

FINAL EVALUATION FINDINGS
TIJUANA RIVER NATIONAL ESTUARINE RESEARCH RESERVE
CALIFORNIA

August 2005 – April 2009

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Office of Ocean and Coastal Resource Management
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TABLE OF CONTENTS

I.	Executive Summary	1
II.	Program Review Procedures	2
	A. Overview	2
	B. Document Review and Issue Development	2
	C. Site Visit to California	3
III.	Reserve Program Description	4
IV.	Review Findings, Accomplishments, and Recommendations	5
	A. Operations and Management	5
	1. Reserve Administration and Staffing	5
	2. Reserve Management Authority	7
	3. Facilities	8
	4. Management Plan	9
	5. Friends Group	10
	6. Tijuana River Valley Recovery Team	10
	7. Border Fence	11
	B. Research and Monitoring Program	11
	1. Research Program	12
	2. Monitoring Program	14
	3. Site Profile	16
	4. Graduate and Undergraduate Research Fellowships	16
	C. Education, Outreach, and Volunteer Program	17
	1. K-12 Education	18
	2. Community Outreach and Education	19
	3. Volunteer Program	20
	D. Coastal Training Program	22
	E. Stewardship Program	25
	1. Restoration and Invasive Species	26
	2. Public Access	28
V.	Conclusion	30
VI.	Appendices	31
	Appendix A. Summary of Accomplishments and Recommendations	31
	Appendix B. Persons and Institutions Contacted	33
	Appendix C. Persons Attending the Public Meeting	36
	Appendix D. OCRM’s Response to Written Comments	37
	Appendix E. Program Response to 2005 Evaluation Findings	38

I. EXECUTIVE SUMMARY

The Coastal Zone Management Act (CZMA) of 1972, as amended, established the National Estuarine Research Reserve System (NERRS). Sections 315 and 312 of the CZMA require the National Oceanic and Atmospheric Administration (NOAA) to conduct periodic performance reviews or evaluations of all federally approved National Estuarine Research Reserves (NERRs). The review described in this document examined the operation and management of the Tijuana River National Estuarine Research Reserve (TRNERR or Reserve) during the period of August 2005 through April 2009. The Tijuana River National Estuarine Research Reserve is administered by California State Parks.

This document describes the evaluation findings of the Director of NOAA's Office of Ocean and Coastal Resource Management (OCRM) with respect to TRNERR during the review period. These evaluation findings include discussions of major accomplishments as well as recommendations for program improvement. The fundamental conclusion of the findings is that California State Parks is successfully implementing and enforcing its federally approved NERR.

The evaluation team documented a number of TRNERR accomplishments during this review period. Notable Reserve efforts include development of a successful volunteer program that supports the Reserve's goals and activities; completion of significant infrastructure improvement projects including the construction of a large multi-purpose room that allows for large trainings; involvement in regional groups which has facilitated the education program's ability to reach new students and provided a forum for the research and monitoring program to communicate results to coastal natural resource managers; integrating the NERRS System-wide Monitoring Program and data collection protocols with regional monitoring efforts; obtaining additional grant funding to maintain the momentum of the volunteer, stewardship, and watershed programs; and facilitating the development of a master plan for Los Laureles Canyon which provides for improved land use planning and reduction of risks associated with sediment flows.

In addition to these numerous accomplishments, the evaluation team identified areas where the Reserve and its programming could be strengthened. The recommendations for TRNERR are in the form of two Necessary Actions that are mandatory and three program suggestions. The Reserve must submit the revised management plan by the indicated deadline and develop a Coastal Training Program (CTP) consistent with NOAA guidance. In addition, three Program Suggestions describe actions that OCRM believes TRNERR could take to improve or enhance the program but that are not mandatory. As TRNERR develops a CTP consistent with NOAA guidance, the Reserve will have new opportunities to serve coastal decision makers in the San Diego region. Suggestions thus include having the CTP and research programs work together to better communicate research results to coastal decision makers and for the CTP, volunteer, and education programs to consider further expanding educational opportunities for volunteers. Opportunities for providing educational experiences for visitors and compatible public access, in particular at Monument Mesa were also identified.

II. PROGRAM REVIEW PROCEDURES

A. OVERVIEW

NOAA began its review of TRNERR in December 2008. The §312 evaluation process involves four distinct components:

1. An initial document review and identification of specific issues of particular concern;
2. A site visit to California including interviews and a public meeting;
3. Development of draft evaluation findings; and
4. Preparation of the final evaluation findings, partly based on comments from the state regarding the content and timetables of recommendations specified in the draft document.

The recommendations made by this evaluation appear in boxes and bold type and follow the findings section where facts relevant to the recommendation are discussed. The recommendations may be of two types:

Necessary Actions address programmatic requirements of the CZMA's implementing regulations and of the TRNERR approved by NOAA. These must be carried out by the date(s) specified;

Program Suggestions denote actions that the OCRM believes would improve the program, but which are not mandatory at this time. If no dates are indicated, the state is expected to have considered these Program Suggestions by the time of the next CZMA §312 evaluation.

A complete summary of accomplishments and recommendations are outlined in Appendix A.

Failure to address Necessary Actions may result in future finding of non-adherence and the invoking of interim sanctions, as specified in CZMA §312(c). Program Suggestions that are reiterated in consecutive evaluations to address continuing problems may be elevated to Necessary Actions. The findings in this evaluation document will be considered by NOAA in making future financial award decisions relative to the TRNERR.

B. DOCUMENT REVIEW AND ISSUE DEVELOPMENT

The evaluation team reviewed a wide variety of documents prior to the site visit, including (1) the federally approved 2000 Management Plan and program documents; (2) financial assistance awards and work products; (3) semi-annual performance reports; (4) official correspondence; (5) previous evaluation findings; and (6) relevant publications on natural resource management issues in California.

Based on this review and on discussions with OCRM's Estuarine Reserves Division, the evaluation team identified the following priority issues:

- The Reserve's general administration, including grants and fiscal management;
- Implementation and status of the Management Plan;
- Facilities development and operations planning;
- Implementation of the Reserve's research, stewardship, monitoring, coastal training and education programs;
- Reserve staffing and needs;
- The manner in which the Reserve coordinates with other governmental and non-governmental organizations and programs in the state and region; and
- Major accomplishments and challenges during the review period.

C. SITE VISIT TO CALIFORNIA

Notification of the scheduled evaluation was sent to California State Parks, TRNERR, and a regional newspaper. In addition, a notice of NOAA's "Intent to Evaluate" was published in the *Federal Register* on April 1, 2009.

The site visit to California was conducted April 13-17, 2009. Carrie Hall, Evaluation Team Leader, OCRM National Policy and Evaluation Division; Alison Krepp, TRNERR Program Specialist, OCRM Estuarine Reserves Division; and Becky Suarez, Reserve Manager, Elkhorn Slough NERR, CA formed the evaluation team.

During the site visit, the evaluation team interviewed TRNERR staff, California State Parks management and staff, and other state officials, coastal researchers, educators, students, and nongovernmental representatives. Appendix B lists persons and institutions contacted during this review.

As required by the CZMA, NOAA held an advertised public meeting during the evaluation on April 15, 2009, at 7 p.m., at the Tijuana Estuary Visitor Center, 301 Caspian Way, Imperial Beach, CA. The public meeting is to give members of the general public the opportunity to express their opinions about the overall operation and management of TRNERR. Appendix C lists persons attending the public meeting.

The excellent support of TRNERR staff with the site visit's planning and logistics is gratefully acknowledged.

III. RESERVE PROGRAM DESCRIPTION

NOAA's Office of Ocean and Coastal Resource Management designated the Tijuana National Estuarine Research Reserve (TRNERR or Reserve) in 1982. The state lead agency is California State Parks. TRNERR is located in San Diego County on the southern coast of California. The Reserve encompasses approximately 2,500 acres of tidally-flushed wetlands, riparian, and upland habitats in the southernmost estuary on the west coast. Like most wetlands remaining in southern California, TRNERR is adjacent to a large urban population. The Reserve's watershed is bi-national and the 1,700 square miles includes the cities of Imperial Beach and San Diego and the Mexican cities of Tijuana and Tecate.

TRNERR is one of the few remaining relatively undisturbed tidally flushed coastal wetlands in southern California and is the largest of only two coastal estuaries in southern California not bisected by roads or rail lines. While remaining relatively undisturbed, the Reserve is impacted by development in the watershed and issues include water quality, trash, invasive species, and sedimentation. The Reserve's estuarine habitats include open-water channels, beaches, barrier dunes, mudflats, and salt marshes. Uplands include sensitive coastal sage scrub, riparian habitats, and agricultural lands. TRNERR is a saline marsh habitat for most of the year and boasts more than 370 species of birds, of which about 320 are migratory. The Reserve supports six federally and state listed endangered/threatened birds: the light-footed clapper rail, California least tern, least Bell's vireo, California Gnatcatcher, Western Snowy Plover, Belding's savannah sparrow, peregrine falcon, and California brown pelican. The lower Tijuana River Valley soil is composed of poorly consolidated stream deposits of clay, silt, sand, and cobble-sized particles which are highly erodible during major rain events. The Reserve has built, and manages, sediment basins to capture this material to ensure it does not fill in the estuary.

The Reserve is a composite of lands and waters owned by a variety of local, state, and federal agencies. California State Parks and U.S. Fish and Wildlife Service (USFWS) share facilities and "seamlessly" manage the operation of the Reserve as laid out in a "Letter of Agreement" and shared management plan¹.

The Southwest Wetlands Interpretive Association (SWIA) serves as a cooperating association for the Reserve. SWIA is a non-profit organization dedicated to the acquisition, preservation, and restoration of wetlands. Federal funds are allocated to California State Parks and SWIA; SWIA directly supports TRNERR's Research Coordinator and restoration efforts. In addition, SWIA supports the Coastal Training Program through a subcontract with California State Parks.

The Reserve Management Authority (RMA) maintains responsibility for coordinating the implementation of TRNERR management policies. Through voluntary participation in the RMA, member agencies consent to establish Reserve policies, jointly promote Reserve programs, and cooperate to provide funding and staff to accomplish the mission of the Reserve. The RMA meets quarterly to conduct Reserve business and to obtain public input.

¹ In 2000, the Reserve and USFWS developed a shared management plan to serve as the 15-year Comprehensive Management Plan for the Tijuana Slough NWR and the five-year management plan for the Reserve. The Reserve is in the process of completing a revised management plan for the next five years while the NWR plan will continue until 2015.

