

## **Tijuana River National Estuarine Research Reserve (TRNERR)**

### **Program Manager Reports**

**Report Period: January 1, 2023 through July 31, 2023**

#### **TASK: OVERSIGHT AND IMPLEMENTATION OF RESERVE OPERATIONS**

**Chris Peregrin, TRNERR Reserve Manager, California State Parks**

##### **1. Coordinated Implementation of Reserve Programs**

NOAA NERR Operations Progress Reports: The TRNERR Management Team coordinated reporting and submittal for Performance Progress Report(s) for NOAA Award NA22NOS4200084, first period.

NOAA NERR Operations Grant Applications: The TRNERR Grant Review Team worked with the Office for Coastal Management to develop and submit the NOAA Operations application for the FY 2023 award. The Grant Review Team is composed of the Assistant Reserve Manager, San Diego Coast District Natural Resources Program lead, the San Diego Coast District superintendent, the San Diego Coast District Environmental Coordinator, and the TRNERR Research Coordinator and the SWIA Administrative Director, who are both employees of the Southwest Wetlands Interpretive Association. The Grant Review Team has the decision-making authority over all State Park agreements, grants, and contracts associated with reserve operations including the NOAA operations award and the Coastal Training Program contract. This team ensures that the reserve is able to best assign funds to projects and staff for effective program implementation.

NERRS Managers: The Reserve Manager contributed to the NERR Manager Meetings held January 25, 26, 27.

NOAA West Coast Regional: The Reserve Manager attended the NOAA West Coast NERRS/CZM Regional meeting on March 7.

TRNERR Advisory Council: The TRNERR Management Team and Program Managers hosted the quarterly TRNERR Advisory Council meetings on February 7 and May 2. The February 7 meeting included a presentation from Chris Helmer (City of Imperial Beach) and Bryn Evans (Dudek) summarizing the final report for the Tijuana River Valley Sediment Management Work Plan. Presentation [link](#). The May 2 meeting included Mike Verderber (County Department of Parks and Recreation) presenting an update on the Tijuana River Valley California Coastal Trail Feasibility Study and the Valley-wide Restoration Plan.

##### Reserve Staff Integration:

The Reserve Staff initiated professional sharing lunches, held on the last Thursday of each month. During this period, we had presentations from Stewardship on *Arundo*

control, Research on *Phacelia stellaris* monitoring, and CTP on outreach efforts for marine debris control.

SWIA Coordination: The Assistant Reserve Manager continued role of Cooperating Association Liaison for the Southwest Wetlands Interpretive Association and is attending the regular SWIA Board Meetings.

CA State Park Coordination:

The Reserve Manager attended regular CA State Parks San Diego Coast District Manager Team Meetings. One of the goals of this engagement is to ensure effective integration of Reserve programs with CA State Parks operations.

The Reserve Manager continued coordination with CA State Parks Peace Officers and seasonal lifeguards to support Reserve operations through public safety.

TRNERR Program Managers: The Management Team met with the TRNERR Program Managers approximately weekly in virtual format for this term of the grant to ensure programmatic coordination.

Personnel:

CA State Parks San Diego Coast District Superintendent Gina Moran retired. Chief Ranger Nicole Van Doren was appointed Acting District Superintendent. N. Van Doren has managed operations in the San Diego Coast District for years and has a strong familiarity with the Tijuana River Valley. Congratulations Nicole!

The Reserve Manager and the Education Coordinator worked with CA State Parks Interpretation lead and Administration to advertise, interview and hire a new Education Specialist.

USFWS Ranger Debby Good retired. D. Good had 30-year career with USFWS at the Tijuana Estuary- she was responsible for much of the day-to-day stewardship of the habitat around the visitor center and will be greatly missed.

Lisa Tomas was hired as the new District Superintendent I for the San Diego Coast District. The District Superintendent I is a new management position for the San Diego Coast District. The TRNERR Manager will report directly to the District Superintendent I. Welcome Lisa!

