

# Final Evaluation Findings

## Tijuana River National Estuarine Research Reserve

April 2009 to July 2016

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## Executive Summary

The Coastal Zone Management Act requires the National Oceanic and Atmospheric Administration's Office for Coastal Management to conduct periodic evaluations of the performance of national estuarine research reserves. This evaluation examined the operation and management of the Tijuana River National Estuarine Research Reserve for the period from April 2009 through July 2016. The evaluation focused on three target areas: reserve administration, coastal resilience, and cross-border issues.

The findings in this evaluation document will be considered by the NOAA Office for Coastal Management in making future financial award decisions concerning the coastal program. The evaluation came to these conclusions:

**Accomplishment:** Tijuana River National Estuarine Research Reserve and the Southwest Wetlands Interpretive Association have continued to advance their co-management relationship and responsibilities to the benefit of all of the reserve's sectors.

**Accomplishment:** Tijuana River National Estuarine Research Reserve has been the recipient of many research and management grants that have greatly leveraged the operations funding provided by NOAA and California State Parks and amplified the impacts of the reserve in the surrounding community.

**Accomplishment:** Tijuana River National Estuarine Research Reserve has become an essential player in providing action-oriented climate change vulnerability and resilience information to the communities and residents of Southern California.

**Accomplishment:** Tijuana River National Estuarine Research Reserve has developed a very integrated approach to science-based resource management, and reserve science contributes crucial action-oriented information for the U.S. Fish and Wildlife Service and other members of the management partnership for the Tijuana River Estuary.

**Accomplishment:** Tijuana River National Estuarine Research Reserve has used key partnerships to share information and resource management expertise with partners on site, in the local community, across Southern California, and in Alaska.

**Accomplishment:** Tijuana River National Estuarine Research Reserve, working with nongovernmental organizations in Mexico and the NOAA Marine Debris Program, have developed trash reduction initiatives and instituted water quality improvements in the Tijuana River Watershed.

**Necessary Action:** Tijuana River National Estuarine Research Reserve must work with the NOAA Office for Coastal Management to develop within 90 days of the receipt of the final evaluation report an agreed-upon timeline for the completion of the management plan.

**Recommendation:** Tijuana River National Estuarine Research Reserve and the Southwest Wetlands Interpretive Association should consider formalizing processes related to personnel and employee benefits to ensure transparency and clarify expectations across the two management entities. Regular check-in meetings should be held between the two organizations and a method (e.g., Google spreadsheets or other tools) should be created for everyone involved in reserve administration to understand the status of the budget.

**Recommendation:** California State Parks should consider continuing the management of the Tijuana Estuary as a unit separate from other state park properties that are not included within the reserve boundary. In addition, California State Parks may want to find ways to be more involved in and supportive of external grant activities, and potentially to receive external grants, to reduce impact on the Southwest Wetlands Interpretive Association.

**Recommendation:** California State Parks and the Southwest Wetlands Interpretive Association should ensure that there are adequate dedicated personnel resources to oversee the on-the-ground stewardship responsibilities of the reserve and ensure adequate protection and management of the natural resources of the reserve.

**Recommendation:** Tijuana River National Estuarine Research Reserve should continue to capitalize on opportunities to engage partners such as the California Coastal Commission and the State Coastal Conservancy to provide science and resilience planning assistance that can be used for both on-the-ground projects (e.g., the Tijuana Estuary Tidal Restoration Program) and policy improvements throughout the State of California, the West Coast, and the National Estuarine Research Reserve System.

**Recommendation:** Tijuana River National Estuarine Research Reserve, working with partners in Mexico, should consider binational scenario planning and the development of a shared binational vision based on localized benefits.

**Recommendation:** California State Parks should ensure that any funds recovered from the Department of Homeland Security would be devoted to the reserve to restore natural resources and replace public access lost as part of the land seizure of 53 acres in 2008.