IV. REVIEW FINDINGS, ACCOMPLISHMENTS, AND RECOMMENDATIONS

A. OPERATIONS AND MANAGEMENT

The Reserve's administration ensures that the Reserve has the administrative relationships and staff necessary to fulfill the Reserve's mission and goals as established in the administrative rules and interagency agreements.

The goals of the TRNERR's administration, as stated in the 2000 Management Plan are to:

- Maintain an administrative framework that maximizes interagency cooperation and allows the Reserve to take full advantage of funding opportunities.
- Establish and maintain an effective administrative structure that provides clear policy direction and guidance in the management of the Reserve.
- Coordinate and cooperate with federal, state, and local partners to manage a seamless reserve that addresses watershed and ecosystem-level concerns while meeting the established purpose of the National Wildlife Refuge (NWR) (Refuge goal)².

During the evaluation period, the Reserve worked closely with NWR staff and built inter-agency collaboration, where appropriate, with Reserve programs; more effectively utilized the Reserve Management Authority to address current issues; developed a new draft management plan; and constructed new facilities and renovated existing facilities allowing the Reserve to expand and improve its programming. In addition, the Reserve worked closely with SWIA to maximize funding opportunities and supported SWIA's efforts to pursue grant funds and implement projects that furthered the Reserve's mission.

1. Reserve Administration and Staffing

TRNERR is managed by California State Parks and coordinates with USFWS and other land holding agencies. The relationship between California State Parks and USFWS is laid out in a "Letter of Agreement" that calls for "seamless" operation of the Reserve and Refuge through maximizing communication, cooperation, and mutual respect. California State Parks is responsible for meeting NOAA operation requirements and administering cooperative agreements with NOAA. The two agencies cooperate closely on the day-to-day management of the Reserve and share office space and a joint management plan. The joint management plan meets both the requirements of the NERRS for each reserve to have a five-year management plan identifying the reserve's short- and long-term management issues and proposed actions and the Fish and Wildlife Service's requirement that a 15-year Comprehensive Management Plan (CMP) be prepared for each unit of the wildlife refuge system. The Reserve and Refuge staff work together to protect endangered species, control invasive species, monitor Reserve and Refuge resources, conduct research, hold public use programs, and other activities. The evaluation team was impressed with the seamless operation of the Reserve and the benefits of being able to share resources and to work closely together on projects.

² The management plan includes both Reserve and Refuge goals. Refuge goals are specifically noted as "Refuge goal".

Accomplishment: Reserve staff work seamlessly with USFWS across Reserve and Refuge operations including education, stewardship, and research and monitoring.

In addition to USFWS, numerous other cooperating agencies play a role in the operation of the Reserve.

- The **City of San Diego** has land use and regulatory responsibilities for the majority of the Tijuana River Valley. In addition, the City holds title to approximately 200 acres within the Reserve boundary which are managed by the County of San Diego.
- The **County of San Diego** is responsible for land acquisition, restoration, resource protection, public use management, and environmental education on County park lands within the Reserve.
- The **U.S. Navy** owns 606 acres within the Reserve boundary. Through a 1992 MOU with the USFWS the U.S. Navy assists in the preservation and management of the resources on their property.
- The **Southwest Wetlands Interpretive Association (SWIA)** is a non-profit organization dedicated to education and acquisition, preservation, and restoration of wetlands in the Tijuana Estuary. SWIA provides support to preservation, restoration, and education efforts and administers NOAA funds to support Reserve staff and management efforts related to research and monitoring.
- The **State Coastal Conservancy** coordinates, including planning and financial support, reserve land acquisition and restoration programs.
- Portions of the Reserve are located within the boundaries of the **City of Imperial Beach** which has land-use responsibilities as designated in their Local Coastal Plan.
- The **U.S. Border Patrol** patrols the Reserve to prevent the entry of illegal immigrants, terrorists, drugs, and other contraband into the U.S.
- The Reserve is an auxiliary field station for **San Diego State University**.

During the evaluation period, the Reserve's dedicated and knowledgeable staff have successfully grown the Reserve's research, education, stewardship, volunteer, and watershed protection programs. The evaluation team found the staff to be highly regarded in their field and frequently described as valuable partners. Reserve staff are actively engaged in addressing regional issues and lead and assist numerous committees and groups that are dedicated to improving conditions in the Tijuana River Valley such as the Tijuana River Valley Recovery Team, Southern San Diego Wetlands Advisory Board, Border Biodiversity Committee, and San Diego Museum Council.

The Tijuana River estuary is set in an urban watershed that faces significant threats including erosion and sedimentation; unpermitted development on steep eroding hillsides subject to flash flooding; water quality; trash; and invasive species. The Reserve's staff have taken on the tremendous challenge of addressing these threats and brought together U.S. city, county, state, and federal governments; Mexican federal and city governments; non-profits; elected officials; government staff; and citizens to address threats to the estuary. Set in a binational watershed,

TRNERR is the only Reserve that regularly collaborates across an international boundary. Reserve's staff thoughtful diplomacy has garnered wide support for valuing, restoring, and protecting the Tijuana River Estuary. The evaluation findings highlight various examples of the Reserve's successes in promoting binational collaboration among a broad array of partners to address threats to the estuary.

Accomplishment: TRNERR staff collaborate with a broad and complex array of partners across all sectors to address threats to, and protect, the Tijuana River Estuary.

At the time of the site visit, the core Reserve staff positions were filled. The Reserve Manager and Education Coordinator are funded by California State Parks and the Research Coordinator position is funded by NOAA through a cooperative agreement with SWIA. In addition to the core staff positions, the Reserve is staffed by 11 California State Parks employees including the Stewardship Coordinator. SWIA also employs ten staff that support the Reserve. SWIA supports research and GIS staff positions through a cooperative agreement with NOAA. A Los Laurels Project Specialist is funded through the Earth Island Institute. The Reserve has a total of 24 positions and 13 of these positions are part-time. At the time of the site visit, several positions were vacant including new term-limited positions to implement a multi-year grant from the U.S. Environmental Protection Agency. In 2006, the Reserve was able to hire a Volunteer Coordinator, a new position, which has allowed the Reserve to significantly expand opportunities for public participation and its education, research, and stewardship program activities (*see Section C. Education, Outreach, and Volunteer Program*). The Tijuana Slough National Wildlife Refuge is staffed by four full-time employees.

2. Reserve Management Authority

TRNERR's administrative framework includes a Reserve Management Authority (RMA). The RMA meets quarterly and is composed of 11 permanent representatives from California State Parks, USFWS, California Coastal Commission, State Coastal Conservancy, City of Imperial Beach, City of San Diego, County of San Diego, U.S. Border Patrol, U.S. Navy, City of Tijuana, and City of Tecate and two term positions held by SWIA and San Diego State University. The RMA's responsibilities include (1) coordinating activities of the various constituent agencies; (2) providing Reserve-wide policy guidance; (3) overseeing progress toward achieving NERRS requirements and Reserve goals; and (4) providing a forum for discussing complex issues and addressing conflict.

The Reserve has four standing committees that assist the RMA and at each quarterly meeting program committee chairs update the council.

- Research (and Stewardship) Committee: coordination of research, restoration, and scientific monitoring at the Reserve
- Education and Interpretation Committee: environmental education and outreach activities
- Trails (Public Access, Use, and Involvement Committee): recreation programs, law enforcement, signage and publications, and public affairs

- Coastal Training Program Advisory Committee: Coastal Training Program, cross-border programs, and binational issues

The Reserve promotes public participation and engagement in management of the Reserve. RMA meetings are open to the public and time is reserved on the agenda for public comment and suggestions regarding management of the Reserve. In addition, members of the public serve on the Reserve's committees.

The previous evaluation encouraged the Reserve to shift the emphasis of the RMA's quarterly meetings from agency reporting to problem solving around specific Reserve issues. During the evaluation period, the Reserve has used RMA meetings to engage partners and address issues such as multi-use conflicts over trail use and management.

During the evaluation site visit, TRNERR staff discussed the importance of their partnerships in implementing their mission and two partnerships in particular they would like to continue to strengthen. The U.S. Border Patrol is a RMA member and key partner but does not always attend RMA meetings. With the completion of the border fence, the need for Border Patrol enforcement activities within the Reserve boundary should decrease. The Reserve is looking to work with Border Patrol to reduce patrol activities within the Reserve boundary. Reserve staff discussed the possibility of developing a more targeted law enforcement subcommittee of the RMA (San Diego Police, San Diego County Sheriff, California Department of Fish and Game and the U.S. Border Patrol all have jurisdiction in various areas) to address key issues of interest to the Reserve and U.S. Border Patrol, in particular the development of resource maps. In addition, staff discussed their desire to work more closely with the U.S. Navy on trail development and stewardship activities. The evaluation team met with the new Community Planner and Liaison Officer for Naval Base Coronado who was developing a compatibility management plan for naval base lands and looking for common interest partners. The development of the compatibility management plan may provide new opportunities for the Reserve to work with the Navy on trail development and stewardship activities and to leverage additional federal resources. OCRM commends the Reserve for better utilizing the RMA and continuing to assess how it can be used to better engage key partners in Reserve management activities.

3. Facilities

The Reserve strives to provide and maintain accessible facilities that support and facilitate the Reserve's mission. The previous evaluation recommended that TRNERR staff clearly define current and future space requirements and how they might be met. During the evaluation period, the Reserve identified priority facility improvements and obtained the funding to construct several new facilities and to renovate and improve existing facilities. These facility improvements have allowed the expansion and improvement of the Reserve's programming. One of the most significant accomplishments was the completion of a large multi-purpose room that can accommodate up to one hundred people, an attached courtyard, and offices for up to five staff. The multi-purpose room provides new opportunities for holding large meetings, trainings, and workshops.

The Reserve has also completed additional facility improvements that enhance the Reserve's ability to fulfill its mission and meet the goals laid out in the Reserve's Management Plan which also serves as the NWR Management Plan.

- A new 1,300 square foot office building built adjacent to the existing garage provides office space for up to 11 Reserve and Refuge staff.
- An exterior security system, including bullet proof cameras, has successfully discouraged recurring vandalism.
- A new "wet" research laboratory allows the Reserve to conduct its own water quality testing.
- A renovated "dry" lab has been expanded and sustainable design features such as solar panels, solar tubes and skylights have reduced the Reserve's carbon footprint and utility costs.
- A new shade structure over the interpretive plaza overlooking the Reserve provides space for special events, education programs, and outdoor meetings.
- The existing visitor center was remodeled and demonstrates the use of green building materials. The exhibit space and interpretive sales area were also renovated and increased sales from the interpretive area support Reserve events and programming.
- An entrance station and restroom were constructed at Border Field State Park. The entrance station provides an educational opportunity to reach visitors entering the south end of the Reserve.

