P4.10  **Ability to Predict Zostera marina Cover Based on Geomorphic and Hydrologic Variables in Puget Sound, Washington**  
Pete Dowty*, Cinde Donoghue, Sandy Wyllie-Echeverria, Helen Berry

**Group 5: Management, Governance and Policy Tools**

P5.1  **The British Columbia Ministry of Water, Land and Air Protection’s Focus on Airshed and Watershed Management Planning in the Georgia Basin**  
Stephanie Meyn*

P5.2  **Spatial assumptions and consultative governance**  
Brooke Marshall*

P5.3  **Planning the Future for San Juan Islands and Protection Island National Wildlife Refuges**  
Pamela Sanguinetti*, Annette de Knijf

P5.4  **Elements of Ecosystem Based Management: An Estuarine Case Study**  
Julia Parrish, Terrie Klinger, Jennifer Reusink, Kirstin Holsman*

P5.5  **Shared Waters: Protecting Water Quality in Boundary Bay and its Smaller Basins, Semiahmoo Bay and Drayton Harbor**  
Krista Payette*

P5.6  **Biomarker and Histopathologic Responses Demonstrate Improvement in Flatfish Health Following Remediation of a PAH-contaminated Site in Eagle Harbor, WA**  
Mark Myers*, Bernadita Anulacion, Barb French, William Reichert, Cathy Laetz, Jon Buzitis, Tracy Collier

*Presenting Author
2005 Advisory Committee

Greg Bargmann  
Washington Department of Fish and Wildlife

Sarah Brace  
Puget Sound Action Team, Co-chair

Andrea Capping  
Washington Sea Grant Program, University of Washington

Pete Dowty  
WA Department of Natural Resources

Ken Dzinbal  
WA Department of Ecology

David Fraser  
Environment Canada, Co-Chair

Joe Gaydos  
SeaDoc Society

Gordon Hanson  
Coast Salish Sea Initiative

Patrick Higgins  
Canadian Consulate (Seattle)

Mark Johannes  
Fisheries and Oceans Canada

Mitsuhiro Kawase  
Oceanography, University of Washington

Ann Lesperance  
Pacific Northwest National Laboratory

Tom Mumford  
Washington State Department of Natural Resources

Jan Newton  
Applied Physics Laboratory, University of Washington

Charles O’Hara  
Swinomish Tribe

Scott Redman  
Puget Sound Action Team

Peter Ronald  
Georgia Strait Alliance

Michael Rylko  
U.S. Environmental Protection Agency Region 10

Heidi Siegelbaum  
Siegelbaum and Associates

John Stein  
Northwest Fisheries Science Center, NOAA Fisheries

Tom Therriault  
Department of Fisheries and Oceans Canada

Heather Trim  
People for Puget Sound

Daryl Williams  
Tulalip Tribe

* Presenting Author
Steward of the state’s 2.4 million acres of aquatic lands, managed to benefit the public… forever

WASHINGTON STATE DEPARTMENT OF Natural Resources

www.dnr.wa.gov

Welcome to the Participants of the 2005 Puget Sound Georgia Basin Research Conference

www.ducks.ca
1-800-665-DUCK

Majestic Pierce County: Window to Northwest Grandeur

Debby Hyde, Special Project Coordinator 253-798-7110
Tom Kantz, Ph.D., Environmental Biologist 253-798-4625

www.piercecountywa.org

Washington State Department of Health

The Department of Health works to protect and improve the health of people in Washington State

YVR

Vancouver International Airport Authority

Administration de l’aéroport international de Vancouver
The Sustainable Region Initiative is our commitment to consider the future; to care for community, environment, and economy in everything we do; and to nurture partnerships that make our region great today and even better tomorrow.

We translate science to solutions

Water. A simple molecule. A complex environmental problem. With 40 years of R&D experience, Pacific Northwest National Laboratory’s researchers know that simple answers aren’t good enough. Complex problems require answers that look at all of the issues. This is why PNNL brings together multidisciplinary teams and state-of-the-art resources to:

- generate indicators of an ecosystem’s health
- monitor an ecosystem’s performance
- assess near shore processes
- understand how climate change will impact the water cycle
- design restoration projects and develop and implement adaptive management strategies for shorelines and their environments.

Building on its original environmental mission, PNNL scientists have developed leading-edge capabilities in hydrological models, physiological analysis and geologic processes. With these capabilities and our work at the Sequim Marine Research Operations, PNNL has developed state-of-the-art capabilities in side-scan sonar, biogeographic mapping, remote sensing, coastal processes and dock shade modeling.

In the years ahead, PNNL research will continue to respond to the ever-increasing demand for sophisticated and elegant solutions to environmental issues by translating science into solutions.

Contact
Joe Devary
Resource and Ecosystems Management
509/375-8345
joe.devary@pnnl.gov
http://www.pnnl.gov/

PNNL is a proud sponsor of the Puget Sound/Georgia Basin Research Conference

BC Hydro is proud to be a supporter...

... of the 2005 Puget Sound Georgia Basin Research Conference.

BC Hydro has a number of Environmental Programs including:
- Water Use Planning
- Compensation Programs
- Green Energy
I'm taking the One-Tonne Challenge. Are you?

Je relève le défi d'une tonne. Et vous?

Take action on climate change
www.climatechange.gc.ca

Agissons contre les changements climatiques
www.changementsclimatiques.gc.ca