**Recommendation:** Tijuana River National Estuarine Research Reserve should continue to communicate problems and provide training on natural resource protection for U.S. Border Patrol agents.

**Recommendation:** The State of California, through its membership on the Binational Core Group and associated Binational Working Groups established under Minute 320, should work to identify appropriate projects to be addressed by the International Boundary and Water Commission.

## Program Review Procedures

The NOAA Office for Coastal Management evaluated the Tijuana River National Estuarine Research Reserve in fiscal year 2016. The evaluation team consisted of Ralph Cantral, evaluation team lead, Michael Migliori, site liaison, and Rebecca Lunde, West Coast regional coordinator, all from the NOAA Office for Coastal Management; and Keith Laakkonen, manager of the Rookery Bay National Estuarine Research Reserve in Naples, Florida. The support of the Tijuana River Reserve staff was crucial in conducting the evaluation, and this support is most gratefully acknowledged.

NOAA sent a notification of the scheduled evaluation to Lisa L. Mangat, director, California State Parks, on March 21, 2016, and published a notice of “Intent to Evaluate” in the *Federal Register* on March 31, 2016. NOAA also notified members of California’s congressional delegation.

The evaluation process included a review of relevant documents and a survey of stakeholders, which helped identify three target areas for the evaluation: reserve administration, coastal resilience, and cross-border issues. A site visit was conducted and the evaluation team held meetings with staff members and group discussions with stakeholders and program staff members about the target areas. In addition, a public meeting was held on Tuesday, July 19, 2016, at 6:00 p.m. at the reserve, 301 Caspian Way, Imperial Beach, California 91932 to provide an opportunity for members of the public to express their opinions about the implementation of the reserve’s programs.

Stakeholders and members of the public were given the opportunity to provide written comments via email or U.S. mail through Friday, July 29, 2016. No written comments were received from the public or interested parties. The Office for Coastal Management then developed draft evaluation findings, which were provided to the reserve for review, and the reserve’s comments were considered in drafting the final evaluation findings.

Final evaluation findings for the national estuarine research reserves highlight each reserve’s accomplishments in the target areas and include recommendations, which are of two types:

**Necessary Actions** address programmatic requirements of the implementing regulations of the Coastal Zone Management Act. These must be carried out by the dates specified. Failure to address necessary actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in the Coastal Zone Management Act §312(c).

**Recommendations** are actions that the office believes would improve the program, but which are not mandatory. The state is expected to have considered the recommendations by the time of the next evaluation or by the dates specified.

## Evaluation Findings

### Reserve Administration

#### *Examples of Key Efforts*

The Tijuana River Reserve has an administrative structure that benefits from the strengths of two organizations, California State Parks and the Southwest Wetlands Interpretive Association. This structure has been in place since 2001, and although this approach may appear to be unnecessarily complex, in practice the two organizations working together has created a synergy that enables better results for the reserve and its partners.

An example of this synergy can be seen in the water quality monitoring that the Southwest Wetlands Interpretive Association supports in other parts of San Diego County. This monitoring is conducted using non-NOAA funding and provides for references and comparison sites for the core System-Wide Monitoring Program stations within the reserve. This partnership creates a more comprehensive understanding of the intermittently open and closed river mouth systems of Southern California, which is just one of many examples.

California State Parks has partnered broadly with the Southwest Wetlands Interpretive Association for the management of the Tijuana River Reserve since the reserve's designation in 1982. The reserve manager attends the association's board meetings regularly but does not hold a voting seat. This partnership has been outlined in the reserve's *Comprehensive Management Plan* (2010) and in a memorandum of agreement between state parks and the association. The most recent agreement is dated 2011 and includes a suggested five-year review cycle. The memorandum of agreement allows the Southwest Wetlands Interpretive Association to receive federal funding through the Coastal Zone Management Act directly from NOAA to support management of the reserve's research program. The association has received this funding directly from NOAA annually since 2001.