Accomplishment: TRNERR has successfully identified and completed numerous infrastructure improvements that have enabled the Reserve to more effectively meet its program goals.

At the time of the site visit, the Reserve was also looking to expand and improve a green house facility and storage area to increase the Reserve's ability to cultivate plants for restoration projects and had received funding to begin this expansion. OCRM encourages the Reserve in its efforts to expand and improve its greenhouse and storage facility area.

4. Management Plan

Reserves are required by Federal regulation to have a current NOAA-approved management plan (15 C.F.R. Part 921.13). The plans describe the reserves' goals, objectives, and management issues, as well as strategies for research, education and interpretation, public access, construction, acquisition and resource preservation, and, if applicable, restoration and habitat manipulation. A management plan has four valuable functions (1) to provide a vision and framework to guide reserve activities during a five year period; (2) to enable the reserve and NOAA to track progress and realize opportunities for growth; (3) to present reserve goals, objectives, and strategies to constituents; and (4) to guide program evaluations. Regulations also require that a reserve's plan be updated every five years.

At the time of the site visit, TRNERR's 2000-2005 management plan was out of date and TRNERR had submitted a draft management plan which was being reviewed by NOAA staff and comments on the plan were discussed during the site visit. The revised plan reflects the Reserve's vision and strategy for the years 2010–2015. OCRM provided TRNERR with comments on the management plan in 2009. The Reserve has incorporated these comments into a second draft management plan and will submit the final revised management plan to OCRM for review by November 30, 2010.

Necessary Action: TRNERR must submit a revised management plan to the Estuarine Reserves Division by November 30, 2010.

5. Friends Group

TRNERR is supported by the Friends of San Diego Wildlife Refuges, a non-profit organization that supports conservation and appreciation of the National Wildlife Refuges of San Diego County including Tijuana Slough, Sweetwater Marsh, San Diego, and South San Diego Bay. The Friends operate the visitor center bookstore and support Reserve and Refuge events and monitor Congressional actions that might impact the Reserve and/or Refuge System. In addition, the Friends Group provides insurance coverage for Reserve events held offsite, such as Fiesta del Rio. At the time of the evaluation site visit, the Friends Group was exploring opportunities to increase its grant writing and grants management capacity. OCRM encourages the Friends Group in its efforts to expand its administrative capacity and increase its activities to support conservation and appreciation of the Refuge and Reserve.

6. Tijuana River Valley Recovery Team

The Tijuana River Valley Recovery Team was formed in 2008. This new group is a collaboration of more than 30 federal, state, and local agencies who have come together to protect the Tijuana River Valley. The team's focus is the removal of trash, to prevent future accumulations of trash and sediment, and to restore the Tijuana River floodplain to a balanced wetland ecosystem.

The Reserve is an active member of the new team and is providing support to the development and implementation of actions to improve the Tijuana River Valley. The Tijuana River Valley Recovery Team has four smaller teams: Border Action Team, Cleanup Action Team, Restoration Action Team, and Binational Action Team. Reserve staff co-chair the Restoration Action Team whose mission is to imagine, plan, coordinate, and implement the restoration, mitigation, and flood control features of the Tijuana River Valley ecosystem from the border to the ocean and the Binational Action Team whose mission is to identify the sources of trash and sediment in the valley watershed that impact the floodplain and to recommend, establish, and implement a plan to abate and manage these sources in cooperation with Mexican agencies.

7. Border Fence

The San Diego area has long been a popular crossing area for travel and immigration between the U.S and Mexico. The Border Patrol began erecting fences along the border south of San Diego in 1990. In 1996, the Illegal Immigration Reform and Immigrant Responsibility Act called for the construction of a 14-mile long triple fence from the Pacific Ocean inland. In its plans to construct the fence, the U.S. Border Patrol proposed filling Smugglers Gulch with an estimated two million cubic yards of earth in an area of highly erodible soils. In 2004, the California Coastal Commission determined that the plan was not consistent with the California Coastal Management Program's policies to the maximum extent practicable under the authority of the CZMA. The Real ID Act of 2005 was then passed and stated that the Secretary of Homeland Security had the authority to waive all legal requirements to ensure expeditious construction of the barriers and roads associated with the Border Fence. In April 2008, the Secretary waived all legal requirements in their entirety, including the CZMA for certain sections of the fence, including those areas adjacent to the Tijuana River Estuary. To allow for the construction of the triple fence and patrol roads (now called the Border Infrastructure System), 53 acres of land within the Reserve were condemned by the federal government and transferred from California State Parks to the U.S. Department of Homeland Security. The construction of the Border Infrastructure System has resulted in the movement of over three million cubic yards of earth, cutting mesa tops, and filling canyons, to allow for a linear and level road for patrol activities within the triple fence corridor of the Border Infrastructure System.

Throughout the planning and construction of the Border Infrastructure System, Reserve management and staff have continued to build relationships with Border Patrol staff, state and federal elected officials and their staff, local officials, and many others to ensure that impacts from activities are minimized to the extent possible. The Reserve's good working relationship and regular engagement with local U.S. Border Patrol staff has provided ongoing opportunities to minimize impacts to environmentally sensitive areas within the Reserve and to continue to discuss ongoing issues and possible solutions, such as access to Friendship Park.

Accomplishment: TRNERR staff have worked collaboratively with federal, state, and local partners to minimize impacts to the Reserve from the construction of the border fence and patrol activities where possible.

B. RESEARCH AND MONITORING PROGRAM

The Reserve System's research and monitoring program goals are to provide a stable environment for research through long-term protection of reserve resources; address coastal management issues through coordinated estuarine research within the System; and collect and make available information necessary for improved understanding and management of estuarine areas.

The goals of the TRNERR's research and monitoring program, as stated in the 2000 Management Plan, are to:

- Foster understanding of impacts from activities occurring within and outside the Reserve's boundaries and study options to mitigate damages from those activities, with a particular emphasis on the restoration of ecological habitats.
- Provide opportunities for compatible research that improves the available scientific information for use in the protection of coastal ecosystem integrity, biodiversity, and endangered species habitat.
- Improve the availability of research information as a basis for more informed coastal ecosystem management decisions.
- Fund and staff a research program at the Reserve that encourages broad-view (watershed and regional scope) and interdisciplinary research of estuarine ecosystems.
- Enhance involvement with research institutions in the region to promote research with the Reserve and its watershed and to further coordinate their research agendas.
- Using the Reserve's GIS system, characterize and monitor the environment of estuarine habitats under the management of the Reserve.
- Expand the existing monitoring plan such that it records physical and biological parameters relevant on national, regional, and local scales and can influence decision-making relating to estuarine resources.
- Involve the public in monitoring as a means to augment the amount of data collected and promote citizen involvement in stewardship.

The Reserve's research program is coordinated by the Research Coordinator, who works in cooperation with the USFWS Wildlife Biologist and Refuge Manager. The research program is staffed by a Research Coordinator, GIS Specialist, two Research Associates and two Research Assistants. In addition, two Environmental Services Interns split their time on research activities (25 percent) and educational activities (75 percent). During the evaluation period, the research and monitoring program staff fostered understanding of the impacts of invasive species and successful restoration techniques; promoted the Reserve as a research site and assisted researchers with navigating the permitting process; brought Reserve research results to scientists and managers through participation in regional workgroups; helped develop and conduct Bight '08 a regional monitoring program; worked closely with the volunteer and education programs to train teachers and involve citizens and students in monitoring and science; and assisted with the development of plans for phase two of a large wetland restoration project known as the Tijuana Estuary Tidal Restoration Program (TETRP).

1. Research Program

The Reserve's research program focuses on the Reserve's priority issues including wetland restoration, invasive species, and sediment management. In the early 1990's, the Reserve began a planned 500-acre multi-phased marsh restoration project, called TETRP. TETRP has been implemented through a cooperative partnership and funded through various sources including the California Coastal Conservancy, USFWS, U.S. Environmental Protection Agency, and Southern California Wetlands Recovery Project. In 2002, a reassessment of the initial program led to the

lowering of acres to be restored to 200-250 acres due to sedimentation risk and/or degradation in the project's most southerly areas. During the evaluation period, research program staff led the development and technical review of the Friendship Marsh Design and Feasibility Study which was completed in 2008. The projected cost of phase two of TETRP is estimated to be between 90-130 million dollars, dependent upon the sediment disposal method. If the sediment can be deposited on nearby beaches instead of an inland disposal site, the cost savings will be approximately 40 million dollars. The sediment from this area does not meet the U.S. Environmental Protection Agency's guidelines under the Clean Water Act unless it can be demonstrated that the fine sediment will not damage nearshore resources. The Reserve's research and stewardship programs are working with the U.S. Geological Survey and others to test and understand the fate and transport of this fine-grained material and its impact on nearshore resources when it is placed in the surf zone (*see also Section E. Stewardship Program*).

TRNERR is actively working to remove and control invasive plants within the Reserve and the research program works closely with the stewardship program to support these efforts. For example, research conducted by the Reserve has improved understanding of the impact of Tamarisk on salt marsh ecosystems. Reserve research has shown that the addition of detritus from Tamarisk can shift the composition of invertebrate species and can potentially impact higher trophic levels. Research has also been conducted to catalogue invaders and to determine the soil salinity and moisture tolerance of invasive species in the upland-high marsh ecotone. This information will enable managers to better predict areas that are susceptible to invasion and provide them with the information needed for developing effective management techniques. The Reserve and SWIA have used the results of the research in their efforts to control Tamarisk within the Reserve (*see also Section E. Stewardship Program*).

Accomplishment: OCRM commends TRNERR for conducting research that provides relevant information to the coastal resource management community in California and Mexico.

The research, education, stewardship, and volunteer programs work closely together to engage students and the general public in learning about estuaries and the research conducted at the Reserve. The Reserve's research and education programs have benefited from having staff that split their time between the two programs. This relationship has facilitated the inclusion of Reserve research, estuarine science, and System-wide Monitoring Program data into K-12 programming and lesson plans. The volunteer program supplies volunteers who assist researchers with data collection. Research program staff assist with high school teacher trainings and the Research Coordinator has partnered with education program staff to aid students at Mar Vista High School and Kearny High School with their project-based science modules.

The Reserve's research and monitoring program provides information that can help coastal natural resource managers make better decisions. Although research program staff are already taking advantage of opportunities to communicate research results, the development of a Coastal Training Program (CTP) that includes a focus on the northern portion of the watershed will

provide the Reserve with new opportunities to reach coastal managers whose decisions impact the estuary.

Program Suggestion: OCRM encourages TRNERR’s research program to work with the Coastal Training Program to assess and pursue opportunities to communicate research results to coastal natural resource managers.

