Testimony of
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Office of Water
U.S. Environmental Protection Agency
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1. Introduction

Good afternoon Madam Chairwoman and members of the Committee, I am Peter Silva, Assistant Administrator for the Office of Water at the United States Environmental Protection Agency (EPA). Thank you for the opportunity to discuss five regional aquatic ecosystems – the Columbia River Basin, Great Lakes, Lake Tahoe, Long Island Sound, and Puget Sound-Georgia Basin -- and the EPA programs that work to protect and restore them.

In today's testimony, I will describe the challenges facing these programs, such as habitat loss, hypoxia, and climate change, and the approach taken by these programs to address these challenges. I will also present how EPA measures the progress of these programs.

We've long known that large aquatic ecosystems are among the most ecologically valuable and productive habitats on earth. These ecosystems foster a wonderful abundance and diversity of wildlife like shore birds, fish, crabs and lobsters, marine mammals, shellfish, and sea birds. Our estuaries and rivers function as the feeding, spawning, and nursery grounds for many marine and

terrestrial finfish, shellfish, birds, and plants, supporting unique communities of plants and animals that are specially adapted for life at the margin of the sea.

These areas are also dynamic economic engines for many industries vital to the Nation, including sport and commercial fisheries, agriculture, transportation, recreation and with many hydropower dams, electrical power generation. However, many of these same activities have disrupted natural processes and impaired water quality in some areas to the point where human health is at risk and ecosystems and the plants and animals that depend on these important ecosystems are threatened. Recent studies and monitoring programs have found a number of troubling problems, including significant levels of toxic chemicals in fish and the waters they inhabit, including DDT, PCBs, mercury, and emerging contaminants, such as PBDEs and endocrine disrupting flame retardants, and nutrient over-enrichment that leads to hypoxic or low-oxygen conditions and subsequent loss of marine life.

EPA has established programs for four of these large aquatic ecosystems (LAEs) -- Columbia River Basin, Great Lakes, Long Island Sound, and Puget Sound. These LAE programs already play a substantial role in addressing ecosystem pressures and challenges. They help implement important CWA programs including NPDES/stormwater permitting, Total Maximum Daily Loads (TMDLs), section 319 nonpoint source control grants, water quality monitoring, and water quality standards. For example, the Long Island Sound LAE developed numeric water quality models to support a nitrogen TMDL and assessment of management alternatives. The Long Island Sound LAE also

promoted effluent trading to achieve wastewater treatment plant upgrades in a cost-effective manner. However, substantial environmental challenges remain.

II. Overview of EPA's Large Aquatic Ecosystem Program

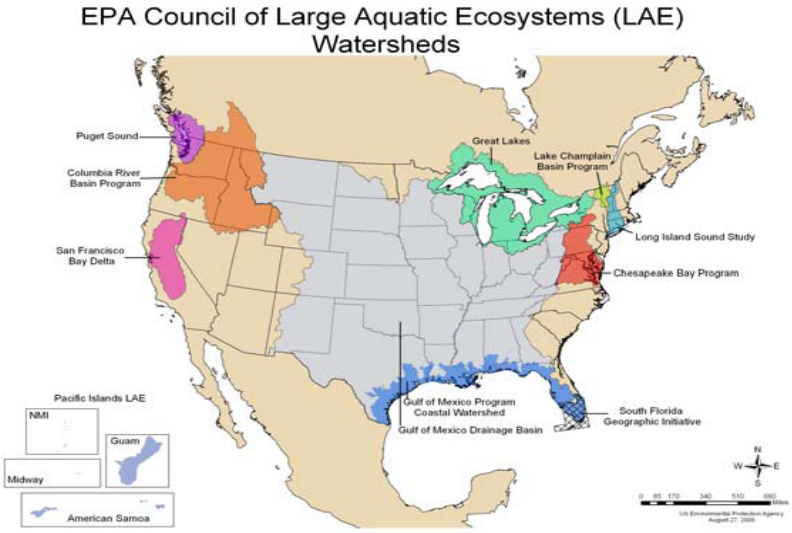
Improved protection of the Nation's large aquatic ecosystems has long been a theme of several major reports and studies. For example, the National Research Council recommended in 1992 that "a large-scale aquatic ecosystem restoration program…should be implemented to regain and protect the physical, chemical, and biological integrity of surface water." In 2007, the National Academy of Public Administration published a report recommending "making large scale ecosystem restoration a national priority."

