

# INTRODUCTION

Tijuana River National Estuarine Research Reserve (NERR) is part of a nationwide network of National Estuarine Research Reserves known as the NERR system, which was created by the Coastal Zone Management Act (CZMA) of 1972, as amended, 16 U.S.C. Section 1461, to augment the Federal Coastal Zone Management (CZM) Program. The CZM Program is dedicated to comprehensive, sustainable management of the nation's coasts.

The reserve system is a network of protected areas established to promote informed management of the Nation's estuaries and coastal habitats. The reserve system currently consists of 27 reserves in 22 states and territories, protecting over one million acres of estuarine lands and waters.

NERRs are protected and managed through a federal-state cooperative effort for long-term research, education, and interpretation. The management practices and priorities of each reserve vary depending on each site's resources, level of use, ownership, and other factors. With its placement in a binational watershed, Tijuana River NERR faces a unique set of challenges that affect the resource protection, research, and education programs at the Reserve.

NOAA requires each NERR to prepare a written Management Plan, which identifies the Reserve's short- and long-term management issues and proposed actions. The plan must be approved by NOAA and periodically updated. Tijuana River NERR's initial management plan was prepared in 1986; this document is a revision of the plan dated July 2000.

The Tijuana Slough National Wildlife Refuge (NWR or Refuge), located inside the Reserve boundary, is a unit of the National Wildlife Refuge System (NWRS), part of a 92-million acre Refuge System, managed by the U.S. Fish and Wildlife Service (FWS). The FWS requires that a Comprehensive Management Plan (CMP), now referred to as a Comprehensive Conservation Plan (CCP), be prepared for each unit of the NWRS. The Comprehensive Management Plan prepared for the Tijuana Slough NWR in 2000 in conjunction with the Management Plan for the Tijuana River NERR fulfills the mandate for a CCP. The 2000 CMP was the first management plan for the Tijuana Slough NWR. No substantive changes to the CMP as they relate to refuge management are included in this update of the Reserve Management Plan, therefore, the updated document will continue to serve as the approved management plan for the Tijuana Slough NWR through at least 2014.

## **THE CONTEXT OF THIS DOCUMENT AS A NATIONAL WILDLIFE REFUGE COMPREHENSIVE MANAGEMENT PLAN**

Tijuana Slough NWR was established in 1980 under authority of the Endangered Species Act of 1973. The purposes of Tijuana Slough NWR are "...to conserve (A) fish or wildlife which are listed as endangered species or threatened species ... or (B) plants..." (16 USC 1534). Conservation of the endangered light-footed clapper rail was the primary impetus for the establishment of this Refuge.

A Comprehensive Management Plan (CMP), now referred to as a Comprehensive Conservation Plan (CCP), is to be prepared pursuant to the National Wildlife Refuge System Administration Act of 1966 (NWRS Administration Act), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act) (Public Law 105-57). The Improvement Act and Part 602 (National Wildlife Refuge System Planning) of the Fish and Wildlife Service Manual provides the directives and guidance for preparing CCPs.

The CMP for the Tijuana Slough NWR is intended to guide the management of Refuge operations, habitat management, and visitor services for a period of 15 years. Guidance is provided in the form of goals and objectives. Managing the Refuge in accordance with the CMP will ensure that actions implemented on the Refuge will be consistent with the purposes for which the Refuge was established, the mandates of the NWRS, and the Refuge goals and objectives. The goals and objectives for the Tijuana Slough NWR, and the individual strategies and actions to achieve them, are found throughout this document.

## **COOPERATIVE MANAGEMENT AT THE TRNERR**

FWS agreed to include NWR lands in the Tijuana River National Estuarine Research Reserve when the NERR was established as a National Estuarine Sanctuary in 1982. Subsequently FWS endorsed the 1986 Reserve Management Plan, agreed to implement that plan as part of FWS management activities, and provided an easement to the California State Parks (CSP) to build and operate the Tijuana Estuary Visitor Center on Refuge land. In 1996, FWS signed a Letter of Agreement with CSP to cooperate in managing their lands as a seamless reserve (Appendix 4).