The research program also houses a GIS program staffed by a GIS Coordinator (Research Associate) who performs GIS activities and addresses the Reserve’s general information technology needs. The GIS program generates maps for a variety of uses and has assisted with assessing the impacts of sedimentation in the southern end of the Reserve. In addition, the program is developing systems to expand near real-time data capacity and deliver it to interested users, including adding telemetry to the Los Penasquitos Lagoon data logger and facilitating web-based data delivery. The GIS Coordinator is also working at the national level to assess GIS capabilities and better coordinate GIS capacity across the system.

The Reserve provides not only a place to conduct research but support to scientists looking to conduct research within the Reserve. The state of California manages activities occurring in the state’s coastal zone through the California Coastal Commission and other state agencies and the USFWS regulates activities on Refuge lands. The evaluation team met with a scientist who stated the staff’s guidance in navigating the permitting process was crucial to his ability to conduct his research within the Reserve and the Research Coordinator was “one-stop permit processing.” In addition to guiding scientists through the permitting process, Reserve staff provide physical and informational support for estuarine research by scientists and students from universities, research institutions, and other organizations.

During the evaluation period, the Research Coordinator reconstituted the Research Program Advisory Council, a program suggestion in the previous evaluation. The council is primarily composed of university faculty and agency staff. The council serves as both a sounding board to determine program direction and assess project issues, as well as a platform to inform scientists about Reserve needs and research opportunities. In particular, the council has been working with the Research Coordinator to determine if TRNERR should continue a long-term 20 year old benthic monitoring program in favor of increasing the monitoring of water quality parameters or other monitoring needs. OCRM commends the Reserve for reconstituting the Research Program Advisory Council and using the council to address research issues.

2. Monitoring Program

The goal of the NERR System-wide Monitoring Program (SWMP) is to identify and track short-term variability and long-term changes in estuarine water quality, habitat, and land use in each reserve. The data gathered through SWMP provides standardized information about how estuaries function and change over time, enabling scientists to gain a better understanding of how human activities and natural events can change coastal ecosystems.

TRNERR continues to implement SWMP. At the time of the site visit, the Reserve was monitoring water quality and nutrients at two sites in the north arm of the Tijuana Estuary which represent conditions near the mouth. The Reserve had to discontinue monitoring at two other sites further up a tidal channel, due to excessive sedimentation. The Reserve partnered with the USFWS to add water quality monitoring sites at two sites in nearby South San Diego Bay which are now SWMP stations under an agreement with the NERRS. One site is located within a salt works system that is slated to be restored and the other is a reference site at the southern end of San Diego Bay. The monitoring information collected from these data loggers will be critical for the design and permitting of the restoration effort. The Reserve also maintains a weather station adjacent to the Visitors' Center and compiles data on air temperature, relative humidity, barometric pressure, rainfall, and wind speed and direction at 15-minute intervals. The weather station and one water quality data logger are telemetered and the information is available in real time on the internet through the SWMP Centralized Data Management Office. The Reserve is working to add telemetry to all of its SWMP sites which will allow the sites to be better integrated with the San Diego Coastal Ocean Observing System. OCRM encourages the Reserve in its efforts to add telemetry to all of its SWMP sites.

The Reserve cooperates with USFWS in conducting extensive ecological monitoring throughout the Reserve. Monitoring includes:

- California least tern breeding and snowy plover colony, annually (USFWS)
- Light footed clapper rails, annually (USFWS)
- Belding's savanna sparrow populations, periodically (USFWS)
- Small mammal trapping survey, periodically (USFWS)
- Benthic invertebrates, bi-annually (TRNERR)
- Vegetation, annually (TRNERR)
- Fish community, bi-annually (TRNERR)

The Reserve's research and monitoring staff are highly regarded and the Research Coordinator serves on a number of regional advisory boards which has provided staff with opportunities to communicate the results of Reserve research and monitoring programs and promoted consistency of monitoring efforts within the region. The Research Coordinator serves on the Southern California Wetlands Recovery Project Science Advisory Panel, County Task Force Executive Committee, City of San Diego's Wetlands Advisory Board, and Southern California Coastal Ocean Observing System Senior Advisory Committee.

TRNERR is one of 40 plus partners involved in the Southern California Bight '08, a regional monitoring program led by the Southern California Coastal Water Research Project. Data collected includes assessments of water quality, benthic and water column chlorophyll, and macroalgae. Through the Reserve's involvement in this effort, the collaborators in the region, from Santa Barbara to the U.S. border with Mexico, adopted a water quality monitoring program based on NERRS SWMP protocols. As part of this project, the Reserve is also maintaining eight additional non-SWMP data loggers in San Diego County estuarine systems. In addition, the Reserve is leading an effort through the Southern California Coastal Water Research Project to develop protocols to assess a variety of indicators of wetlands ecosystem health. OCRM

commends the Reserve for its involvement in regional research and monitoring efforts allowing it to better integrate its program with other regional efforts and promote consistent data collection protocols.

Accomplishment: TRNERR's monitoring program is well integrated with regional efforts and NERRS SWMP water quality monitoring protocols have been adopted by regional partners.

3. Site Profile

NERRS implementing regulations require each reserve to develop a comprehensive site profile. A site profile is designed to (1) compile scientific datasets relating to the reserve, (2) characterize the physical and biotic components of the environment, (3) synthesize the known ecological relationships within the reserve and its watershed, (4) trace the impact of natural and human disturbances, and (5) explore the need for future research, education, and management initiatives.

TRNERR completed its site profile in the late 1980's. The site profile is not currently available online or referenced on the Reserve's website. OCRM encourages the Reserve to provide the existing site profile on-line, or a description of the site profile with a notice that it is available in the Reserve's library and/or upon request. OCRM also encourages the Reserve to consider additional opportunities for providing information useful to researchers, restoration consultants, and others, such as updating a section(s) of the site profile. The Reserve may find it beneficial to update recommendations for future research and monitoring and/or other sections to encourage research that supports the Reserve. The Reserve is in the process of compiling a list of more than 600 documents related to the Tijuana River Estuary and wetlands which will be available on a compact disk.

4. Graduate and Undergraduate Research Fellowships

The Reserve continues to be actively engaged in the education and training of both undergraduate and graduate students. During the evaluation period, the Reserve has sponsored four NERRS Graduate Research Fellows (GRF). The NERRS GRF Program is a system-wide program that supports masters or doctoral students' management-related research projects that enhance scientific understanding of the reserve system, provide information needed by reserve managers and coastal decision-makers, and improve public awareness and understanding of estuarine ecosystems and management issues. NERRS GRF research projects include:

- *Using soil salinity and soil moisture to inhibit invasive species at the upland-high marsh ecotone*
- *Particle classification and accumulation rates of sediment within fluvial and feeder canyon depositional environments of the Tijuana Estuary Reserve*
- *Predicting Argentine ant (*Linepithema humile*) invasions at multiple spatial scales: The relative importance of abiotic and biotic factors*
- *Fertilization, sedimentation, and invasion: Anthropogenic disturbance of diverse nitrogen-fixing microbes and dominant wetland plants in Tijuana estuary*

In addition, the Reserve has supported a Social Science Fellow whose research project was *Greywater and the Grid: Explaining Informal Water Use in the Tijuana River Watershed*. The Reserve has also supported undergraduate interns from the University of California San Diego Environmental Systems program, and studies have included population dynamics of key species in the Reserve and region.

C. EDUCATION, OUTREACH, and VOLUNTEER PROGRAM

National Estuarine Research Reserves are federally designated “to enhance public awareness and understanding of estuarine areas, and provide suitable opportunities for public education and interpretation.” The reserve system provides a range of educational programming to key audiences depending on watershed and community needs and the specific capacity of each reserve.

TRNERR’s education program’s goals, as described in the 2000 Management Plan, are to:

- Maintain and strengthen high-quality, interpretive and school-based environmental education programs offered through the visitor center and outdoor classroom sites (Refuge goal).
- Refine existing and develop new interpretive and education programs at Tijuana River NERR to support restoration efforts in the southern portion of the Reserve.
- Develop and implement a coastal decision-maker training program.
- Develop water quality monitoring as a cornerstone theme throughout the education program.
- Ensure that a complete and well-trained staff is in place to implement the educational and interpretive programs.
- Integrate educational and interpretive programs with other Reserve programs, particularly the research program.

The Reserve’s education program is staffed by a full time Coordinator and two Environmental Services Interns who also support the research program, and a Visitor Services Park Aid. In addition, a Community Outreach Coordinator manages the volunteer program which supports the education program and other Reserve sectors. The Reserve’s education and volunteer program also work closely with the USFWS Interpreter. The two programs regularly support each other, especially when conducting special events. During the evaluation period, the education program strengthened its school-based environmental education programs and outreach events, developed new educational programming, developed a successful volunteer program, and continued to integrate education with the stewardship and research programs, including the incorporation of recent research and monitoring data into educational programming.

The education program develops an annual work plan with targeted goals that include strategic opportunities for growth. The education program is supported by an advisory council composed of teachers and educators that meet quarterly. The advisory council provides assistance in

solving problems and ground truthing programs, and provides the Reserve with a strategic opportunity to build partnerships.

1. K-12 Education

TRNERR is located in a heavily urban environment, within the boundaries of the South Bay Union School District (South Bay USD). Approximately 75 percent of the families in the district live on incomes below the poverty line. The Reserve works closely with the South Bay USD and middle and high schools from the nearby Sweetwater Union School District. The Reserve hosts approximately 125 school classes each year, most from elementary schools. In order to make the most out of the field trips, teachers are required to attend a two or four hour workshop and high school teachers must attend an 11 hour training. The Reserve also grants about \$1,000 in scholarships annually to schools to assist with the cost of providing bus transportation.

The Reserve offers free field trips to elementary, middle, and high school students as well as to youth organizations like ecology clubs and service groups. Some programs are available in English and Spanish to better serve the surrounding communities. Reserve educational offerings include:

- **Marsh Awareness with Resources for Slough Habitats or M.A.R.S.H.** (in English and Spanish) is geared towards students in grades 1st – 6th and introduces students to basic wetland and upland ecology and cultural history.
- **Tijuana Estuary Explorers** (in English and parts are available in Spanish) is geared towards students in grades 3rd – 6th, and the curriculum meets state standards and incorporates reading, writing, and science into four comprehensive activities about the Tijuana Estuary and its watershed.
- **Junior Rangers** is a weekly one-hour after school program held in state parks throughout California, targeting students ages 7–12. Junior Rangers focuses on different aspects of wetland ecology and participation in hands-on activities.
- **The Tijuana Estuary High School Teachers' Guide** is an inter-disciplinary high school field-based curriculum designed to educate students about the Tijuana River Estuary's natural and cultural resources. It was developed to align to state content standards and incorporates SWMP data in several activities.

