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HEARING ON H.R. 6479
SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE COMPLEX ESTABLISHMENT ACT

BEFORE THE
SUBCOMMITTEE ON FISHERIES, WILDLIFE, AND OCEANS
COMMITTEE ON NATURAL RESOURCES
UNITED STATES HOUSE OF REPRESENTATIVES

September 10, 2008

Good morning Chairwoman Bordallo, Ranking Member Brown, and Members of the Subcommittee. I am Angela Gustavson, Director of Government Relations for Restore America's Estuaries. Thank you for the opportunity to discuss Restore America's Estuaries' support of H.R. 6479, *the San Francisco Bay National Wildlife Refuge Complex Establishment Act*. The Refuge Complex this bill would establish includes some of the nation's most significant estuarine habitat. By establishing this complex of refuges, Congress encourages focused attention and increased resources for habitat protection and restoration from the Department of Interior. That is not only appropriate, but essential to advance the mission and purpose of the Refuge System, as authorized under the National Wildlife Refuge Administration Act.

RESTORE AMERICA'S ESTUARIES

Restore America's Estuaries is a national nonprofit organization dedicated to preserving our coasts and estuaries. Established in 1995, our mission is to preserve the nation's network of estuaries by protecting and restoring the lands and waters essential to the richness and diversity of coastal life. Restore America's Estuaries is a national alliance of 11 community-based conservation organizations. Our 11 member organizations include: American Littoral Society, Chesapeake Bay Foundation, Coalition to Restore Coastal Louisiana, Connecticut Fund for the Environment—Save the Sound, Conservation Law Foundation, Galveston Bay Foundation, North Carolina Coastal Federation, People for Puget Sound, Save The Bay—San Francisco Bay, Save the Bay—Narragansett Bay, and Tampa Bay Watch. Collectively, we have over 250,000 members nationwide.

Since its creation, Restore America's Estuaries and its 11 member organizations have:

- Invested about $30 million in local restoration projects;
- Restored more than 56,000 acres of estuarine habitat;
- Built more than 300 oyster reefs and planted over 2.6 million oysters;

- Mobilized more than 250,000 volunteers, including more than 80,000 young people in coastal restoration and education activities each year; and
- Convened the largest biennial national conference for the coastal restoration community.

At the national level, Restore America's Estuaries has been a leader in bringing all sectors of the restoration community together to advance the knowledge, science, policies, and best practices in coastal and estuarine habitat restoration. To accomplish our restoration goals, we have collaborated with government agencies, corporations, civic organizations, scientists, and local volunteers. One of our closest government partners is the U.S. Fish and Wildlife Service. We have worked closely with the U.S. Fish and Wildlife Service at the local level where many of our member organizations have developed long-term working relationships to leverage limited resources and conduct coastal habitat restoration projects. At the national level, we have also collaborated on shared priorities, such as the Estuary Restoration Act.

COASTAL AND ESTUARINE HABITAT LOSS AND DEGRADATION

Healthy coasts and estuaries are essential to the nation's economy and wellbeing. Estuaries are among the most biologically productive, economically valuable, aesthetic, and densely populated places on earth. In addition, estuaries provide opportunities for people to recreate and to appreciate and learn about the natural environment.

Our nation's coasts and estuaries are in a perilous state due to an increasing level of stress. Pollution has rendered 44 percent of tested U.S. estuaries and 12 percent of ocean shoreline waters unfit for uses such as swimming, fishing, or supporting aquatic life. An estimated two million U.S. dams block 600,000 miles of passage for thousands of coastal fish that try to reach native spawning grounds. The coast is the fastest growing region in the country, with the coastal zone losing land to development at a pace faster than the rest of the country. The United States has lost 55 million acres of coastal and estuarine habitat along its coastline due to development, pollution, and other human-made and natural causes, and its coastal habitat continues to disappear at a rate of between 1.2 and 9 percent a year.

Estuaries around the country have lost varying degrees of habitat and biological function. For example, between the 1950s and the 1990s, the Galveston Bay system experienced a net loss of nearly 35,000 acres of its wetlands due to a variety of human and natural causes. In addition, 70 percent of the eel grass beds and 50 percent of the salt marshes around Narragansett Bay in Rhode Island have been lost due to human activity, and the Raritan Bay area in lower New York Harbor has lost over 80 percent of its original wetlands. In Long Island Sound more than 40 percent of the original wetlands are gone. In New Jersey, only a mere 2 percent of the historic native oyster populations have survived after suffering from disease, over-harvesting, and habitat destruction. In the Chesapeake Bay over 16 million bushels of oysters were harvested in the early 1900s, but the harvest has collapsed to only 45,000 bushels in 2006.