The missions and goals of the Refuge System and Reserve System are generally complementary, but are not identical; some NERR top priorities are secondary uses on refuges. In any case of conflict, FWS/NWRS missions and policy as they relate to the protection of endangered species will supersede NOAA/NERR missions and policy on lands of Tijuana Slough NWR. However, a long history of cooperation between the NWR and NERR indicates that those conflicts will be rare.

The decision to prepare a joint document requires some flexibility in agency planning policy and some additional explanations, including the following:

- To enhance the reading and understanding of this plan, the use of the terms "Tijuana River NERR", "TRNERR" and "Reserve" throughout the document generally refer to all constituent land systems, including the NWR, Border Field State Park, and other lands of the Reserve. Where there are policy or other differences that apply to Tijuana Slough NWR, these differences are identified.
- A refuge CMP establishes goals, objectives, and strategies for that refuge. Approval of this CMP asserts FWS support of the goal statements in Chapters 4 - 12 as Reserve-wide goals, objectives and strategies. However, NWR goals are supported and funded through the Refuge Operating Needs System (RONS). Because of varied land

ownerships, many Reserve-wide goals and projects are not appropriately funded through RONS. Approved NWR goals with a RONS nexus are indicated among Reserve-wide goals in bold type.

- The complete RONS List of Proposed Projects for Tijuana Slough NWR is found in Appendix 2.

## **HISTORICAL PERSPECTIVE AND ACCOMPLISHMENTS AT TIJUANA RIVER NERR**

When the local, state, and federal governments joined citizens in 1980 to propose the creation of the Tijuana River National Estuarine Research Sanctuary, the task was formidable and the resources were anything but pristine. Hard work by many individuals representing agencies, organizations, and cities during the 1980s, 1990s, and early 2000s resulted in the following achievements:

- Acquisition of approximately 2,500-acres of land within the Reserve boundary into public ownership;
- Establishment of Tijuana Slough NWR in 1980;
- Designation of the site as an Estuarine Research Sanctuary (later changed to “National Estuarine Research Reserve”) in 1981;
- Inclusion of U.S. Navy lands in the Refuge in 1984;
- Transfer of lands within Reserve boundaries to public ownership;
- Construction of a visitor center with interpretive exhibits;
- Development of educational programs and curricula targeting school districts, decision-makers, and recreational users in both the U.S. and Mexican portions of the watershed;
- Implementation of long-term monitoring, which included completion of the first site profile in the national system, and installation and maintenance of automated data loggers to provide real-time monitoring of estuarine water quality;
- Implementation of a research program at the Tijuana Estuary that placed the Reserve in the international spotlight as a site for outstanding research on wetland ecology and restoration;
- Inclusion in a regional permit from the U.S. Corps of Engineers to dredge the mouths of the Tijuana River and Oneonta Slough in the event of closure during a major storm, as well as acceptance of the Tijuana River Slough dredging by the Coastal

Commission as appropriate to coastal management considerations;

- Development of a long-range strategy for habitat restoration, resulting in the completion of the tidal linkage channel in the northern end of the Reserve, the 20-acre model marsh in the south and a feasibility study for a 250-acre salt marsh restoration in the Reserve's southern end;
- Development of Reserve-wide and watershed-wide Geographic Information System (GIS) to provide the first maps integrating natural resource and social data from both sides of the international border;
- Establishment and expansion of the Coastal Training Program, making significant partnerships with the City of Tijuana to educate decision-makers and implement erosion-control projects in Los Laureles Canyon; and
- Construction of the 60,000-cubic-yard Goat Canyon sediment retention basins and related restoration improvements.

The managing agency vision of the Tijuana River NERR as a seamless reserve has become a reality. Each agency's agenda is met and promoted by an integrated program for resource protection, education and outreach, research and monitoring, and public use.

These integrated programs have been vital to the Reserve's long-term ecological restoration and conservation strategy. Many challenges, including the regulatory constraints and different policies of state, local, and federal agencies, arise when integrating the jurisdictional mandates of three managing agencies (FWS, NOAA, and CSP), the restoration agenda of the State Coastal Conservancy, and the research interests of San Diego State University. Implementation of the program requires a tremendous amount of inter- and intra-agency flexibility and coordination. The Tijuana River NERR, while challenged by overlapping jurisdictions, is fortunate to have a mosaic of resource agencies that share many programmatic goals.