The NERRS has developed a K-12 Estuarine Education Program (KEEP) to help students learn about essential coastal and estuarine concepts, develop data literacy skills, and strengthen problem solving skills. The Education Coordinator has worked on the development of the national estuarine curriculum and has piloted a merge of the existing Reserve curriculum into the KEEP framework. OCRM commends the TRNERR for working to merge the existing Reserve curriculum into the KEEP framework.

In addition to its core educational programs, the education program has also pursued new and innovative programming. The San Diego Museum Council and San Diego Unified School District have recently initiated a partnership that will provide high school internships and job shadowing opportunities at the Reserve. TRNERR has also partnered with Kearny Science and

Technology High School's GIS program. High school students were given eco-dilemmas and then 'companies' of four to five students developed proposals and competed for a job to address an eco-dilemma at TRNERR. The Reserve's research staff assisted students with learning about the eco-dilemmas and provided support during the development of their proposals.

The Education Coordinator's leadership roles in regional groups including the Environmental Education Council of the Californias, the oldest bi-national coalition of environmental educators along the border; the North American Association of Environmental Education; and as president of the San Diego Museum Association, have provided new opportunities and partnerships for the Reserve. The Reserve saw a decrease in school field trips from 2005-2007 as principals would not allow field trips before standardized testing was completed. Through involvement with the San Diego Museum Council, the Education Coordinator was invited by the South Bay USD to participate in the selection of the new district science curriculum in January 2007. Through this effort, the Reserve's estuarine training was incorporated into the district's curriculum. The development of this relationship with South Bay USD led to a new opportunity to recruit "ambassadors" from each of the district's schools. The ambassadors received special training and worked within their schools to recruit teachers to participate in the Tijuana Estuary Explorers Training. In 2008, school programs increased by 35 percent and the number of students by 25 percent, in part due to the strengthened partnership.

Accomplishment: The education program's strong partnerships have resulted in more students participating in Reserve classes and the Reserve's estuarine training being incorporated into South Bay Union School District's curriculum.

2. Community Education

TRNERR is located in an urban area and local residents from a wide range of socio-economic backgrounds visit the park to enjoy nature and learn more about the estuary. The Reserve is highly valued locally for its recreational and natural resources and its location in the community of Imperial Beach is convenient to many who can access the Reserve by simply walking, biking or taking public transportation. The Reserve offers a variety of activities and programs to engage the community including regularly scheduled programs and special events. The Reserve's keystone special event is the annual Fiesta del Rio which celebrates National Estuaries Day, National Wildlife Refuges Week, and the region's history and provides various fun and educational activities for families. Attendance at the event has steadily grown and in 2008 over 3,000 people attended the fifth year of the event. In 2007, the Reserve celebrated its 25th anniversary. A celebration capped with a large ceremony celebrating the anniversary and new and renovated facilities drew officials from NOAA, Mexico, California State Parks, the City of Tijuana, and other federal, state, and local officials and hundreds of volunteers.

The Reserve also provides regular programming and activities for the community. Regular activities include a monthly Saturday speaker session and brown bag lunch for volunteers and potential volunteers; weekly guided bird walks; bi-weekly nature walks; and regular volunteer stewardship events are held every Wednesday and Friday and every other Saturday.

The Reserve is located in the City of Imperial Beach which is promoting the development of ecotourism as a means to increase economic opportunities while preserving and capitalizing on its old southern California feel. The evaluation team met with the Mayor of Imperial Beach, City Manager, and a Council Member who announced that a proposal for a new LEED certified hotel catering to ecotourists had just received its permit approval from the California Coastal Commission. They also noted the Reserve's importance and economic value in drawing visitors to the area to participate in activities such as birding. The City and new hotel's focus on ecotourism provides the Reserve with an excellent opportunity to work with businesses and interested audiences to promote and provide educational opportunities for tourists. OCRM encourages the Reserve to assess opportunities for engaging with new eco-tourism businesses and their program strengths and to consider opportunities for expanding educational programming and/or products for tourists. For example, the Reserve may wish to increase and/or develop new educational activities for birders.

The Reserve's education and outreach program also provides support to local partners such as the San Diego County Tijuana River Valley Regional Park. The county park has a small budget and relies on its partnership with the Reserve to provide programming. Through TRNERR's docent program, a volunteer leads quarterly walks through the park's butterfly garden. The evaluation team met with the County Park Ranger who stated he was grateful for this opportunity to advertise activities in the county recreation guide and draw visitors to the park and sustain its visibility.

TRNERR also uses additional communication tools to reach the public and target audiences. The Reserve began publishing its first quarterly e-newsletter, *Go With the Flow*, during the evaluation period. The Reserve's website also provides a key opportunity to engage the public and has information on the Reserve's education, stewardship, coastal training, and research programs. Although, the website provides basic information it could be expanded and enhanced to better highlight the great work of the Reserve and to provide additional educational opportunities. For example, a dedicated CTP page could provide coastal decision makers with information on upcoming training and key resources. At the time of the evaluation site visit, the Reserve was pursuing a new web content management system. OCRM encourages the Reserve in its efforts to update, enhance, and expand the website.

5. Volunteer Program

A diverse population of 1.9 million people lives within a 30 minute drive of the Reserve. The Reserve is uniquely positioned to reach a large number of people and to create advocates for estuaries and parks. In 2006, the Reserve created a new full-time volunteer coordinator position and a volunteer coordinator was hired. The Volunteer Coordinator created a formal volunteer program that supports the Reserve's mission and goals. Formal procedures for screening, orientation, training and recognition were developed as was a volunteer handbook, application, and job descriptions for each volunteer opportunity. TRNERR has also been very successful in recruiting volunteers and the Reserve had 2,255 volunteers, 6,583 hours of service, and 104 long term active volunteers during the evaluation period. The Volunteer Coordinator and education staff also developed a docent program including a seven week docent training course and

established a plover patrol training program. The evaluation team heard from numerous volunteers who strongly commended the Reserve staff for making them feel appreciated, tailoring their experiences to their interests, and always having well managed events.

The volunteer program is well integrated with the stewardship, education, and research sectors and provides key support for their activities. Volunteers involved in stewardship activities assist Reserve staff with removing invasive species, plantings, watering, plover patrol volunteer program, working in the plant nursery, collecting native plant seeds, and other activities during recurring weekly and one-time events. Volunteer docents regularly lead bird and nature walks and assist with school groups and junior ranger activities, greatly expanding the Reserve's capacity to provide educational programming. Volunteers also assist researchers at the Reserve and members of the horseback riding community assist Reserve visitors and provide law enforcement with a copy of their activity logs through the trail patrol program.

The Reserve has held many successful volunteer events that have supported the Reserve's different sectors. A small sampling includes:

- **International Coastal Cleanup Day at Border Field State Park** which brought together a variety of organizations to collect 2,140 pounds of trash and recyclables along 1.5 miles of coast. (*September 2007*)
- **National Public Lands Day in partnership with REI** 50 volunteers from REI helped with the second phase of a restoration project and re-vegetated one acre with 500 native plants and donated 150 service hours. Long term volunteers then assisted with the ongoing stewardship by watering the newly planted vegetation and removing weeds. (*September 2007*)
- **Invasive Removal, Plant Salvage, and Cactus Planting** near 5th and Grove with University of California San Diego's Upward Bound students (39 volunteers including 31 youth, 5 adults, and 3 long-term TRNERR volunteers) (*July 2008*)
- **Weeding at Border Field State Park's Entrance Area** (23 volunteers including 5 youth and 18 adults) (*July 2008*)
- **Fossil Salvage at Border Field State Park** (39 adult volunteers) (*July 2008*)
- **Trail Maintenance near the Tijuana Estuary Visitor Center** (18 volunteers including 9 youth and 9 adults) (*August 2008*)
- **Invasive Plant Removal and Native Planting at Tijuana Slough NWR** near 5th and Grove (69 volunteers including 9 youth and 60 adults) (*November 2008*)
- **High Tide Clapper Rail Count at the Tijuana Slough NWR** (5 volunteers including 1 youth and 4 adults) (*December 2008*)

Accomplishment: TRNERR has successfully developed a well-run volunteer program that supports the Reserve's mission and education, stewardship, and research goals.

TRNERR has a strong core group of volunteers who participate in long-term volunteer programs such as the education docent program, stewardship volunteer program, plover patrol volunteer program, the trail patrol program, and research program. TRNERR provides volunteers with additional opportunities to learn more about the Reserve through a monthly speaker series after

Saturday volunteer events. The evaluation team heard from volunteers about their interest in learning even more about the estuary and obtaining ‘civics training’ to learn how to be a voice for the Reserve. Several volunteers audited the seven week docent training course just to learn more about the Reserve. OCRM encourages the education program to consider developing and providing additional adult education opportunities of interest to volunteers and supportive of the Reserve’s mission. As the Reserve develops a CTP with a focus on the northern portion of the Tijuana River watershed, there may be additional opportunities for the CTP and education programs to partner to deliver more training and educational events for volunteers.

Program Suggestion: OCRM encourages the CTP, education, and volunteer programs to consider pursuing opportunities to expand educational opportunities for volunteers.

The Reserve has a strong foundation for successfully managing a large number of volunteers and is continuing to look at ways to improve and expand its volunteer program. Reserve staff noted their desire to institute some program management measures such as conducting an annual survey of staff and volunteers, choosing software and developing a better data management program, developing a policy to guide termination of detrimental volunteers, and expanding the docent program in order to be able to provide more field trip opportunities for students. OCRM commends TRNERR in its efforts to continually improve and expand the volunteer program and encourages the Reserve to continue to pursue opportunities for improvement.

During the evaluation period, the Volunteer Coordinator has been successful in writing grants to support the Reserve. A major focus of grant writing has been to seek continued funding from both private and public sources for the Reserve’s volunteer program and over \$45,000 in grant funds from several organizations has been secured to support the volunteer program. Although the Reserve has been successful in obtaining funds to maintain the program, OCRM encourages the Reserve to pursue sustainable long-term funding for the volunteer program. In addition, the Volunteer Coordinator successfully wrote a multi-year grant for the U.S. Environmental Protection Agency’s West Coast Estuaries Initiative and received nearly \$1 million to support watershed management and restoration activities. Over a three-year period, the grant will fund the Reserve’s new Watershed Coordinator and a Watershed Assistant, Volunteer Coordinator, and 2.25 Stewardship Assistants.

Accomplishment: The Reserve successfully obtained funds to maintain the momentum of critically important programs that further outreach, education and restoration: the watershed, stewardship, and volunteer programs.