Although the results of the partnership between California State Parks and the Southwest Wetlands Interpretive Association are very positive, there remain challenges managing across the two organizations in providing oversight for various activities and programs, as well as communicating through two organizational structures. There are also challenges for the employees, since team members work together across several grants and programs yet have different employers and employee benefits. It was noted during this review that California State Parks and the association do a good job providing opportunities for professional growth and providing for pay parity and benefits within the constraints of the organizations. Nevertheless, arrangements that are more formal would ensure that these practices continue into the future.

Similarly, administrative budgeting functions of the reserve are complicated by the split management arrangement. The administrative staff members of each of the management

entities seem to work well together, but meeting more regularly as a group would provide opportunities to make processes operate more efficiently.

NOAA has introduced pilot efforts to examine whether to institute a multi-year award period for reserve operations. There is the potential that a multi-year operations format would provide opportunities for efficiencies while also creating new challenges for executing the NOAA-funded awards over more than one year. The suggested enhanced coordination between the managing entities would most likely be needed to successfully implement a multi-year award.

During this evaluation, difficulties were discussed concerning the reserve's ability to distribute funds for overhead charges to the Southwest Wetlands Interpretive Association under grant extensions. A possible solution to this problem could be to better align the various grants with the federal cooperative agreement cycle and seek to complete operations awards within the original award period (i.e., without the need for no-cost extensions). Increased coordination among the management partners may also assist with this.

The reserve management conducts annual discussions with reserve staff members and partners to check-in on the administrative and programmatic development of the reserve. These collaborative discussions have proven to be essential in the development of the annual operations award tasks and budget. Reserve management should be commended for ensuring that these periodic discussions and planning meetings include California State Parks and Southwest Wetlands Interpretive Association staff members, as well as partners. Meetings such as these are crucial to balancing program needs and addressing any administrative challenges that arise throughout the year.

Since the last evaluation, the chain of command within California State Parks has changed. The San Diego Coast District has been organized into three sectors geographically delineated by north, central, and southern regions of the county. The Tijuana Estuary has now been removed from the southern sector and delineated as a distinct stand-alone sector. This has relieved the reserve manager from some external state parks management responsibilities, including oversight of operations at Silver Strand State Beach, a heavily used beach park roughly five miles to the north. Although this redefinition of responsibilities has been incorporated into the management culture of the San Diego Coast District, it has not been formally recognized by the California State Park system. There is, therefore, some uncertainty as to the retention of this structure. Despite these transitions, the reserve has maintained a solid administrative footing within California State Parks, as witnessed by its active participation in the Parks Forward Initiative.

Since 2013, California State Parks has undertaken a review of its mission and programs. This effort, known as the Parks Forward Initiative, has made a series of recommendations regarding natural resource management that are pertinent to this evaluation. The recommendations include 1) partnering with allied groups to "collectively manage natural resources and support a network of protected lands managed for resiliency and connectivity;" 2) addressing climate change adaptation in resource management; and 3) further developing science-based natural



resource management efforts. The approach to science-based management very much parallels the programs of the reserve: inventorying and monitoring resources, developing appropriate management-focused research, and working with other stakeholders to improve and integrate the knowledge gained.<sup>1</sup>

The reserve has not completed an update of its Management Plan adopted in September 2010. NOAA regulations<sup>2</sup> require an updated Management Plan once every five years.

The grant administration processes at the reserve are often quite complex due to the split management system employed at the reserve. Much of the external funding that comes to the reserve comes through the Southwest Wetlands Interpretive Association because of the difficulty (or perceived difficulty) of handling grants through California State Parks. If California State Parks could expand its ability to administer grants that are in line with its mission, the reserve would benefit from those increased abilities.

Much of the work related to science-based resource management at the reserve has been a joint effort by the research and stewardship coordinators. Stewardship coordinators are not considered a core position of the National Estuarine Research Reserve System, and are not required by system regulations or NOAA policy. Because reserves are responsible for ensuring the protection and management of their critical resources, however, most of the other 27 reserves employ a full-time stewardship coordinator to reduce the burden on the reserve manager. In the case of Tijuana River Reserve, which has a large number of landowners and managers, the stewardship coordinator position is crucial. It is currently a seasonal position, and at the time of the site visit, this position had recently been vacated.