## **2. Management of Reserve Budget**

NOAA NERRS Operations Award: The Assistant Reserve Manager coordinated the expenditures of the NOAA Award NA22NOS4200084.

- NOAA Operations PAC Supplement: The TRNERR Management Team worked with NOAA OCM to include an additional task item for the FY23 award application supporting the purchase of improved trash boom infrastructure for the Goat Canyon Sediment Basins. The grant supplement complements the NOAA Marine Debris grant application for interception technology. Together, these

requests will facilitate improvements to both upper and lower trash booms in the Goat Canyon Sediment Basins.

CA State Parks Operations: The Reserve Manager coordinated the expenditures of the CA State Parks FY22 operations budget for the San Diego Coast District South Sector, including State Parks contributions to the TRNERR.

Additional Grant Management and Coordination:

- Nelson Sloan Quarry: The Reserve Manager supported the Assistant Reserve Manager and CA State Parks Administration staff to manage the Nelson Sloan Quarry Restoration and Beneficial Reuse of Sediment Project grants and administration process. This project is funded through three grant allocations from the State of California- one from CA Department of Water Resources (via San Diego County Water Authority) and the other two through the State Coastal Conservancy.
- Bipartisan Infrastructure Law (BIL): The TRNERR Management Team worked with the TRNERR Program Managers to continue advancement of the NOAA BIL funding support. A funding request has been advanced through SWIA to support capacity building toward a future award request addressing implementation activities.
- Inflation Reduction Act (IRA): The TRNERR Management Team worked with the TRNERR Program Managers to evaluate options for NOAA IRA funding support.
- NOAA Marine Debris Program- Interception Technology (IJA/BIL): The TRNERR Management Team continued coordination with the NOAA Marine Debris Program for application review and approval for the NOAA-NOS-ORR-2022-2007199- which involves a request for approximately \$270,000 to improve the Goat Canyon trash booms. The request was approved during this review period, and additional information can be found [here](#). The award will be managed through CA State Parks.
- NOAA Marine Debris Program- Community Clean-up (USMCA): The TRNERR Management Team continued management support for the NOAA Marine Debris Grant to SWIA which involves approximately \$570,000 to advance the following goals:
  - Goal 1: Pilot a community-led circular economy approach through reuse and income generation.
  - Goal 2. Establish and implement a cross-border Marine Debris Leadership Academy
  - Goal 3. Improve binational flood emergency response and resilience.
  - Goal 4. Provide an exemplary model of land-based marine debris capture and characterization.

- Goal 5. Protect and enhance beach, dune, high-marsh, and riverine environments.
- Wildfire and Forest Resilience Program: The Management Team continued coordination with the CA State Parks San Diego Coast District Natural Resources Program toward control of *Arundo donax* within the Reserve. The effort is funded by CA State Parks Wildfire and Forest Resilience Program. The project supports a portion of the Stewardship Maintenance Aide's time and funding, and is an example of leveraging CA State Parks funding sources to leverage NOAA investments (See also: Outcome 3 below, and Stewardship).
- NERRS Science Collaborative: The TRNERR Management Team and Program Managers collaborated on the development and submittal of a \$10,000 capacity building grant from the NERRS Science Collaborative, focusing on capacity building for programs and projects in the context of a 'tri-national' watershed (U.S. Mexico, Kumeyaay). The award was granted to SWIA.

### **3. Protection and Restoration of the Tijuana River Valley**

Goat Canyon Sediment Basin: The TRNERR Management Team worked with contractor ERRG on the Goat Canyon Sediment Basin maintenance activities. During this reporting period efforts focused on material testing and haul-off removal activities for the deposition material excavated in Fall 2022 (see also Stewardship). Approximately 20,000 cubic yards of material was contracted for excavation and haul-off during this period; the deposition material for this season's work is being beneficially reused for concrete and asphalt production, and also nursery/landscape products.

The TRNERR Management Team continued efforts with CA State Parks Administration to develop and competitively bid contract documents for the Goat Canyon Sediment Basin maintenance- the project must be re-bid for FY 23. During this award period an updated contract was awarded to ERRG and contract documents have been sent to Sacramento for final review and approval in preparation of a fall 2023 Notice to Proceed.