D. COASTAL TRAINING PROGRAM

The Coastal Training Program (CTP) is designed to provide up-to-date scientific information and skill-building opportunities to the people who are responsible for making decisions affecting coastal lands and waters. The program aims to provide coastal decision-makers with the knowledge and tools they need to address critical resource management issues. Development of a CTP includes establishing a training advisory committee, conducting a market analysis,

developing a program strategy that outlines priority coastal issues to be addressed, prioritizing target audiences, and creating a marketing plan.

TRNERR's CTP was fully implemented in March 2005. The overall goal of the Reserve's CTP, taken from the 2005 Strategy, is to "improve decision-making related to coastal resources management at local and regional levels." During the evaluation period, TRNERR's CTP focused its efforts on the Tijuana River watershed and in particular, areas within Mexico. The CTP continued to play a key role in facilitating interactions between U.S. and Mexican decision-makers on issues of importance to the Reserve. The CTP Coordinator has built and capitalized on strong relationships with elected and municipal officials, nonprofits, and others in the cities of Tijuana and Tecate to improve land use planning and sedimentation and erosion control. During the evaluation period, the CTP was staffed by a CTP Coordinator and a part-time assistant.

During the evaluation period, the CTP has continued to work in Los Laureles Canyon to improve land use planning and to reduce erosion and trash. The canyon is located along the border in Tijuana, Mexico and is home to 80,000 people, many of them squatters in areas that lack basic infrastructure. Development in Los Laureles Canyon has led to barren hillsides and unstable soils. During rain events, major mud flows place lives at risk, destroy homes and roads, and the sediment and associated trash flow into the Tijuana Estuary. The CTP Coordinator has played a lead role in working with the City of Tijuana to facilitate the development of a master plan for Los Laureles Canyon. The CTP Coordinator assisted with finding funding to support the development of the plan and the Mexican federal government and the State Coastal Conservancy provided financial support. The master plan was passed into public law in 2007, and is the first plan to cover three jurisdictions and be based on a geographic boundary. The master plan covers coordination among state, federal, and local agencies; control of stormwater runoff; revegetation; preservation of open space; and transportation upgrades.

The Reserve has continued to support the implementation of the master plan. The CTP partnered with Tijuana's Urban Planning Institute and Fundacion Esperanza de Mexico, A.C. to obtain a grant from the Mexican Federal Agency for Social Development, to construct and install pervious paving on a road, El Descanso. In the spring of 2006, 180 Los Laureles residents (mostly women) were trained to make pervious pavers, a mixture of water, gravel, and cement that is poured into hexagonal wooden frames. The pervious pavers let rainwater drain through the soil, helping reduce flooding hazards and allowing underground aquifers to recharge. Engaging local residents in the process has provided them with an opportunity to improve their community and learn more about watersheds and wetlands. The CTP was able to continue this program through other grants, including \$50,000 from U.S. Environmental Protection Agency which brought together local residents and University of California San Diego students to make pervious pavers. The pervious paver projects have been highlighted in a video documentary, an episode of Dan Rather Reports, and the University of California San Diego Magazine. The CTP also developed a partnership with the School of Art and Design at the Ibero-Americana University. The CTP Coordinator coordinated the participation of faculty and students who developed proto-type designs and plans for a 6-acre municipal property that the Mayor of Tijuana made available for the development of affordable homes featuring sustainable approaches. In addition, the Reserve has continued to pursue projects and funding and recently

successfully applied for a multi-year U.S. Environmental Protection Agency grant that will allow the Reserve to continue to support improvements in watershed management.

Accomplishment: The CTP successfully facilitated the development and passage into law of a master plan for Los Laureles Canyon and has continued to support the implementation of the plan. The master plan provides for improved land use planning that reduces both the risk to human life and property and sediment flows into the Tijuana River Estuary during rain events.

CTP staff have also successfully undertaken numerous endeavors that have raised awareness of environmental and social issues and facilitated discussion of potential solutions.

- The CTP Coordinator is a regular speaker on weekly radio show “Ocean without Borders” which is heard in the Tijuana and San Diego region. The show focuses on ways to reduce human impacts on the environment, and in particular raises awareness about environmental issues in the border region. Callers may call in and have their questions answered.
- The CTP Coordinator is an adjunct professor at the University of California San Diego and has provided mentoring to 70 PhD, Masters, and undergraduate students.
- Produced five video documentaries (1) *Binational Challenges in the Tijuana River Watershed*, (2) *Coastal Decision Makers Tool Kit*, (3) *Pervious Pavers*, (4) *Watershed Protection Demonstration Projects*, and (5) *Where is the Security?* video documentaries.
- The CTP Coordinator participated in regional groups including the International Boundary and Water Commission Citizens Forum, City of Tijuana Citizens Advisory Board, U.S. delegation to the World Water Forum, SANDAG’s Committee on Binational Regional Opportunities, and as co-chair of the U.S. Environmental Protection Agency Border 2012 Water Task Force.
- Conducted approximately 30 watershed tours. For example, in September of 2007, a watershed tour in San Diego and Tijuana for a group of journalists, government officials, and members of the Surfrider Foundation focused on waste water treatment infrastructure.
- The CTP Coordinator assisted with the creation of the Border Biodiversity Committee, a cross border committee which was convened to identify recommendations to improve cross-border biodiversity for the California Biodiversity Council.

Throughout the evaluation period, the CTP has successfully focused on improving watershed conditions in Mexico. Two-thirds of the Reserve’s watershed lies within Mexico and the environmental degradation in communities such as those in Los Laureles Canyon and the resulting sedimentation have a tremendous impact on the Reserve. However, as noted in the previous evaluation it is clear that TRNERR’s program has evolved beyond the scope of the CTP as established by NOAA guidance. In addition to conducting coastal decision-maker workshops, TRNERR’s CTP remains extensively engaged in promoting watershed management practices, particularly in Mexico. Such work is extremely important, relevant, and appropriate for TRNERR; however, the CTP Coordinator and CTP Assistant are essentially staffing a watershed management program.

The previous evaluation contained a program suggestion that TRNERR should establish a distinct Watershed Coordinator position and maintain a CTP Coordinator position to focus on providing current scientific information and skill-building opportunities to coastal decision-makers. In addition, a second program suggestion called for an examination of the role of CTP north of the U.S.-Mexico border.

During the site visit, the evaluation team discussed both the importance of the Watershed Coordinator Position and having a watershed program and developing a CTP consistent with NOAA guidance. The previous evaluation and current evaluation team found that the CTP Coordinator and CTP Assistant were essentially staffing a watershed management program in addition to their CTP duties. Although the watershed management program serves a very valuable function, TRNERR should develop a CTP that meets the *Coastal Training Program Implementation Guidance* and focuses on the national mission of providing up-to-date scientific information and skill-building opportunities to coastal decision-makers. In addition, the Reserve should develop a northern component to the CTP which will provide the Reserve with new opportunities to address regional issues. For example, a CTP program that includes a focus on the San Diego region would enable the Reserve to provide local, state and federal permitting staff with information on the most effective wetland restoration techniques and best methods for addressing invasive species. Local decision-makers and permitting staff would then be able to incorporate the latest science into their decision making. In addition, the evaluation team also discussed the submittal of late and inadequate performance measurement reports in accordance with the *Draft Coastal Training Program's Performance Monitoring Manual* and the importance of submitting this information in a complete and timely manner.

Necessary Action: TRNERR must develop a CTP that is consistent with NOAA guidance and include a focus on the northern component of the Reserve within the CTP. In addition, CTP performance measurement reports must be completed and submitted by stated deadlines.

Since the evaluation, TRNERR has used funding obtained through the U.S. Environmental Protection Agency to hire a watershed coordinator position and has hired a new CTP Coordinator who is focusing on developing a CTP consistent with NOAA guidance, including a focus on training needs in the greater San Diego region. In order to better strengthen the new CTP, OCRM encourages the CTP Coordinator to actively participate at the national level with appropriate CTP workgroups.

D. STEWARDSHIP PROGRAM

Stewardship is a functional role at many reserves, involving aspects of research, monitoring, education, policy, and implementation of resource management actions. Stewardship provides long-term protection of natural resources within the system and serves to model responsible resource management practices to coastal communities.

The goals of the Reserve's stewardship program, as described in the 2000 Management Plan, are to:

- Preserve, restore, enhance and protect habitats to maintain biodiversity, maintain important migratory bird resources, and aid in the recovery of threatened and endangered species (Refuge goal)
- Respond to identified problems, particularly those in the southern end of the Reserve, by establishing cooperative and integrated programs and approaches.
- Monitor and assess land use activities within the watershed, particularly the neighboring Tijuana River Valley, and attempt to influence practices to promote the health of the Reserve.
- Complete acquisition of all parcels within the adopted Reserve boundary.

The Reserve also has goals specific to public access, involvement and use.

- Encourage public involvement in Reserve governance and management.
- Provide opportunities for volunteer-activities in education, research assistance, recreational, and cultural programs at the Reserve.
- Encourage and improve public access and use opportunities of the Reserve to the extent compatible with resource protection, with emphasis in the southern areas.
- Emphasize and expand priority, wildlife-dependent recreational activities with wildlife observation and photography (Refuge goal).

The Reserve's stewardship program is staffed by a Stewardship Coordinator and a part-time Environmental Scientist and part-time Environmental Services Intern. Two part-time Environmental Services Intern positions were vacant at the time of the site visit. In addition, the USFWS Resource Ranger and Biologist provide extensive support to the stewardship program. During the review period, the stewardship program continued to address invasive species control and restoring impacted areas of the Reserve, worked closely with the Border Patrol to minimize impacts from the border fence construction and patrol activities, obtained permits and funding to remove sediment from sediment basins, pursued a study of region-wide significance to determine if sediment from the sediment basins could be used to nourish local eroding beaches, and worked through the trail committee to designate an official trail system and common nomenclature for use by the U.S. Border Patrol, local law enforcement, recreational groups, and natural resource agencies.

1. Restoration and Invasive Species

Invasive species management remains one of the most serious challenges facing TRNERR's stewardship program and invasive species are an acute threat to the ecosystem's integrity. Invasive species of particular concern are the exotic succulent sea fig (*Carponbrotus edulis*), several species of tamarisk (*Tamarix* sp.), giant cane (*Arundo donax*) and exotic grasses and annuals. In 2002, SWIA initiated the Tijuana River Valley Invasive Plant Control Program which targeted the giant reed, castor bean, and salt cedar (*Tamarix ramosissima*). This program continued during the evaluation period and SWIA worked with the Reserve and USFWS and

obtained over \$700,000 in additional funding to treat 590 acres, inspect and retreat 874 acres, and to restore over nine acres by planting native plants. During the evaluation period, a technical advisory group helped finalize a comprehensive adaptation plan that included control methods and an update of the plan. Through the technical advisory group, SWIA and the stewardship program have been able to influence some surrounding land owners who are now undertaking activities or partnering with SWIA to address invasive species on their land. In the next few years, the Reserve is looking to focus on management of exotic weeds and to develop a reserve-wide weed management plan.