The resources of the Tijuana River Reserve are highly influenced by its location on the international border with Mexico. Because of this, oversight and implementation of reserve operations are heavily focused on the impacts of transboundary events and activities. For example, a sediment basin facility (Goat Canyon Sediment Basin) was constructed within the reserve in 2005 to minimize the effects of excessive sedimentation and trash flows from highly disturbed slopes upstream in Mexico. The basin must be cleaned annually at an average annual cost of nearly \$1.8 million dollars. These cross-border influences require significant attention and at times can detract from the overall programmatic attention of the reserve manager. This challenge has been amplified by the vacancy of a full-time stewardship coordinator for the reserve.

### *Findings for Reserve Administration*

**Accomplishment:** Tijuana River National Estuarine Research Reserve and the Southwest Wetlands Interpretive Association have continued to advance their co-management relationship and responsibilities to the benefit of all of the reserve's sectors.

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<sup>1</sup> *A New Vision for California State Parks: Recommendations of the Parks Forward Initiative*, February 2015.

<sup>2</sup> 15 CFR 921.33(c)

**Accomplishment:** Tijuana River National Estuarine Research Reserve has been the recipient of many research and management grants that have greatly leveraged the operations funding provided by NOAA and California State Parks and amplified the impacts of the reserve in the surrounding community.

**Necessary Action:** Tijuana River National Estuarine Research Reserve must work with the NOAA Office for Coastal Management to develop within 90 days of the receipt of the final evaluation report an agreed-upon timeline for the completion of the management plan.

**Recommendation:** Tijuana River National Estuarine Research Reserve and the Southwest Wetlands Interpretive Association should consider formalizing processes related to personnel and employee benefits to ensure transparency and clarify expectations across the two management entities. Regular check-in meetings should be held between the two organizations and a method (e.g., Google spreadsheets or other tools) should be created for everyone involved in reserve administration to understand the status of the budget.

**Recommendation:** California State Parks should consider continuing the management of the Tijuana Estuary as a unit separate from other state park properties that are not included within the reserve boundary. In addition, California State Parks may want to find ways to be more involved in and supportive of external grant activities, and potentially to receive external grants, to reduce impact on the Southwest Wetlands Interpretive Association.

**Recommendation:** California State Parks and the Southwest Wetlands Interpretive Association should ensure that there are adequate dedicated personnel resources to oversee the on-the-ground stewardship responsibilities of the reserve and ensure adequate protection and management of the natural resources of the reserve.

## **Coastal Resilience**

### *Examples of Key Efforts*

The reserve is participating in a number of important efforts to better understand the San Diego region's vulnerability to climate change and the actual impacts of climate change on the region. The reserve is leading the effort to provide this information to key decision makers. This information on impacts and potential for adaptation will lead to the region being more resilient in the future.

The reserve's education program has been active in helping to increase resilience in the surrounding community. A game developed by the National Estuarine Research Reserve Science Collaborative, Basins of Attraction, has been used extensively, and Teachers on the Estuary gives an opportunity for project-based learning about resilience for teachers. In addition, the Climate Understanding and Resilience in the River Valley project offers an opportunity for education and community outreach as implementation plans are developed. However, an overall frustration with a lack of funding for resilience education was expressed.

Since 2010, the reserve's Coastal Training Program has taken a central role in delivering timely climate change information to community decision makers. Workshops held by the reserve from 2013 to 2016 have helped to provide information to inform the Climate Understanding and Resilience in the River Valley project. This project, funded by the NOAA Climate Program Office, is attempting to better understand local vulnerabilities to sea level rise and riverine flooding in the Tijuana River Valley and share this information throughout the region. The Coastal Training Program was also active in the Sea Level Rise Adaptation Strategy for the San Diego Bay. This strategy includes five San Diego Bay communities and the San Diego Port Authority and Airport Authority, as well as the Southern California Wetlands Recovery Project. The reserve is also a critical partner in the region's current work on the Resilient Coastline of Greater San Diego project, funded by the NOAA Regional Coastal Resilience Grant Program, described below.