## **THE CONTEXT AND NEED FOR RESOURCE PROTECTION AT TIJUANA RIVER NERR**

Management of the Reserve occurs against a backdrop of resource-degrading activities in the region. The Reserve has suffered from:

- Accelerated sedimentation from erosion on both sides of the border, smothering salt marsh and altering the estuary's natural hydrologic processes;
- Continued encroachment of exotic plant species that displace native habitat. The three primary species targeted for eradication are tamarisk, castor bean and arundo;
- Flow of trash from across the international border, particularly tires and plastics;

- Chronic pollution from domestic and industrial discharges, and continuous freshwater flows that have threatened native species and their habitat; and
- Chronic vandalism of signs, benches, research equipment, and facilities resulting from the Reserve's location in an urban environment.

### **KEY NEEDS AT TIJUANA RIVER NERR ADDRESSED IN THIS PLAN**

Many Reserve needs must still be addressed. This Management Plan articulates those needs and responds with a series of programmatic goals and tasks.

**First**, the agencies that have a stake in the management of the Reserve need to continue to improve coordination and expand partnerships in addressing the above-noted resource problems. Program needs exceed the capacity of any one agency to implement the programs through staff and/or contracts.

**Second**, through coordinated and concerted effort, the Reserve needs to address the long-standing and increasing resource degradation noted above, particularly in the southern end of the Reserve. Historically this area has suffered more damage from natural events and human activity than the more accessible parts of the Reserve to the north. Primary efforts will focus on erosion control in Los Laureles Canyon, maintenance and improvement of the Goat Canyon sediment basins, salt marsh restoration and sustainable development practices in Los Sauces Canyon.

**Third**, the Reserve management needs to expand the Reserve's niche and influence in the larger binational and biogeographic context in the areas of education, research and monitoring, stewardship, and management. The Reserve's management believes the effort is well-timed and the on-site programmatic foundation exists to tackle these very challenging issues in this next era of Reserve operations.

**Fourth**, the Reserve needs to become more relevant and important to the general public, taking advantage of its urban context to build a strong community of advocates for the TRNERR, the NERRS, and estuary protection in general. Political support is the ultimate foundation for resource stewardship.

**Fifth**, integration of research and monitoring programs with resource management, education, outreach, and stewardship must be strengthened.

### **THE 2007 TIJUANA RIVER NERR MANAGEMENT PLAN AND 2000 NWR CMP**

This 2007-2012 Management Plan for the Tijuana River National Estuarine Research Reserve refines concepts presented in the original (1986) management plan and in the subsequent 2000 Plan and addresses many management issues that have developed since the early document was issued. This plan strengthens the Reserve's ability to provide stewardship, research, and education, and to meet the Refuge's wildlife purposes.

The plan reiterates the Reserve's commitment to estuarine stewardship, research, and education for local, governmental, scientific, and educational interests. It builds on programs successfully established under the 1986 plan and offers new means through which the Reserve can play a more active and public role in the local community, the watershed and the bioregion.

Although the Reserve Management Plan updates information provided in the 2000 document, it does not materially alter the vision and goals developed for the Tijuana Slough NWR. Therefore, no substantive changes to the CMP as they relate to refuge management are included in this update of the Reserve management plan. The updated document will continue to serve as the approved management plan for the Tijuana Slough NWR through at least 2014.

This plan was prepared in accordance with all relevant state, local, and federal regulations, and is consistent with the objectives of California Coastal Management Program and with state, local, and federal land-use plans, policies, and controls for the area under consideration.

This Management Plan is presented in 12 chapters. Each uses the structure below to frame issues and direct future management.

## **FORMAT OF THE PLAN**

*Introduction:* Describes the program's primary purpose.

*Policies:* Describes relevant local, state, and federal policies that affect the program, and states any Reserve-specific policies established by the Advisory Council or the operating agencies.

*Existing Conditions and Perceived Needs:* Sets the context for the program, outlines current operations, and defines areas where improvements should be made.

*Plan of Action:* States the goals of the program with specific tasks associated.