The Management Team supported CA gnatcatcher and least Bell's vireo surveys for the 2022 nesting season; these surveys support regulatory compliance for the Goat Canyon Sediment Basin maintenance activity (see also Stewardship).

Nelson Sloan Quarry: The Assistant Reserve Manager is the project manager for the Nelson Sloan Quarry Restoration and Beneficial Reuse of Sediment Project. The Assistant Reserve Manager continued coordination with the Reserve Manager, the design staff from CA State Parks Southern Service Center, CA State Parks Administrative staff, the grantors (CA Department of Water Resources via San Diego Regional Water Authority, and the CA State Coastal Conservancy), and the State's project consultant (Dudek) to continue design work and environmental review for the project. During this period, significant focus was placed on response to comments and

preparation of the Final EIR for certification. Additional information for this project can be found [here](#).

TETRP II Phase I: The TRNERR Management Team continued work with the TRNERR Research Coordinator, SWIA Project Management, US Fish and Wildlife Service, and project consultants to further the design for the Tijuana Estuary Tidal Restoration Program (TETRP) II Phase I project. This project seeks to restore roughly 80 acres of salt marsh within the Reserve. During this period the project team prepared the Final EIR/EIS for certification (see also Stewardship and Research). The USFWS has issued the Record of Decision for the TETRP II Phase I project, stating that Alternative 2 has been selected for implementation. Both the Record of Decision and the Final EIS/EIR are available. California State Parks has issued a Notice of Determination; it was published on the State Clearinghouse on March 24, 2023 and can be found [here](#). A Notice of Availability of the Final EIR/EIS was published in the Federal Register on March 31, 2023 and can be found [here](#). Under Alternative 2, approximately 68 acres of coastal wetlands and 15 acres of native transitional and upland habitat would be restored within the Tijuana Estuary.

USEPA USMCA EPECG: The Reserve Manager continued engagement with USEPA to address issues with water and wastewater infrastructure that contribute toward cross-border pollution, and to prioritize improvements that will address the wastewater and freshwater discharges into the Tijuana River. The Reserve Manager serves on the Eligible Public Entities Coordinator Group (EPECG; formerly the Inter-Agency Consultation Group) for this effort, and along with the CA State Coastal Conservancy, represents the CA Natural Resources Agency and the Tijuana River National Estuarine Research Reserve. On June 9, 2023, in accordance with the National Environmental Policy Act, the U.S. Environmental Protection Agency (EPA) and International Boundary and Water Commission, U.S. Section (USIBWC) issued a Record of Decision (ROD) for the proposed United States–Mexico–Canada Agreement (USMCA) Mitigation of Contaminated Transboundary Flows Project (the Proposed Action). The Proposed Action involves the planning, design, and construction of infrastructure to reduce transboundary flows from Tijuana that routinely convey pollutants, sewage, and/or trash into the U.S. As documented in the ROD, EPA and USIBWC have selected Alternative 2 (Core and Supplemental Projects), which is the preferred alternative identified in the Final Programmatic Environmental Impact Statement (PEIS) for the USMCA. The ROD also includes responses to substantive comments provided on the Final PEIS and a list of mitigation measures to be implemented during the design, construction, and operation of the Proposed Action. Additional Information can be found [here](#).

IBWC Minute 320 Binational Core Group: The Reserve Manager worked with TRNERR Binational Liaison to contribute to IBWC Binational Core Group meetings for the IBWC Minute 320 effort.

Tijuana River Valley Sediment Management Plan: The Reserve Manager, Assistant Reserve Manager, Research Coordinator and CTP Coordinator contributed to the technical advisory committee and/or review for elements of Tijuana River Valley

Sediment Management Plan. This effort is led by the City of Imperial Beach, with consultant Dudek, and funded by the State Coastal Conservancy. The plan was finalized during this reporting period, and more information can be found [here](#).