Several of the vulnerability and resilience-oriented efforts of the Coastal Training Program have brought new partners to both the reserve and to the regional climate adaptation community. These partners have included the California Coastal Commission, State Coastal Conservancy, Sea Life Aquarium, Pala Band of Mission Indians, University of Southern California Sea Grant, NOAA Climate Program Office, San Diego Foundation, Climate Science Alliance–South Coast, National Science Foundation, and U.S. Geological Survey.

In 2015, the reserve partnered with the University of San Diego and a number of organizations in the region to apply for one of NOAA's Regional Coastal Resilience Grants. The project, "Connecting the Dots and Building Coastal Resilience in the San Diego Region," received a grant of nearly \$700,000. It will provide assistance to a number of communities, including preparation of assessments of the area's vulnerability to sea level rise, coastal flooding, and extreme weather events, as well as integrated resilience strategies. These data collection and planning efforts will be paired with a regional communication strategy that will expand public understanding and engagement in coastal resilience planning and actions.

A number of these vulnerability and resilience-based projects have also brought external funding to the reserve. This ability to leverage its base NOAA funds has further increased the reserve's ability to address climate change issues for both the reserve and the surrounding community. The successful leveraging of these funds has established a foundation for attracting additional external funds in the future. The reserve may want to consider using vulnerability assessment and climate adaptation training as central elements of the upcoming reserve management plan update.

In the spring of 2016, the mouth of the Tijuana River closed due to a combination of low water flows and high tides and wave activity caused by the El Niño. The reserve's water level and oxygen sensors provided near-real-time information to the managing agencies to support decision-making on whether to reopen the river mouth to avoid severe environmental consequences to reserve resources. The decision to reopen the inlet was informed not only by the system-wide monitoring data, but also by historical ecology and scenario planning work

that had been conducted previously within the reserve. Additional funding from the National Estuarine Research Reserve System Science Collaborative will support another project to document these fluctuations: “Monitoring and Managing Lagoon Mouths in Southern California.”

The reserve also has received funding from the National Estuarine Research Reserve System Science Collaborative to support the Kachemak Bay National Estuarine Research Reserve to address resilience issues. The project, “Carrying Out Climate Scenario Planning for the Kenai Peninsula, Alaska,” would apply lessons learned from work at Tijuana River Reserve through the Climate Understanding and Resilience in the River Valley initiative to develop new techniques for adapting the reserve’s approach to a very different environment. These projects show just how widely the reserve has reached out to secure partnerships and to provide expertise to partners who will benefit from it.

### *Findings for Coastal Resilience*

**Accomplishment:** Tijuana River National Estuarine Research Reserve has become an essential player in providing action-oriented climate change vulnerability and resilience information to the communities and residents of Southern California.

**Accomplishment:** Tijuana River National Estuarine Research Reserve has used key partnerships to share information and resource management expertise with partners on site, in the local community, across Southern California, and in Alaska.

**Accomplishment:** Tijuana River National Estuarine Research Reserve has developed a very integrated approach to science-based resource management, and reserve science contributes crucial action-oriented information for the U.S. Fish and Wildlife Service and other members of the management partnership for the Tijuana River Estuary.

**Recommendation:** Tijuana River National Estuarine Research Reserve should continue to capitalize on opportunities to engage partners such as the California Coastal Commission and the State Coastal Conservancy to provide science and resilience planning assistance that can be used for both on-the-ground projects (e.g., the Tijuana Estuary Tidal Restoration Program) and policy improvements throughout the State of California, the West Coast, and the National Estuarine Research Reserve System.

