



*Integrated Natural Resources
Management Plan
June 7, 2011*

Who?

- Port of San Diego
- U.S. Navy
- NOAA
- USFWS
- CDFG
- USACE
- San Diego Audubon
- NPS-Cabrillo
- RWQCB



What's new since 2000 — subject matter?

- Water Quality
- Sediment Quality
- Natural Resources Damage Assessment (oil spill planning)
- Climate Change
- Sustainability (interface between built and natural environments)



What's new since 2000 — planning and regulatory?

SB 68 Follow-Through

- Ecological indicators
- Concerns about INRMP Implementation – need for more cross-jurisdictional partnerships

Energy Sustainability

- California Assembly Bill 32, the Global Warming Solutions Act 2006.
- Energy Independence and Security Act 2007 (Executive Order on Sustainability 2007, Navy Sustainability Policy 2007)



San Diego Bay INRMP



What's new since 2000—planning and regulatory?

Stormwater

- New conditions on Municipal Stormwater Permit in 2001 and in 2007.
- EISA (2007) on Low Impact Development, Navy policy on LID 2007, EO (2009) Federal Leadership in Environmental, Energy, Economic Performance, DoD LID policy 2010
- TMDLs completed for Diazinon in Chollas Creek and for Copper in Shelter Island Yacht Basin. For Chollas Creek, TMDLs were completed for Lead, Copper, and Zinc. In 2007, a TMDL was adopted for the shoreline segment at Shelter Island Shoreline Park
- Local stormwater manuals and ordinances were adopted and implemented for San Diego Bay's watershed.
- LID measures become a component of new development projects by cities, County, Port, and Navy.

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San Diego Bay INRMP



What's new since 2000 — regulatory and planning?

Invasive Species

- EO 13112 (3 Feb 1999) Invasive Species
- California Aquatic Invasive Species Management Plan (2008) under National AIS Plan

Coastal Planning

- EO (2010) Coast and Ocean Stewardship - coastal /marine spatial planning
- Port Environmental Fund
- Port Environmental Advisory Committee
- National Wildlife Refuge Comprehensive Conservation Plan



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What's Accomplished Since the 2000 INRMP?

48 Projects Implemented

- At least 323 acres habitat enhancement implemented or started
- 9 habitat studies or programs
- 9 baywide population surveys or focused species studies
- 10 water quality projects
- 4 sustainability studies or promotions
- 6 watershed enhancement or education projects
- 1 NRDA project
- 6 interpretive or educational outreach projects



Key Issues — Technical Advisory Committee 2008

- Implementation difficulties
- Intertidal losses
- Cumulative effects
- Climate change
- Invasive species
- Piecemeal planning and regulation, especially for offsetting impacts in very limited space available
- Water and sediment quality indicators
 - Lack of adequate understanding and protecting of habitat subcategories to ensure offsetting impacts to these habitats.
 - Information sharing for best available science



2011 Executive Summary

The INRMP emphasizes work for the bay that can be done **BETTER TOGETHER!**

- A key finding is that climate change and invasive species are now principal drivers of change, compared to habitat loss and water quality impairment in the past.
- A key finding is that shoreline structures, and other habitats, can provide more habitat and biodiversity value than they currently do, and should be enhanced even when outside project mitigation requirements.
- We take on the more intractable problems
 - Diffuse
 - Drivers are regional or global
 - Harder to detect impacts (not necessarily habitat acreage)
 - Cumulative
 - Technologically challenging



INRMP Implementation

- Agency-specific regulatory matters would be left to jurisdictions, but there would be *cooperative mitigation planning and a banking plan*. The foundation of this would begin with a “business plan” for restoration that is site-specific throughout the bay, developed by interdisciplinary and interagency team.
- At least **\$200,000,000 over the next several years** is needed to fully implement the INRMP
- Many projects will require *innovation in how agencies interact* and how funding is allocated and prioritized
- **1 goal**, 48 objectives



Top 9 Highest Priority Projects

- *Sustainable Shoreline Structures and Habitat Enhancement* - improve the habitat value of shoreline infrastructure through innovation in construction, experimentation, demonstration projects, education, and interdisciplinary design criteria.
- *Restoration Business Plan* - Develop a coordinated, inter-jurisdictional business plan for implementing restoration projects that achieves INRMP objectives.
- *Enhancement of South Bay vicinity as an integrated and cross-jurisdictional project* - Create additional intertidal and sub-tidal habitat including filling tidal channels as appropriate. Improve California least tern nesting habitat. Support the green sea turtle.

Top 9 Highest Priority Projects

- *Fish Abundance, Health and Habitat Monitoring with Implications for Recreational Fisheries*
- *Benthic Study* - Detect changes in quality of the benthic invertebrate assemblage, especially with respect to food for shorebirds, water quality, toxics, and overall ecosystem health
- *“State of the Bay” Reporting to include Water/Sediment Quality Indicator Species*
Water and sediment quality monitoring of indicator species and physical parameters to evaluate spatial and long-term trends of contaminants of concern, toxicity, benthics, microorganisms, and bioaccumulation in bivalves.