EPA's *Strategic Plan: 2006 – 2011*, provides for a significantly expanded effort to protect large aquatic ecosystems as a complement to the implementation of core, national water quality programs. These large ecosystem programs are addressing some of the Nation's most complex water resource management challenges, such as nutrient overloading, stormwater flow, and toxic sediments. The *Plan* describes environmental goals for each large aquatic ecosystem and measures of progress that EPA is using to monitor progress toward the goals. The *Plan* also describes the specific program strategies EPA is implementing with its partners to achieve these goals in each ecosystem.[1]

EPA's current set of large aquatic ecosystem programs includes the Chesapeake Bay Program Office, Great Lakes Program Office, Gulf of Mexico Program Office, Long Island Sound Program Office, South Florida Program

[1] For more information see http://www.epa.gov/ocfo/plan/2006/goal_4.pdf.

Office, Lake Champlain Program, Puget Sound – Georgia Basin Program, Columbia River Basin Program, San Francisco Bay Program, and the Pacific Islands Program. Other Federal and non-Federal partners collaborate with EPA LAE program management and staff to develop long-term plans and implement near-term activities based on those plans.



The EPA Office of Water recently established a national Council of Large Aquatic Ecosystems to work within EPA to better support and promote efforts to protect these large aquatic ecosystems. The Council includes the managers of the EPA large aquatic ecosystem programs as well as EPA national water program managers, representatives from the EPA Office of Research and Development, and EPA Regional offices. Key goals of the Council are to encourage the exchange of “best management practices,” improve coordination among large aquatic ecosystem program and core national water programs, strengthen links between ecosystem programs and the EPA Strategic Plan and

budget, and focus EPA research on the top priority needs of the ecosystem programs.[2]

III. Overview of Columbia River Basin, Great Lakes, Lake Tahoe, Long Island Sound, and Puget Sound –Georgia Basin: Challenges, Priorities, Measures, and Proposed Legislation

Columbia River Basin LAE

The Columbia River Basin LAE program covers a major portion of North America including parts of seven U.S. States and British Columbia. The basin provides drainage through an area of more than 260,000 square miles into a river near 1,200 miles in length. The Columbia River Basin provides an important North American backdrop for urban settlement and development, agriculture, transportation, recreation, fisheries and hydropower. The Columbia River Basin's unique ecosystem is home to many important plants and animals. Columbia River salmon and steelhead runs were once the largest runs in the world and are now threatened and endangered in large part due to habitat and water issues including toxics. The tribal people of he Columbia River have depended on these salmon for thousands of years for human, spiritual, and cultural sustenance. Salmon restoration and toxics reduction in the Columbia River Basin is a key environmental justice issue for EPA.

[2] More information on the work of the Council is available at: http://www.epa.gov/owow/oceans/partnerships/large_aquatic.html.

The goal of the Columbia River Basin program is to protect public health and the environment by reducing toxics in fish, water, and sediment of the Columbia River Basin, increasing the actions taken to reduce toxics, and implementing a collaborative monitoring and research strategy to understand toxic loads, emerging contaminants, and overall ecosystem health. This is being done by a collaborative effort of Oregon, Washington, Idaho, Montana, Columbia Basin tribal governments, the Lower Columbia River Estuary Partnership, local governments, citizen groups, industry, and other federal agencies in efforts to restore water quality, remove contaminated sediments, bring back native anadromous fish, and preserve, protect, and restore habitat.

To measure progress and ensure accountability, the EPA tracks three indicators for the Columbia River LAE: number of acres of wetland habitat and acres of upland habitat protected or restored in the Lower Columbia River watershed, acres of known contaminated sediments cleaned up, and reductions in mean concentrations of contaminants of concern found in water and fish tissue.

Congressman Blumenauer's bill to provide assistance for programs and activities to protect the water quality of the Columbia River, would require the Administrator to appoint a team leader in EPA's Region 10 who would support the development and implementation of projects to protect and restore the Columbia River Basin. The bill would authorize appropriations of $40,000,000 for each of the fiscal years 2011 – 2015.

The Great Lakes

The Great Lakes hold 20 percent of the world's fresh surface water, have over 10,000 miles of coastline, and drain about 200,000 square miles of land. They are a source of drinking water for over 30 million people in the U.S. and Canada. Roughly 10 percent of the U.S. population and more than 30 percent of the Canadian population live in the Great Lakes basin, and its fishery is valued at more than $5 billion, providing jobs and recreation opportunities to millions annually.

The Great Lakes are under unprecedented stresses. Years of degradation from the build-up of toxic sediments, mercury and other toxic pollutants, wetlands destruction, land-use changes, invasive species, and pollution from antiquated sewage systems have left the Great Lakes at a tipping point. The impacts from global warming threaten to hasten and exacerbate this situation. Fortunately, we know many of the solutions to these serious threats and we have a new program and plan that will help us achieve on the ground results to improve the health of the Great Lakes.