**Recommendation:** Tijuana River National Estuarine Research Reserve, working with partners in Mexico, should consider binational scenario planning and the development of a shared binational vision based on localized benefits.

## Cross-Border Issues

### *Examples of Key Efforts*

The reserve is located on the international border, and approximately 75 percent of the watershed of the Tijuana River is in Mexico. Unfortunately, this location results in a great deal of sedimentation and pollution from trash and sewage entering the reserve. Because of this, oversight and implementation of reserve operations is heavily focused on tasks and outcomes that address the international context.

These border influences require significant attention and at times can detract from the overall programmatic attention of the reserve manager. Many historical and current border issues are hard to plan for, including trash, sewage, and sediment, and now with the added variable of climate change, the uncertainty is compounded. This challenge has been amplified by the vacancy of a full-time stewardship coordinator for the reserve (as discussed previously under “Reserve Management”).

In 2008, the Department of Homeland Security seized roughly 53 acres of Border Field State Park within the reserve and roughly 120 acres of county parkland adjacent to the reserve to develop additional border infrastructure. This project resulted in the loss of several trail segments along the border. Re-establishment of similar access through this area is a primary interest of many trail users in the Tijuana River Valley; however, due to limited funding and the presence of sensitive resources along potential alignments, little progress has been made toward evaluating project feasibility. An initial portion of funding has been made available to the reserve to support work on improvements to Monument Mesa Road, providing the opportunity to increase public access to Monument Mesa. The reserve has an opportunity to consider climate change adaptation strategies in the development of this project.

Sensitive habitats are impacted by illegal immigrant traffic and the Department of Homeland Security’s response to control this issue. Impacts include expanding border infrastructure, facility maintenance, and a network of gravel and dirt roads bisecting sensitive habitats. Continued disturbance from foot traffic and all-terrain vehicles fragment habitat and are an obstacle to the success of self-sustaining restoration sites. Reserve staff members communicate on-the-ground concerns (e.g., unauthorized ATV trails, broken irrigation lines) to U.S. Border Patrol supervisory staff through email, meetings, and occasional presentations at musters of field agents and watch commanders. High rates of field staff rotation at the Imperial Beach station and conflicting operational missions are contributing factors. There is a need to continue this dialogue with border patrol agents about approved public access, as trail users have occasionally been asked to leave certain areas within the reserve or adjacent parkland.

The Tijuana estuary is the terminus of a binational watershed with approximately five million residents. The rush to develop communities in the steep canyons of Tijuana directly upstream from the reserve has resulted in a dire situation on both sides of the border. Rain events wash untreated sewage, sediment, invasive weed propagules, and trash downstream into the Tijuana

estuary. Restoration and clean-up activities are limited during winter due to unsafe bacteria levels in the floodwater and disease-carrying mosquitoes breeding in tires. Both countries have invested in the construction and maintenance of wastewater treatment facilities, diverters, sedimentation basins, and wetland creation projects such as the Tijuana Estuary Tidal Restoration Project. Despite these efforts, pollution continues to enter the reserve.

The reserve has continued a long history of work with Proyecto Fronterizo de Educación Ambiental to identify ways to improve water quality and reduce debris coming across the border. A focus on reducing single-use waste has been established. The director of Proyecto Fronterizo de Educación Ambiental currently sits on the board of Southwest Wetlands Interpretive Association, which has furthered the relationship between the two groups. Nevertheless, land use pressures in the watershed on the Mexican side of the border continue to exacerbate the problems. Progress has been made, yet much more needs to be done.

The reserve has sought and received funding from the NOAA Marine Debris Program to study and reduce plastics in the waste stream coming across the border from Mexico. Additional opportunities to partner with groups to reduce the impacts of plastics pollution are being explored.