Top 9 Highest Priority Projects

- *Invasive Species Monitoring, Detection, and Education Program* to result in a protocol for reporting and rapid response to detection.
- *Shallow Un-vegetated Habitat Study*. Describe seasonal patterns of temperature, salinity, plankton, invertebrates, fish, and birds.
- *Cooperative Mitigation Management and Banking Plan*. Develop interagency agreements whereby mitigation for a series of projects may be combined for the purpose of accomplishing a larger or more ecologically effective project. Coordinate placement of dredged sediment for beneficial use.



Seven Implementation Initiatives for Work Groups and Stakeholder Forums

- Sustainable Infrastructure
- Habitat Enhancement of Shoreline Structures
- Water and Sediment Quality
- Invasive Species Detection and Control
- San Diego Bay Restoration Partnership
- Ecological Indicators
- Improved Information Access and Reporting



7 INRMP Work Group Initiatives



1. San Diego Bay Restoration Partnership

- Needed to foster the collaboration needed to apply for and manage funds from multiple sources
- Formalized partnership would help the Port, Navy, resource agencies, and others take on in a structured way - the cross-jurisdictional ecosystem work.
- The Port's "Beyond Compliance and Mitigation" is still limited to the Port's purview; and the Navy's requirement to implement INRMPs is constrained in its funding to work that is regulatory driven



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7 INRMP Work Group Initiatives (cont.)



2. San Diego Bay Ecological Indicators

Would provide adaptive management cues and improve the scientific basis of natural resources actions by integrating the monitoring & assessment of ecological and environmental indicators w/ management practices

- Help disparate programs operating under different laws and regulations function as a more cohesive baywide program
- Ensure that monitoring is scientifically based and cost-effective for applied management
- Facilitate more effective communication with the public about environmental status and trends

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3. Sustainability

- *Energy Use:* Improve energy efficiency and greenhouse gas reduction
- *Water Consumption:* Advance LID structures and create standards for water conservation measures through xeriscape landscaping, renovation with water conserving plumbing, the use of grey water, etc.
- *Environmental Design:* Advance LEED certification and expand these guidelines for renovation and new construction based on design standards for high performance buildings and infrastructure
- *Training in Sustainable Project Design and Best Practices:* Develop sustainability training and education programs that highlight new approaches, technologies, funding sources, and certification programs
- *Military and Port Missions:* Ensure sufficient latitude for organizational missions to be fully sustained and adapt to changing requirements.

4. Habitat Enhancement

- Finer-scale mapping of habitat values needed to support
- Mapping would help prioritize enhancement efforts based on fish and bird productivity and support the bay's core values and indicator species
- Regulatory matters associated with armoring the shoreline or creating intertidal habitat through filling of deeper water sites will need to be resolved
- Two habitat enhancement projects highlighted:
 - *Restore the mouth of the Chollas Creek*
 - *Restore the Lower Sweetwater River Flood Control Channel*

5. Water and Sediment Quality

- Continued emphasis on the link of habitats and natural resources rather than clean-up, which has an established process
- First focus: Evaluate the spatial distribution and trends of physical and biological parameters on a wet season/dry season basis
- Second focus: Integrate the data sets with hydrodynamic and oil spill response modeling, so that existing modeling technologies are more applicable for managers

6. Invasive Species Detection and Response

- To be effective – detection and control of invasive species must be vigilant and under unified, coordinated leadership
- Need to conduct a vulnerability analysis to help focus how the bay should be monitored for invasives and to set priorities for a prevention program
- Provide a Watch List for San Diego Bay, high risk areas and protocols for reporting both detections and negative results

7. Data Management & Reporting to Improve Information Access

- Central clearinghouse on the bay's natural resources that is accessible to a broad range of users
- Digital library to support a consistent approach to cumulative effects analysis in environmental documentation
- Water and sediment quality and stormwater data sets would be more accessible and interpreted with GIS overlays

Major Changes Summary -- 2000 and 2011 INRMPs

- Subject matter expansion
- Priority shift from restoring habitat mix using proportions from pre-European bay, to getting all we can out of every habitat. Priorities now focused more on threats, such as climate change/sea level rise and invasives, shoreline development and extremely limited and fragmented real estate to do enhancement work



Major Changes Summary -- 2000 and 2011 INRMPs

- Habitat focus still on intertidal, but also environmentally integrated shoreline structures, mouths of streams, sediment/water quality impaired areas.
- Encourages expansion into watershed work
- Strong emphasis on pilot projects
- Focus on function and productivity rather than habitat acres