NOAA Marine Debris- Community Clean-up (USMCA): The TRNERR Management Team worked with CTP Coordinator, CTP Associate, Research Coordinator, Volunteer Coordinator, and Binational Liaison to continue work on the NOAA Marine Debris North American Marine Debris Prevention and Removal grant opportunity. This grant is supported through USMCA funds (see also Coastal Training Program). During this award period the Reserve Manager worked with CTP and Stewardship to support characterization of the trash captured behind the Goat Canyon Sediment Basin trash booms. The characterization effort is funded by NOAA's Marine Debris Program through a grant to SWIA.

TRVRT: The Reserve Manager, Assistant Reserve Manager, and Research Coordinator continued collaboration with the Tijuana River Valley Recovery Team (TRVRT).

Wildfire and Forest Resilience Program: The Management Team continued coordination with the CA State Parks San Diego Coast District Natural Resources Program toward control of *Arundo donax* within the Reserve. The effort is funded by CA State Parks Wildfire and Forest Resilience Program. The project is focused on habitat downstream of the Goat Canyon Sediment Basins (See also: Outcome 2 above, and Stewardship).

Waste Tires: The Reserve Management Team collaboration with CalRecycle on agreements to haul off waste tires from the Reserve. The Goat Canyon Sediment Basin can capture up to 5,000 waste tires annually from cross-border flows.

CSP SDCD Climate Change Vulnerability and Adaptation Plan: The Reserve Manager and CTP worked with CA State Parks on an on-going effort to develop a climate change vulnerability assessment and adaptation plan addressing the San Diego Coast District area, including the TRNERR.

#### **4. Development of TRNERR Partnerships**

The Reserve Management Team, Research Coordinator, and CA State Parks Management had several meetings with the US Navy focused on a potential Sentinel Landscape designation for the Tijuana River Valley and San Diego Bay.

#### **Tours and Presentations:**

The TRNERR Management Team and Program Managers coordinated with County of San Diego, USFWS, and the CA State Coastal Conservancy to host a tour of the Tijuana River Valley for Conservancy Board members and interested public, held on February 1, 2023.

The Reserve Manager hosted CA State Assemblymember David Alvarez, and CA State Speaker of the Assembly Rober Rivas, and staff, for a tour of the TRNERR on March 24, 2023.

The TRNERR Management Team and the USFWS Refuge management Team hosted the program director for the National Parks Service National Natural Landmark program on April 17. 2023 is the 50<sup>th</sup> anniversary of the Tijuana Estuary's designation as a National Natural Landmark, the designation offers opportunities to tie into some National Parks Service initiatives.

The Reserve Manager worked with the Education Coordinator, Education Specialist, and Research Coordinator to facilitate a visit on March 15 from CA State Historic Preservation Officer Julianne Polanco and National Geographic to assess potential of Border Field State Park and the TRNERR serving as a focus for a climate change vulnerability assessment effort known as Preserving Legacies. More information on the program can be found [here](#).

The Reserve Manager worked with the Executive Director of the San Diego Regional Water Quality Control Board to host a tour of the Tijuana River Valley for attendees of the Center for Watershed Protection National Conference. NOAA Operations award through SWIA helped support tour logistics.

On - June 16, 2023, the Reserve Management Team and Program Managers, along with CA State Coastal Conservancy and the US Navy hosted a tour of TRNERR with Becky Smyth, West Coast Regional Director, NOAA Office for Coastal Management.

The Reserve Manager supported the USFWS Refuge Management interview process in efforts to consider a new Refuge Manager for the Tijuana Slough National Wildlife Refuge.

### **5. Oversight of Reserve Facilities and Public Access Opportunities**

The Reserve Manager coordinated with CA State Parks Southern Service Center design team to further efforts focused on the repair of Monument Road in Border Field State Park. During this review period, the team focused on updates and amendments to the scope of work and contract for the planning and design consultants. Consultant work is secured to complete 30% design and CEQA/NEPA review for the project.