Much of the southern part of the reserve, particularly Goat Canyon, was covered with several feet of sediment in a relatively short period of time. Planning and implementing upland revegetation projects during a prolonged drought cycle has been complicated by buried debris, altered hydrology, and invasive weed infestations. Dirt roads in the southern part of the reserve are below grade due to excessive sedimentation, so water is conveyed down roadways during storms rather than across vegetated areas. Planning efforts for a large-scale salt marsh restoration south of the river mouth to restore tidal prism is ongoing.

An opportunity exists in current efforts by the International Boundary and Water Commission to implement Minute 320. The October 2015 addition to Article 16 of the United States–Mexico Treaty for Utilization of the Waters of the Colorado and Tijuana Rivers established “an inclusive process to obtain recommendations from stakeholder groups on transboundary issues in the Tijuana River Basin and to jointly identify measures that require cooperative action to benefit the residents on both sides of the border.”<sup>3</sup> A number of projects that could help reduce sedimentation and water pollution within the reserve could be funded under Minute 320. Projects being considered include the Nelson/Sloan quarry, a site that could be used for sediment disposal.

### *Findings for Cross-Border Issues*

**Accomplishment:** Tijuana River National Estuarine Research Reserve, working with nongovernmental organizations in Mexico and the NOAA Marine Debris Program, have

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<sup>3</sup> Minute No. 320: *General Framework for Binational Cooperation on Transboundary Issues in the Tijuana River Basin*; International Boundary and Water Commission of the United States and Mexico, October 5, 2015.

developed trash reduction initiatives and instituted water quality improvements in the Tijuana River Watershed.

**Recommendation:** California State Parks should ensure that any funds recovered from the Department of Homeland Security would be devoted to the reserve to restore natural resources and replace public access lost as part of the land seizure of 53 acres in 2008.

**Recommendation:** Tijuana River National Estuarine Research Reserve should continue to communicate problems and provide training on natural resource protection for U.S. Border Patrol agents.

**Recommendation:** The State of California, through its membership on the Binational Core Group and associated Binational Working Groups established under Minute 320, should work to identify appropriate projects to be addressed by the International Boundary and Water Commission.

## Evaluation Metrics

### Metric 1: Informed Sediment Management

**Goal:** National Estuarine Research Reserve System Strategic Plan People Goal: Reserve System education and training increases participants' environmental literacy and ability to make science-based decisions related to estuaries and coastal watersheds.

**Objective:** Improve the capacity and skills of coastal decision makers to use and apply science-based information in decisions that affect estuaries and coastal watersheds.

**Performance Measure:** Between 2012 and 2017, the number of new targeted workshops or technical assistance held that communicate results of new research on sediment management approaches.

**Target:** Between 2012 and 2017, ten new targeted workshops or technical assistance held that communicate results of new research on sediment management approaches.

**Fiscal Year (FY) 2013 Annual Data:** Seven new targeted workshops or technical assistance held that communicate results of new research on sediment management approaches.

**FY 2014 Annual Data:** Four new targeted workshops or technical assistance held that communicate results of new research on sediment management approaches.

**FY 2015 Annual Data:** Two new targeted workshops or technical assistance held that communicate results of new research on sediment management approaches.

**FY 2016 Annual Data:** Three new targeted workshops or technical assistance held that communicate results of new research on sediment management approaches.

**Cumulative Data:** Sixteen targeted workshops have been held.

**Discussion:** The reserve has exceeded its target for this category. Workshops have been held to increase community and partner awareness on sediment management, which has shown on-the-ground results related to both coastal resilience and cross-border issues.

### Metric 2: Increased Sector Integration

**Goal:** Tijuana Reserve Management Plan Goal II: To fully integrate the reserve's research, stewardship, community outreach, and education programs along with the Tijuana Slough National Wildlife Refuge program, and provide a model of excellence in all areas.

**Objective:** Administrative Plan of Action, Objective 4. In cooperation with federal, state, and local partners, a seamless reserve will be managed that addresses watershed and ecosystem-level concerns while meeting the established purpose of the Tijuana River Reserve and Tijuana Slough National Wildlife Refuge.