Particularly relevant to this hearing, San Francisco Bay has lost 95 percent of its original tidal marshes. Over 150 years, San Francisco Bay has been drastically altered by urbanization, and most of its wetlands have been filled, diked, or drained, leaving the Bay today one-third smaller than its original size.

CLIMATE CHANGE POSES AN ADDITIONAL THREAT

A growing threat to our nation's estuaries is climate change, which exacerbates the already increasing stresses on our sensitive coastal resources. Increasing levels of carbon dioxide and other greenhouse gases pose major threats to our estuaries, including: accelerated sea level rise; shoreline erosion; increased storm frequency and intensity; changes in rainfall and related flooding; saltwater intrusion; increased harmful algal blooms; spread of invasive species; species migration; and habitat loss.

Estuary wildlife and the habitat they depend on are threatened by these changes, and their ability to adapt to environmental change associated with global warming is largely unknown. For example, altered rain and snowfall patterns throughout the U.S. will affect the volume and timing of fresh water flowing into our estuaries, consequently changing salinity and sediment conditions, which will impact sensitive habitats and species. Changing fresh water flows would affect the distribution and abundance of some shellfish such oysters, as well as rare species, that depend on high salinity salt marsh habitats.

Sea level rise is of particular concern. As sea level rises, the frequency and duration of coastal flooding and inundation will increase, severely impacting sensitive coastal resources and adjacent coastal communities. For example, in San Francisco Bay, sea level rose about seven inches over the last century at the Golden Gate, and the Intergovernmental Panel on Climate Change and the 2006 California Climate Action Team project it could rise another two to three feet by 2100, which could cause coastal flooding of Bay wetlands and shoreline cities.

H.R. 6479 HIGHLIGHTS SPECIAL OPPORTUNITIES

Against the background of these threats, the refuges in the Complex proposed by H.R. 6479 offer a special opportunity for focused attention, because they can provide a model for the rest of the Refuge System, and because in their urban setting they have high visitorship and economic impact.

Enhanced Opportunities for Habitat Protection and Restoration

H.R. 6479 would provide focused attention and increased resources for habitat protection and restoration in the San Francisco Bay National Wildlife Refuge Complex. This Complex includes some of the nation's most significant estuarine habitat. San Francisco Bay has been severely altered by urbanization and development. Although only 5 percent of San Francisco Bay's original wetlands remain intact, they account for 90 percent of California's total remaining tidal wetlands, making habitat protection and restoration in this region particularly critical.

The Don Edwards National Wildlife Refuge, the largest unit within the proposed Complex, has been identified as one of the nation's ten most threatened National Wildlife Refuges, in the 2004 Defenders of Wildlife report, *Refuges at Risk*. That report warned that without significant funding to protect and restore the refuge and surrounding lands, planned restoration projects will languish, and increased urbanization and growth will threaten the refuge and the endangered wildlife it protects.

Existing and restored estuaries within the proposed San Francisco Bay National Wildlife Refuge Complex constitute vital habitat for fish and wildlife species that need them to survive. Some of the invaluable ecological services estuaries offer include: filtering pollutants; providing vital nursery habitat for two-thirds of the commercial shellfish and finfish populations and habitat for nesting and foraging coastal birds, stabilizing shorelines and buffering against erosion; and providing flood control.

Estuaries in the Complex that are protected or can be restored also provide significant benefits to counter climate change and sea level rise. Healthy estuaries and coasts enable our shorelines to be more resilient to the impacts of climate change and sea level rise by providing natural flood protection and reducing the need to build seawalls to protect developed shoreline areas. Estuaries also help counter climate change by capturing carbon from of the atmosphere and storing it, a process called carbon sequestration. The Intergovernmental Panel on Climate Change cited wetland restoration as an important strategy for carbon sequestration. Wetlands have the ability to sequester large amounts of carbon deep in the ground beneath the marsh. Scientists have found that restoring salt marshes is one of the most effective measures for sequestering carbon. Unlike many freshwater wetlands, saltwater marshes release only negligible amounts of methane, so the carbon storage benefits of salt marshes are not reduced by methane production. According to scientists, every acre of restored, healthy salt marsh captures and converts at least 870 kilograms of carbon dioxide into plant material annually—equivalent to the greenhouse gas emissions from driving 2,280 miles.

