

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 established by Congress in 1972 as part of the Coastal Zone Management Act. The National Oceanic and Atmospheric Administration (NOAA) administers the NERR system to enhance scientific and public understanding of estuaries and thereby contribute to improved estuarine management.

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 the first revision of that plan.

The Tijuana Slough National Wildlife Refuge, located inside the Reserve boundary, is a unit of the National Wildlife Refuge System (NWRS). Managed by the U.S. Fish and Wildlife Service (FWS), the 92-million-acre Refuge System is the nation's largest system of public lands dedicated to the conservation of wildlife resources.

The FWS requires that a Comprehensive Management Plan (CMP) be prepared for each unit of the NWRS. All refuges must develop their plans, in compliance with the National Environmental Policy Act, by the year 2005. Comprehensive Management Plans will be reviewed every 15 years, or as required. This is the first CMP for Tijuana Slough NWR.

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

Tijuana Slough National Wildlife Refuge (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 this Refuge.

The NWRS is administered by the FWS under provisions of, among other legal guidance, the National Wildlife Refuge System Improvement Act of 1997 (16 USC 668dd et. seq.).

The mission of the FWS is to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people (052 FW 1.3 A). The mission of the NWRS is "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."

The NWR System's four guiding principles for management and general public use of the NWRS address public use, habitat, partnering, and public involvement (E.O. 12996). These principles are:

- Identify six forms of wildlife-dependent recreational activities as priority public uses of the NWRS;
- Continue the NWR System's emphasis on conservation and enhancement of the quality and diversity of fish and wildlife habitat;
- Recognize that partnerships with other federal and state agencies, tribes, organizations, industry, and the public can make significant contributions to refuge management; and
- Require full and open opportunities for public involvement in decisions regarding acquisition and management of refuges.

The goals of the NWRS (602 FW 1.4 M) are:

- To preserve, restore, and enhance in their natural ecosystems (when practicable) all species of animals and plants that are endangered or threatened with becoming endangered;
- To perpetuate the migratory bird resource;
- To preserve a natural diversity and abundance of fauna and flora on Refuge lands;
- To provide an understanding and appreciation of fish and wildlife ecology and man's role in his environment, and to provide Refuge visitors with high-quality, safe, wholesome, and enjoyable recreational experiences oriented toward wildlife, to the extent these activities are compatible with the purposes for which the Refuge was established.

The goals and objectives for Tijuana Slough NWR, and the individual strategies and actions to achieve them, are found throughout this document.

The NWRS is a primary-use, federal land system. Each refuge has a purpose or set of purposes that are the highest priority use(s) of that refuge. All other uses (e.g., recreation, research, commercial, etc.) are secondary and may be permitted to occur only if they are compatible with the purpose(s) for which the refuge was established. Compatible uses are ones that may enhance, or will not materially interfere with or detract from, the NWRS mission or refuge purpose(s). A list of current compatibility determinations for approved secondary uses of Tijuana Slough NWR is located at Appendix 1.

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 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.

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 Department of Parks and Recreation (CDPR) to build and operate the Tijuana River NERR Visitor Center on Refuge land. Since 1986, the Reserve Management Plan functioned as the only approved management plan for Tijuana Slough NWR. In 1996, FWS signed a Letter of Agreement with CDPR to cooperate in managing their lands as a seamless reserve (Appendix 6).

Soon after NOAA and CDPR initiated the planning process resulting in this document, FWS and other partners agreed to prepare a joint plan to serve both the Reserve and the Refuge. This joint planning effort supports the FWS "ecosystem approach" to management by emphasizing landscape-level planning and partnering.

The decision to prepare a joint document also 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" 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 - 10 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.
- A complete list of RONS projects for Tijuana Slough NWR, with cross-referencing to appropriate sections of the CMP, is found in Appendix 2.
- A list of required NWR Step-down Management Plans to be written is included in Appendix 3.

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 agencies, organizations, and cities during the 1980s and 1990s 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 a sanctuary 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 recreationists 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 two data loggers to provide real-time monitoring of estuarine data;
- 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 nation-wide 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 and a restoration plan for the 500-acre salt marsh in the Reserve's southern end; and,
- 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.

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 CDPR), 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:

- Chronic pollution from domestic and industrial discharges, and continuous freshwater flows that have altered the natural hydrological regime and facilitated the invasion of exotic species;
- Accelerated sedimentation from erosion on both sides of the border, altering the topography and enabling invasion of exotic species;
- Travel by illegal immigrants from Mexico through reserve habitats, and the resulting trampling of sensitive habitats; and
- Chronic vandalism of signs, benches, research equipment, and facilities resulting from the Reserve's location in an urban environment.

REMAINING NEEDS AT TIJUANA RIVER NERR

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

First, the agencies that have a stake in the management of the Reserve need to improve coordination. This requires improved efficiency of on-site inter-agency operations and the development of creative options for acquiring new full-time staff positions that are responsible in part for coordinating inter-agency activities. Program needs exceed the capacity of any one agency to implement the programs through staff and/or contracts. Expanded facilities are needed to accommodate the staff growth.

Second, through coordinated and concerted effort, the Reserve needs to address the long-standing and increasing resource degradation 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. Primary efforts will focus on erosion control and habitat restoration in Goat Canyon, a binational subwatershed within the Tijuana River Watershed. All programs will be able to turn more of their efforts to this southern area, but the resource protection, management, and restoration programs will have the greatest bearing on this area during the life of this plan.

Third, the Reserve management needs to establish the Reserve's niche in the larger binational and watershed 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. The plan analyzes and provides a comprehensive approach for meeting the needs of the Reserve over the planning period.

Fourth, Reserve management needs to improve its relationship with the communities surrounding the Reserve and to provide recreational opportunities that are both consistent with environmental, conservation, and restoration goals and compatible with NWR purposes.

Fifth, integration of research and monitoring programs with operations, education, outreach, and stewardship must be enhanced. This requires a strategy to physically locate or access the Reserve databases on-site and to provide GIS expertise on site.

THE 1998 TIJUANA RIVER NERR MANAGEMENT PLAN/NWR CMP

This 1998-2003 Management Plan for the Tijuana River National Estuarine Research Reserve and Comprehensive Management Plan for Tijuana Slough NWR refines concepts presented in the original (1986) management 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. As a NWR CMP, this document is a 15-year plan that may be updated in conjunction with future NERR planning updates.

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 10 chapters. The early chapters of the plan describe the Tijuana River NERR physical environment and national framework (Chapter 1), core principles, goals, and objectives of the Reserve (Chapter 2), and the accomplishments at Tijuana River NERR since its creation (Chapter 3). The subsequent seven chapters -- Administrative Framework (Chapter 4), Resource Protection, Management, and Restoration (Chapter 5), Research and Monitoring (Chapter 6), Education and Interpretation (Chapter 7), Public Access, Involvement, and Use (Chapter 8), Facilities (Chapter 9) and Watershed Coordination (Chapter 10) -- use the following structures to frame issues and direct future management:

Mission: Describes the program's primary purpose.

Goals: Establishes several goals for the program that reflect the priorities of the Reserve and guide content, themes, and decisions within the program.

Policies: Describes relevant local, state, and federal policies that affect the program, and states any Reserve-specific policies established by the Management Authority 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: Restates the goals of the program with objectives and specific tasks associated. Where relevant, scheduling or cost estimates are provided.