The stewardship program actively restores and maintains lands within the Reserve. The stewardship staff work closely with the volunteer program and volunteers assist with weekly restoration activities. The Reserve also has a greenhouse area in which native plants are grown and stored. The Reserve has received funding to upgrade this area and will be increasing its capacity to raise native plants for restoration activities.

Accomplishment: The stewardship program has successfully restored areas of the Reserve through (1) securing funding, (2) developing and updating an invasive species management plan, (3) controlling invasive species, and (4) conducting regular restoration activities with the assistance of volunteers.

The Reserve's wetlands are impacted by land use activities throughout the watershed and in particular, Los Laureles Canyon, where acceleration of sedimentation and trash have resulted in the obstruction of tidal channels and loss of wetlands. During the previous evaluation period, two large sediment retention basins and a processing pad for reclaimed sediment were built to handle a 100-year flood event. Due to the amount of erosion that occurs during rain events, the sediment basins have had to be emptied annually. The Stewardship Coordinator has successfully obtained the necessary permits and acquired the necessary funding to remove this sediment on an annual basis. OCRM encourages the Reserve to find a consistent source of funding to facilitate the removal of sediment on an annual basis.

The Tijuana Estuary Sediment Fate and Transport Study will enable the Reserve and other partners to determine if local sediments can be added to the beach without harming nearshore resources. The study is being funded by the California Ocean Protection Council and the State Coastal Conservancy and both the stewardship and research program are supporting the permitting and implementation of the study. Currently, the U.S. Environmental Protection Agency requires that sediment must be at least 80 percent coarse material unless additional information exists to show that additional amounts of fine material won't result in environmental degradation. The sediment from the local hillsides is around 50 percent sand. The study involves the deposition of 60,000 cubic yards of sediment from the Reserve's sediment basins on the beach south of the Tijuana River mouth and the resultant physical processes and the biological impacts are being tracked and analyzed. Results of this study will facilitate the review of the current federal and state policy. If the study demonstrates that additional fine material does not have a negative impact on the nearshore environment, the cost of the Reserve's wetland restoration project TETRP II, annual removal of sediment from the sediment basins, and regional beach renourishment projects will be greatly reduced. This study has region-wide significance

and may allow for more cost effective beneficial beach renourishment projects and wetland restoration along the southern California coast.

During the evaluation period, stewardship staff have worked closely with the U.S. Border Patrol to minimize impacts from the construction of the border fence and enforcement activities. Since the 1990s, the U.S. Border Patrol has greatly increased the use of four-wheel drive vehicles and improved secondary roads and informal trails within the Reserve. With the completion of the Border Infrastructure System, the U.S. Border Patrol anticipates decreasing patrols within the Reserve. The stewardship program is working with the U.S. Border Patrol to identify restoration opportunities where the U.S. Border Patrol could decrease the footprint imposed by patrol roads. The Stewardship Coordinator also attends monthly U.S. Border Patrol muster meetings to provide officers with information on how to minimize impacts on natural resources and endangered species. In addition, stewardship and volunteer staff coordinated with the U.S. Border Patrol during the construction of the Border Infrastructure System to salvage native plants for use in future restoration activities and fossils.

TRNERR faces many land management challenges and in the future, the program will need to address additional new and emerging issues such as climate change. OCRM encourages the Stewardship Program to consider the benefits of developing a formal or informal advisory committee to brainstorm ideas, identify needs and opportunities, prioritize projects and effort, conduct strategic planning, and/or coordinate projects. The advisory committee could be used to help prioritize management activities, develop specific land management plans, identify new issues to be addressed, and/or to increase coordination of resources.

B. Public access

The Reserve is located in a densely populated urban area and provides a unique opportunity for local residents to enjoy the estuary. The Reserve encourages compatible recreational activities including fishing, wildlife observation, photography, environmental education and interpretation, and non-wildlife oriented recreation such as hiking, horseback riding, and beach use wherever they are compatible with the mission and goals of the Reserve and Refuge. The majority of public use is concentrated at the northern end of the Reserve.

Reserve trails have traditionally been used by the horseback riding community and this area is the only beach, south of San Luis Obispo, open to horseback riding. The Reserve and USFWS balance public access with the protection of endangered species and sometimes temporary closures of trails are necessary. In the past, management actions have led the horseback riding community to be concerned with losing access to the Reserve. During the evaluation period, the relationship between the horseback riding community and the Reserve has been strengthened and communication has increased. The Reserve has a standing Trails Committee (Public Access, Use, and Involvement Committee) that is responsible for recreation programs, law enforcement, signage and publications, and public affairs. The committee includes members of Reserve user groups including the horseback riding community and the U.S. Border Patrol and U.S. Navy to address security concerns. When a closure is set in place a meeting of the Trail Committee is called to discuss the closure. During the evaluation period, the committee also identified, agreed

upon, and named all official trails within the Reserve and a map of the official trails is being developed. OCRM commends the Reserve for improving relations and communication with user groups during the evaluation period.

During the evaluation, other opportunities for improving public access to the Reserve were identified including:

- A trail along U.S. Navy land to connect the northern and southern portions of the Reserve.
- Working with the U.S. Border Patrol to minimize negative impacts to trails and the trail-use experience.
- Exploring linkages to existing trails systems, including the Tijuana River Valley Regional Park, Bayshore Bikeway, and California Coastal Trail.
- Renovate Monument Mesa (part of which is known as “Friendship Park”) and develop new exhibits to tell the history of the area and provide cultural interpretation.
- Work with the U.S. Border Patrol to minimize their impact on Monument Mesa facilities and resources and to provide access to the historical monument commemorating the friendship between the U.S. and Mexico.
- Work with permitting agencies and obtain funding to elevate the access road to Monument Mesa which is often flooded for over half the year.

Program Suggestion: OCRM encourages the Reserve to pursue identified opportunities for improving educational opportunities for visitors and compatible public access, in particular for Monument Mesa.

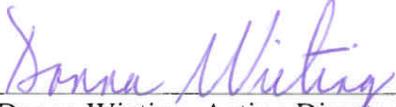
V. CONCLUSIONS

For the reasons stated herein, I find that the State of California is adhering to the programmatic requirements of the National Estuarine Research Reserve System in the operation of its approved Tijuana River National Estuarine Research Reserve.

TRNERR has made notable progress in the following areas: infrastructure development including the development of a new multi-purpose building that enables the Reserve to hold large events and trainings; creation of a formal volunteer program; obtaining additional funding to maintain the momentum of the volunteers, stewardship, and watershed programs; working with partners to address threats to the estuary; working with regional partners to expand the influence of the Reserve's research and education programs; invasive species management; and working with partners to address erosion and sedimentation in Los Laureles Canyon.

The findings contain five recommendations in the form of two Necessary Actions and three Program Suggestions. The state must address the necessary actions regarding the submittal of the management plan and the development of a Coastal Training Program that meets NOAA guidance. The Program Suggestions should be addressed before the next regularly scheduled program evaluation, but they are not mandatory at this time. Summary tables of program accomplishments and recommendations are provided in Appendix A.

This is a programmatic evaluation of TRNERR that may have implications regarding the state's financial assistance awards. However, it does not make any judgment on or replace any financial audits.



Donna Wieting, Acting Director
Office of Ocean and Coastal Resource Management

AUG 31 2010

Date

VI. APPENDICES

APPENDIX A. SUMMARY OF ACCOMPLISHMENTS AND RECOMMENDATIONS

ACCOMPLISHMENTS

ISSUE AREA	ACCOMPLISHMENT
Collaboration	Reserve staff work seamlessly with USFWS across Reserve and Refuge operations including education, stewardship, and research and monitoring.
Collaboration	TRNERR staff collaborate with a broad and complex array of partners across all sectors to address threats to, and protect, the Tijuana River Estuary.
Infrastructure	TRNERR has successfully identified and completed numerous infrastructure improvements that have enabled the Reserve to more effectively meet its program goals.
Collaboration	TRNERR staff have worked collaboratively with federal, state, and local partners to minimize impacts to the Reserve from the construction of the border fence and patrol activities where possible.
Research Program	OCRM commends TRNERR for conducting research that provides relevant information to the coastal resource management community in California and Mexico.
System-wide Monitoring Program	TRNERR's monitoring program is well integrated with regional efforts and NERRS SWMP water quality monitoring protocols have been adopted by regional partners.
Education Program	The education program's strong partnerships have resulted in more students participating in Reserve classes and the Reserve's estuarine training being incorporated into South Bay Union School District's curriculum.
Volunteer Program	TRNERR has successfully developed a well-run volunteer program that supports the Reserve's mission and education, stewardship, and research goals.
Funding	The Reserve successfully obtained funds to maintain the momentum of critically important programs that further outreach, education and restoration: the watershed, stewardship, and volunteer programs.
Watershed Management/Coastal Training Program	The CTP successfully facilitated the development and passage into law of a master plan for Los Laureles Canyon and has continued to support the implementation of the plan. The master plan provides for improved land use planning that reduces both the risk to human life and property and sediment flows into the Tijuana River Estuary during rain events.
Stewardship	The stewardship program has successfully restored areas of the Reserve through (1) securing funding; (2) developing and updating an invasive species management plan; (3) controlling invasive species; and (4) conducting regular restoration activities with the assistance of volunteers.

RECOMMENDATIONS

Recommendations are in the form of Necessary Actions (NA) or Program Suggestions (PS).

Management Plan	NA: TRNERR must submit a revised management plan to the Estuarine Reserves Division by November 30, 2010.
Coastal Training, Volunteer, and Education Programs	PS: OCRM encourages the CTP, education, and volunteer programs to consider pursuing opportunities to expand educational opportunities for volunteers.
Coastal Training Program	PS: OCRM encourages TRNERR's research program to work with the Coastal Training Program to assess and pursue opportunities to communicate research results to coastal natural resource managers.
Coastal Training Program	NA: TRNERR must develop a CTP that is consistent with NOAA guidance and include a focus on the northern component of the Reserve within the CTP. In addition, CTP performance measurement reports must be completed and submitted by stated deadlines
Public Access and Visitor Facilities	PS: OCRM encourages the Reserve to pursue identified opportunities for improving educational opportunities for visitors and compatible public access, in particular for Monument Mesa.