The President's Great Lakes Restoration Initiative builds upon 5 years of work of the Great Lakes Interagency Task Force and stakeholders, guided by the Great Lakes Regional Collaboration Strategy. This Initiative is a well-orchestrated effort that EPA is coordinating, with the Task Force's leadership, across federal agencies. The Initiative seeks to fund the highest priority activities in order to protect and restore the Great Lakes. The federal agencies are now working together to address those priorities under a common set of goals and

objectives, developed collaboratively and captured in The Great Lakes Restoration Initiative Action Plan. This Action Plan outlines the problems to be addressed, articulates the Initiative's goals and objectives, establishes measurable outcomes, and delineates principal actions that the federal agencies and its partners in the Great Lakes community will pursue to achieve Great Lakes restoration.

The Action Plan is now supported by $475 million requested by the President and appropriated for FY2010. With this funding, the GLRI has begun activities to pursue its long term goals, which include being able to safely eat fish, to swim at our beaches, to have access to safe drinking water, and to sustain a healthy ecosystem for fish and wildlife. With EPA's coordination, federal agencies have been collaborating intensively to launch the GLRI and we are now entering an implementation mode. As a result of this effort, over 16 federal organizations have begun to undertake actions that address five principle focus areas defined in the Action Plan:

- Toxic Substances and Areas of Concern;
- Invasive Species;
- Nearshore Health and Nonpoint Source Pollution;
- Habitat and Wildlife Protection and Restoration; and
- Accountability, Monitoring, Evaluation, Communication, and Partnerships.

The Great Lakes Interagency Task Force and its Regional Working Group is actively working collaboratively with a variety of governmental and

nongovernmental partners and stakeholders to implement the Great Lakes Restoration Initiative Action Plan. Through implementation of principal actions described in the plan, EPA and its partners are on a path to accomplish the highest priority environmental outcomes of the Great Lakes community.

GLRI funds are being targeted and results will be tracked to maximize Great Lakes ecosystem protection and restoration, and to assure accountability. Toward this end, EPA is working with partners to develop a Great Lakes Accountability System (GLAS) modeled on the Chesapeake Bay's system that will help to measure success and be widely accessible to a multitude of partners.

Lake Tahoe

Lake Tahoe is one of the largest, deepest, and clearest lakes in the world; has a cobalt blue color, a biologically diverse alpine setting, and remarkable water clarity; and is recognized nationally and worldwide as a natural resource of special significance. In addition to being a scenic and ecological treasure, the Lake Tahoe Basin is a designated Outstanding National Resource Water under the Clean Water Act. As an outstanding recreational resource, it offers skiing, water sports, biking, camping, and hiking to millions of visitors each year; and contributes significantly to the economies of California, Nevada, and the United States. The economy in the Lake Tahoe Basin is dependent on the protection and restoration of the natural beauty and recreation opportunities in the area.

The Lake Tahoe Basin continues to be threatened, however, by the impacts of land use and transportation patterns, invasive species, and other factors that damage the fragile watershed of the Basin. The water clarity of Lake Tahoe declined from a visibility level of 105 feet in 1967 to only 70 feet in 2008 although the rate of decline in water clarity of Lake Tahoe has decreased in recent years. The average surface water temperature of Lake Tahoe has risen by more than 1.5 degrees Fahrenheit in the past 37 years. The destruction and alteration of wetlands and stream zone habitat have compromised the natural capacity of the watershed to filter sediment, nutrients, and pollutants before reaching Lake Tahoe.

The EPA and its partners are working to implement measures to address these threats, such as the sediments and nutrients that that continue to flow into the lake from stormwater runoff from developed areas, roads, turf, other disturbed land and streams, clouding Lake Tahoe and supporting the growth of algae and invasive plants.

The proposed Lake Tahoe Restoration Act of 2009 would authorize $415 million over eight years for a range of activities to the Forest Service, the Fish and Wildlife Service, and EPA (along with the Army Department for Civil Works, DOI, and DOT) to improve water quality. Key provisions of the bill include measures to implement TMDLs, reduce the risk of catastrophic wildfire, address invasive species, fund scientific research, increasing accountability, and providing public outreach.

Long Island Sound

The Long Island Sound Study (LISS), authorized by Congress in 1985, is a collaborative effort to restore and protect the Sound. Sponsored by the EPA and the states of Connecticut and New York, partners include federal, state, interstate, and local government agencies, industries, universities, and community groups. LISS partners work together to implement a Comprehensive Conservation and Management Plan (CCMP) to maintain the health of the ecosystem, restore coastal habitats, and increase public awareness of the Sound. The environmental concerns affecting the Sound cross political boundaries, and by using a collaborative decision-making approach, LISS partners can share ideas, coordinate actions, and leverage scarce financial resources to protect an entire ecosystem. The LISS CCMP identifies specific commitments and recommendations to improve water quality, protect habitat and living resources, educate and involve the public, improve the long-term understanding of how to manage the Sound, monitor progress, and redirect management efforts. Using the plan as a blueprint, the Long Island Sound Study has continued to refine and add detail to commitments and priorities.