H.R. 6479 recognizes the importance of conserving fish and wildlife habitat in the San Francisco Bay and Monterey Bay areas, and devotes focused attention and increased resources to habitat protection and restoration within the Complex. The proposed Complex represents a unique national asset within the National Wildlife Refuge System and should be a focal point for cutting edge research, science, and practice in habitat management and restoration, as encouraged by this legislation.

Enhanced Opportunities for Public Education and Economic Benefits

The Don Edwards San Francisco Bay National Wildlife Refuge was the nation's first urban refuge and remains the largest National Wildlife Refuge in a metropolitan area. With more than seven million people in this region, the seven National Wildlife Refuges in the San Francisco Bay Complex face unique challenges, but they also offer unparalleled opportunities for visitorship, public education, and economic benefits. H.R. 6479 will enhance the U.S. Fish and Wildlife Service's habitat protection and restoration capabilities in an area where refuges are both challenged by urban interface and offer enormous opportunities for public engagement and education to build understanding and support.

The U.S. Fish and Wildlife Service recently completed a report, *Banking on Nature: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation* (http://www.fws.gov/refuges/pdfs/BankingonNature2006_1123.pdf). This report demonstrates the positive economic impact of recreational use of National Wildlife Refuges, especially around San Francisco Bay.

According to the study, recreational use of National Wildlife Refuges generated almost $1.7 billion in total economic activity during fiscal year 2006. Nearly 35 million people visited National Wildlife Refuges in 2006, supporting almost 27,000 private sector jobs, and producing about $543 million in employment income. About 87 percent of refuge visitors travel from outside the local area. Recreational spending on refuges also generated over $185 million in tax revenue at the local, county, state, and federal level. The economic benefit is almost four times the amount of federal appropriations to the National Wildlife Refuge System in fiscal year 2006.

The same study found that the largest of the San Francisco Bay area's refuges, the Don Edwards San Francisco National Wildlife Refuge, had more than 1.5 million visits in 2006 and returned $43.55 for every $1 in federal budget expenditures. That refuge, of course, features estuarine habitat and the South Bay Salt Pond project, the largest wetland restoration project on the entire West Coast.

The finding of huge benefit and return on federal investment to the economy is consistent with our own research. Restore America's Estuaries convened a panel of internationally renowned experts to help us understand the economic value of coastal and estuary resources. These authors researched and summarized our knowledge of coastal economic value in a report, *The Economic and Market Value of Coasts and Estuaries: What's at Stake*. (I am providing a copy of the Executive Summary of this report for the record).

The report findings are astonishing. Beyond commercial fishing and tourism, healthy coasts and estuaries are essential for protecting more than $800 billion of trade each year, tens of billions of dollars in recreational opportunities annually, and more than 45 percent of the nation's petroleum refining capacity. Through this research, we found that with only 13 percent of the land area of the continental U.S., estuary regions of the nation comprise a disproportionate share of the nation's economy, with 43 percent of the population and 40 percent of the employment. It is clear that much of the U.S. gross domestic product (GDP) is generated in these narrow ribbons along our nation's coasts. In fact, the U.S. Commission on Ocean Policy found that over half of the nation's GDP ($4.5 trillion in 2000) is generated in coastal counties and adjacent ocean waters.

H.R. 6479 recognizes that the intensely urban region of the San Francisco Bay and Monterey Bay areas creates unique challenges. It also recognizes that focused attention and resources will be necessary to address these challenges and take advantage of the unique opportunities for public education and community stewardship to advance the mission of the National Wildlife Refuge System.

CONCLUSIONS

There are many assaults on our nation's coastal and estuarine habitat and the threats are getting more significant, particularly because of the impacts that climate change will have. The refuges within the proposed San Francisco Bay National Wildlife Refuge Complex include crucial estuarine habitat and offer opportunities to significantly increase that habitat, but those refuges are also at risk. Adequate funding and targeted priorities will be needed to manage these

ecosystems well locally, and to seize the habitat protection and restoration opportunities within the seven National Wildlife Refuges in the San Francisco and Monterey Bay areas. H.R. 6479 will enhance the U.S. Fish and Wildlife Service's habitat protection and restoration capabilities in an area where refuges are both challenged by urban interface and offer enormous opportunities for public engagement and education to build understanding and support.

Thank you for the opportunity to address you today. I hope that you will move swiftly to enact this legislation. I would be pleased to answer any questions or provide additional information, and thank you again for the opportunity to provide our support for this valuable legislation.