APPENDIX B. PERSONS AND INSTITUTIONS CONTACTED

Reserve Staff

NAME	Title
Clayton Phillips	Manager
Jeff Crooks	Research Coordinator
Anne Marie Tipton	Education Coordinator
Sarah Emerson	Community Outreach Coordinator
Oscar Romo	Coastal Training Program Coordinator
Chris Peregrin	Stewardship Coordinator
Lorena Warner-Lara	Environmental Services Intern
Marya Ahmad	Environmental Services Intern
Tracey Ekker	Office Technician
Phil Rouillard	Environmental Services Intern
Michelle Cordrey	Research Associate
Holly Bellringer	Research Associate
Dave Schmoyer	Reserve Maintenance
Kelly Uyeda	Graduate Research Fellow

Federal Partners

NAME	Agency	Title
Don Brubaker	USFWS Tijuana Slough NWR	Manager
Debby Good	USFWS, Tijuana Slough NWR	Resource Ranger
Brian Collins	USFWS, Tijuana Slough NWR	Biologist
Chantel Jimenez	USFWS, Tijuana Slough NWR	Interpreter
Slader Buck	USFWS	
Pat Gowan	USFWS, Carlsbad Office	
Rodney Scott	U.S. Border Patrol	
Mark Weidman	U.S. Border Patrol	
M. Corley	U.S. Border Patrol	
Billy Stewart	USDA (enforcement)	
Bruce Shaffer	U.S. Navy (trails)	Community Planner and Liaison
Tiffany Sheppard	U.S. Navy	

State Partners

NAME	Agency
Ronie Clark	District Superintendent, San Diego Coast District
Tony Perez	Southern Field Division Chief and Acting Deputy Director of Park Operations, California State Parks
Lisa Ortega	California State Parks, Accounting Office
Ellen Hue	California State Parks, Accounting Office
Therese Muranaka	California State Parks, Archeology
Sherry Thompson	California State Parks, Budget Office

Marilyn Evan-Jones	California State Parks, Budget
Jon Irwin	California State Parks
Greg Abbot	California State Parks
Ellen Lirely	California Coastal Commission
Karen Bane	State Coastal Conservancy

Nonprofit Partners

NAME	Organization
Mike McCoy	SWIA, Vice-president
Debi Carey	SWIA, Administrative Director
Mayda Winter	SWIA, Project Manager
Janet Fairbanks	SWIA Board Member
Bill Marken	SWIA Board Member
Bob Miller	SWIA Board Member
Anne Rast	SWIA Board Member
Marjorie Stinson	Friends of San Diego Wildlife Refuges
Dick Pilgrim	Friends of San Diego Wildlife Refuges
Mary Ann Saponara	Friends of San Diego Wildlife Refuges
Susan Fuller	Friends of San Diego Wildlife Refuges
George Dowden	Friends of San Diego Wildlife Refuges

Other

NAME	Organization
John Boland	Consultant, Invasive Species Project
Carl Nettleton	Consultant, supporting TRVRT
John Gabaldon	Tijuana River Valley Equestrian Association
Charlie Evans	San Diego County Sheriff
Sean Flynn	San Diego County Parks Department
Larry Duke	San Diego County Parks Department
Steve Smullen	International Boundary and Water Commission (TRVT Policy Board)
Tony Heinrichs	City of San Diego (TRVT Policy Board)
Todd Snyder	County of San Diego (TRVT Policy Board)
Sigfrido Pineda	Binational Affairs, Tijuana Mexico
Marcos Sarabia	Secretary of Urban Development, Tijuana Mexico
Luis Renteria	Chief of Urban Development, Tijuana Mexico
Ignacio Cortez	Under Director of Public Services, Tijuana Mexico
Brian Hentschel	San Diego State University, Professor
Corey Burgess	Kearny High School, Teacher
Dan Tomlinson	Teacher

POLITICAL REPRESENTATIVES

NAME	AFFILIATION
Ricardo Flores	U.S. Representative Susan Davis
Rachel Gregg	CA Assemblywoman Mary Salas
Jonathan Hardy	CA Senator Denise Ducheny
Alton Garrett	U.S. Senator Barbara Boxer
Caridad Sandez	U.S. Senator Barbara Boxer
Patricia McCoy	City of Imperial Beach, Council Member
Gary Brown	City of Imperial Beach, City Manager
Jim Janney	Mayor of Imperial Beach

VOLUNTEERS

NAME
Bill Radatz
Martha Radatz
Francis Otero
Scott Penwell
Barbara Land

APPENDIX C: PERSONS ATTENDING THE PUBLIC MEETING

NAME	AFFILIATION
Joan Brooks	TRNERR Volunteer
Joe Ellis	Public
Sherry Ashbaugh	TRNERR Volunteer
Dex	TRNERR Volunteer
Jim Peugh	San Diego Audubon Society
Margie Stinson	Friends of San Diego Wildlife Refuge
Jan Novak	Tijuana River Citizens' Council
Jim Payne	Audubon Society

Additional citizens also attended the public meeting whose names were not captured.

APPENDIX D: OCRM'S RESPONSE TO WRITTEN COMMENTS

NOAA received one comment regarding the evaluation of the Tijuana River NERR, California.

Dex

Imperial Beach Resident

Dex stated that as a new resident to Imperial Beach she had no knowledge of TRNERR. She stated that both the visitor center and staff articulate the estuary experience well. She noted that the intrinsic value of the estuary is obvious but it is a challenge to convey this to the public and receive a commitment of stewardship. The Reserve has done an excellent job of working with the public and engendering active support. She also noted that the Reserve is a collaboration between numerous agencies and, unlike in many cases where too many bureaucracies get in the way, the relationships enhance the offerings to the public including education, stewardship activities, and connecting with nature. She stated she was pleased to see her tax dollars support this valuable resource.

OCRM Response: OCRM recognizes the value of the Tijuana River Estuary and the accomplishments of the TRNERR staff in managing the Reserve, in particular the creation of a new volunteer program

APPENDIX E: TRNERR'S RESPONSE TO 2005 EVALUATION FINDINGS

(Responses were provided in July of 2010)

OPERATIONS AND MANAGEMENT

Program Suggestion: OCRM encourages TRNERR and the RMA to work together to refocus the RMA on its stated objectives, particularly on providing a forum for discussing complex issues. The reserve and the RMA should strongly consider shifting the emphasis of the RMA's quarterly meetings from agency reporting to problem solving around specific reserve issues.

TRNERR Response: While there is still agency-reporting, the agendas for the quarterly meetings have been dominated by issue-driven topics. In addition, and as a result, there has been an increase in public attendance and participation.

Necessary Action: TRNERR must finalize its revised management plan within one year of receipt of final evaluation findings. The status of the management plan revision must be described in TRNERR's semi-annual performance reports.

TRNERR Response: There were lengthy delays in document reviews by both the Reserve and by NOAA. Simply, there were often more urgent matters that demanded attention (such as the Border Infrastructure project and the condemnation of Reserve property). In addition, the Reserve was assigned 4 NOAA liaisons between 2004 and 2008. Significant progress took place during early 2010 such that the document has been reviewed by NOAA legal staff and is on track to be finalized before the 2010 Evaluation Finding are finalized.

Program Suggestion: OCRM recommends that all TRNERR staff participate in clearly defining current and future space requirements and how they might be met. In particular, the reserve should strongly consider: (1) expanding its laboratory; (2) adding a secure storage area; (3) adding a plant propagation area; and (4) improving site surveillance. During this exercise, staff should consider which, if any, space needs could be met offsite through partnerships.

TRNERR Response: The Reserve has enhanced its dry lab, constructed a large storage building, has started a nursery area (and will complete it by 2011), and we'd added surveillance cameras.

RESEARCH AND MONITORING

Program Suggestion: OCRM strongly encourages the Research and Monitoring Program to reactivate and revitalize its RAC as soon as practicable.

TRNERR Response: The RAC has been activated, the stimulus being discussions focusing on the Fate and Transport project. In the near future, research discussions will focus on the work of the Tijuana River Valley Recovery Team.

EDUCATION AND OUTREACH

Program Suggestion: OCRM encourages TRNERR to continue raising its visibility throughout the San Diego region through signage, participation in public events and a variety of media.

TRNERR Response: After two hard years, the Reserve was successful in installing two large signs on Interstate 5. This resulted in an over 20% increase in general visitation. The education staff continues to “table” special events throughout the county. The 2008 Fiesta del Rio attracted over 5,000 visitors. As the evaluators previously discussed, the Volunteer Program is growing exponentially as people share their positive experiences with friends.

Program Suggestion: OCRM strongly encourages TRNERR to add a Volunteer Coordinator position to its staff and to formalize its Volunteer Program. The reserve should collaborate with USFWS to explore a jointly-funded position that would benefit both the reserve and the refuge. If such an arrangement is impossible, OCRM urges TRNERR to work with its partners to explore other options.

TRNERR Response: The Reserve obtained various funding to hire and retain a Volunteer Coordinator since 2007. The current Volunteer Coordinator is funded through June 2012. With the success of the program, we will continue to secure funding for beyond that date.

COASTAL TRAINING PROGRAM

Program Suggestion: TRNERR should establish a distinct Watershed Coordinator position with responsibility for the reserve’s watershed management and land-use programs. The CTP Coordinator position should focus on providing current scientific information and skill-building opportunities to coastal decision-makers.

TRNERR Response: The former CTP Coordinator has been hired as the new Watershed Coordinator. A new CTP Coordinator has been hired and has been conducting workshops for coastal decision-makers.

Program Suggestion: The Education and Outreach Program should engage its partners in an examination of the role of CTP north of the U.S.-Mexico border. Such an examination should consider: (1) the goals of a CTP northern component; (2) potential projects where CTP could add value; (3) the relationship of a CTP northern component to projects currently underway in Mexico; and (4) the feasibility of a CTP that addresses issues in both the United States and Mexico.

TRNERR Response: The new CTP Coordinator is working closely with all Reserve sectors, regional partners and ERD to prepare a market analysis to determine appropriate outreach topics for future workshops and related efforts. Within her first year, she has already orchestrated 2 highly successful workshops on climate change.

STEWARDSHIP

Program Suggestion: OCRM encourages the Stewardship Program, in conjunction with its contributions to the invasive species management plan, to consider methods of further improving early detection and removal of invasive species at the reserve.

TRNERR Response: The Stewardship Program has expanded it's beyond the "big three" (Arundo, Tamarisk and Castor Bean) to also include invasive species such as Saharan mustard. The reserve's ability to address invasive species has dramatically expanded with the additional staff funded through the USEPA grant and well as the licensure of the Stewardship Assistant as a certified sprayer.