**Performance Measure:** Between 2012 and 2017, the number of collaborative products produced through the combined efforts between two or more of the reserve's programs including coastal training program, research, education, community outreach, stewardship, and the Tijuana Slough National Wildlife Refuge.

**Target:** Between 2012 and 2017, ten collaborative products produced through the combined efforts between two or more of the reserve's programs including coastal training program, research, education, community outreach, stewardship, and the Tijuana Slough Refuge.

**FY 2013 Annual Data:** Six collaborative products produced through the combined efforts between two or more of the reserve's programs including coastal training program, research, education, community outreach, stewardship, and the Tijuana Slough Refuge.

**FY 2014 Annual Data:** Six collaborative products produced through the combined efforts between two or more of the reserve's programs including coastal training program, research, education, community outreach, stewardship, and the Tijuana Slough Refuge.

**FY 2015 Annual Data:** Two collaborative products produced through the combined efforts between two or more of the reserve's programs including coastal training program, research, education, community outreach, stewardship, and the Tijuana Slough Refuge.

**FY 2016 Annual Data:** Seven collaborative products produced through the combined efforts between two or more of the reserve's programs including coastal training program, research, education, community outreach, stewardship, and the Tijuana Slough Refuge.

**Cumulative Data:** Twenty-one collaborative products produced.

**Discussion:** The reserve has exceeded the target for this category. The products and technical assistance have been very useful to its many partners and have also attracted new partners to the reserve (see especially the discussion of key efforts under "Coastal Resilience").

### **Metric 3: Binational Collaboration**

**Goal:** Tijuana River Reserve Management Plan Goal IV: To assume regional leadership role for science-based natural resource enhancement and urban ecosystem management using partnership strategies in the entirety of the Tijuana River Watershed.

**Objective:** Stewardship Plan of Action, Objective 2. Respond to ongoing watershed-based resource management problems, such as sedimentation and erosion, by establishing cooperative and integrated programs and approaches throughout the watershed, on both sides of the international border, and, especially, within the Tijuana River Valley.

**Performance Measure:** Between 2012 and 2017, the number of binational collaborative efforts that address coastal environmental issues associated with the U.S.-Mexico border.

**Target:** Between 2012 and 2017, ten binational collaborative efforts that address coastal environmental issues associated with the U.S.-Mexico border.

**FY 2013 Annual Data:** Ten binational collaborative efforts that address coastal environmental issues associated with the U.S.-Mexico border.

**FY 2014 Annual Data:** Ten binational collaborative efforts that address coastal environmental issues associated with the U.S.-Mexico border.

**FY 2015 Annual Data:** Nine binational collaborative efforts that address coastal environmental issues associated with the U.S.-Mexico border.

**FY 2016 Annual Data:** Five binational collaborative efforts that address coastal environmental issues associated with the U.S.-Mexico border.

**Cumulative Data:** Thirty-four binational collaborative efforts.

**Discussion:** The reserve has far exceeded the target for this category. By actively involving Mexican organizations in their advisory groups, increased future collaboration is ensured.

## Conclusion

For the reasons stated herein, I find that California State Parks is adhering to the programmatic requirements of the Coastal Zone Management Act and its implementing regulations in the operation of the Tijuana River National Estuarine Research Reserve.

These evaluation findings contain no necessary actions and eight recommendations. The recommendations must be considered before the next regularly scheduled program evaluation, but they are not mandatory at this time. Program recommendations that must be repeated in subsequent evaluations may be elevated to necessary actions.

This is a programmatic evaluation of the Tijuana River National Estuarine Research Reserve that may have implications regarding the reserve's financial assistance awards. However, it does not make any judgment about or replace any financial audits.

Signed: Jeffrey L. Payne \_\_\_\_\_  
Jeffrey L. Payne, Ph.D.  
Director  
NOAA Office for Coastal Management

Dated: May 9, 2017 \_\_\_\_\_  
Date

## **Appendix A: Response to Written Comments**

No written comments were received.