The CCMP identified seven priority problems affecting the health and restoration of the Sound and its ecosystem: hypoxia, or the lack of dissolved oxygen in the water; toxic substances pollution; pathogen contamination; floatable debris pollution; habitat and species loss and conservation; public information, education and participation; and land use impacts on habitats and ecosystems. The top priority of the Long Island Sound Program is reducing

nitrogen loads, which contribute to the low levels of oxygen affecting substantial areas of western Long Island Sound in late summer. To measure progress and ensure accountability, the EPA tracks four indicators for the Long Island Sound: reduced point source nitrogen discharges to Long Island Sound as measured by the Long Island Sound Nitrogen Total Maximum Daily Load (TMDL); reduced size of the hypoxic area in Long Island Sound (defined as the area in which the long-term average maximum July-September dissolved oxygen level is < 3mg/l) and reduced average duration of the maximum hypoxic event; number of acres of coastal habitat, including tidal wetlands, dunes, riparian buffers, and freshwater wetlands protected or restored; and number of miles of river and stream corridor re-opened to anadromous fish passage through removal of dams and barriers or installations of by-pass structures such as fishways. The CWA Section 119 established the EPA Long Island Sound Office to guide efforts and authorized a grant program to assist partners in implementation of the CCMP. The current authorization is through 2010 at $40 million per year. The *Long Island Sound Stewardship Act of 2006* (P.L. 109-359) (LISSA) requires the Administrator to establish and administer a Long Island Sound Stewardship Initiative program, appoint an Advisory Committee, make reports to Congress, and take other actions. The Act authorizes the Administrator to make grants and use funds to administer and implement the Stewardship Initiative, a program to identify and protect (by both management and acquisition) critical coastal lands. The current authorization is through 2011 at $25 million per year. The Stewardship Act was codified under CWA Section 119 as a footnote.

Puget Sound– Georgia Basin LAE

The Puget Sound – Georgia Basin LAE encompasses areas in Washington State and British Columbia, Canada, and is one of the most ecologically diverse ecosystems in North America. In addressing the issues threatening this valuable ecosystem, EPA Region 10 is focusing on several interrelated efforts including participating in the Puget Sound Partnership within Washington State, interagency coordination at the federal level, transboundary coordination with Canada, and implementing EPA's relevant programmatic authorities.

The Puget Sound – Georgia Basin, with a current population of over six million people projected to increase to between nine and 11 million by 2020, faces many ecosystem challenges including habitat alteration in marine waters and on the sea floor, along the shoreline, throughout river systems, and in the upland forests, meadows, prairies, and brush; land conversion that eliminates habitat and increases impervious surfaces in the watersheds; pollution from many sources including vehicles, medication and personal care products, on-site septic systems, fertilizer, animal waste, and airborne emissions; and changes to surface and groundwater supply and availability that affects water temperatures, marine water circulation, oxygen conditions in water bodies, and the productivity of salmon and other species.

To measure progress and ensure accountability, the EPA tracks indicators for Puget Sound LAE that measure improved water quality and the

lifting of harvest restrictions in acres of shellfish bed growing areas impacted by degraded or declining water quality, number of acres of prioritized contaminated sediments remediated, and number of acres of tidally-and seasonally-influenced estuarine wetlands restored.

Senator Cantwell's bill, the proposed Puget Sound Recovery Act of 2009, bill S 2739, would require the Administrator to establish and administer a federal Puget Sound Program Office, appoint a Director, create an Advisory Council to the Administrator, provide grants, and take other actions. The bill would authorize appropriations of $125,000,000 for each of the fiscal years 2010-2015 with funds to remain available until expended.

IV. Relationship to EPA's National Estuary Program (NEP)

The National Estuary Program was established by section 320 of the Clean Water Act Amendments of 1987, with a mission to protect and restore nationally-significant estuaries. The NEP currently includes 28 programs, located along the Atlantic, Gulf of Mexico, and Pacific coasts. Two of the NEPs are co-located with LAEs I have discussed today: Lower Columbia River Estuary Partnership (with Columbia River Basin LAE) and Puget Sound Partnership (with Puget Sound - Georgia Basin LAE). Both the Columbia River Basin and Puget Sound-Georgia Basin bills should be carefully reviewed to ensure that they do not duplicate existing NEP efforts.

V. Recommendations

The success of these programs rests in part on the collaborative nature of the program and its emphasis on the watershed approach to protect and restore large aquatic ecosystems. We would be happy to provide you and your staff with technical assistance on any and all of these bills.

VI. Conclusion

The LAE programs discussed in this testimony are a critical part of EPA's Clean Water Act strategy. They are effective, efficient, and collaborative. And they have demonstrated the value of partnering to achieve environmental results. I look forward to working with you on maintaining and enhancing these important programs.

I would be happy to answer any questions you may have at this time.