The Reserve Manager worked with CA State Parks Maintenance and CA State Parks Administration to scope and contract work to clear the sediment and debris off of Monument Road within Border Field State Park. Heavy rainfall resulted in significant flooding and damage to the park entrance road.

The CA State Parks maintenance team managed the TRNERR facilities and visitor use facilities at Border Field State Park.

### **6. Reserve participates in Section 312 Evaluation**

**312 Findings:** The findings for the July 2022 312 Evaluation were issued in January 2023. The Reserve Management Team worked with the TRNERR Program Managers to respond to the Necessary Action and the Recommendations identified in the

Reserve's 312 findings (see *Tijuana River NERR Section 312 Evaluation Status Report*).

## **TASK: EDUCATION PROGRAM**

**Anne Marie Tipton, TRNERR Education Coordinator, California State Parks**

### **1. Implementation of Education Programs**

#### *A. Formal and Non-formal Teacher Training*

Reserve educators conducted one MARSH teacher training for one elementary teacher.

#### *B. Student-centered Formal and Informal programs*

The Reserve had eleven elementary and two high school in-person programs with a total of 458 students.

Reserve Educators continued carrying out their 3 virtual programs through California State Parks, Parks Online Resources for Teachers and Students (PORTS). The Reserve delivered three high school level *Detecting a Changing Climate* (DACC), seven *Can Salt Marshes Help Fight Climate Change* to middle schoolers, and 22 *Salt Marsh Secrets* to elementary students. We also reached 1,688 students in three PORTScast Salt Marsh Secrets webinars. A total of 2,875 students were reached through these programs with a total of 4,616 for the whole 2022-23 school year. That was 2,228 fewer than last school year because State Parks changed the registration to August for the first semester and December for the second semester. Teachers just didn't sign up for the second semester because they were busy with holiday and end of semester activities in December.

The Reserve's virtual programs developed for PORTS are available on their own landing page on the PORTS website: [PORTS - Tijuana Estuary Natural Preserve \(ports-ca.us\)](https://ports-ca.us)

#### *C. Interpretation*

Lunchtime Live, a Facebook Livestream that began in April 2020, continued during this period, every other week. There were two programs delivered with a typical length of 20-30 minutes each and totaling two views. The program was designed to provide outreach and interaction with the public since in-person bird and nature walks had ceased. The Reserve has been having connectivity problems with Facebook. The Education Program might try Instagram in the future.

TRNERR had a booth for Love Your Wetlands Day at Kendall Frost Marsh in February with 103 people coming by. The Science Expo came back to Petco Park in early March, 537 people visited our booth. Booth activities included the carbon sequestration maze, a display about SWMP, and the Research Program



created a new plant sampling demo with remarkably accurate plastic plants glued onto a bulletin board.

EC Tipton tabled at the *Get out There* themed building in the San Diego County Fair in June on State and County parks in our county. The State Parks San Diego Coast District interpreter helped to develop this 20,000 square foot area of exhibits including a 12 x 8-foot wall of TRNERR research information. On that day, around 100 visitors came by the booth.

### New Nature Walk

The Tijuana River Reserve has bird or nature walks almost every day on the weekends, led by fully trained docents, including a youth bird walk docent. The Reserve was excited to announce a new weekend nature walk led by docent Ron Peterson in June. His first monthly Saturday nature walk titled *An Eye-Opening Experience Without Sight*, was on Saturday, June 3rd at 11:00 a.m. with 13 participants. R.Peterson is blind, and he and his guide-dog Gidget are frequent visitors to the Reserve. Mr. Peterson was a regular stewardship volunteer here for many years before he lost his sight.

Since losing his sight four years ago, he has memorized 30 species of plants by feel, smell, and hearing. R.Peterson came to us with an idea to develop a nature walk. He started developing it with the Reserve's Volunteer Coordinator before docent training was resumed after the pandemic in spring 2023. The Education Coordinator observed his practice walk several times and used the California State Parks *Aiming for Excellence* tour evaluation tool RAPPOR to coach him through the process. The learning process wasn't easy, as he had never done interpretive walks while he was sighted, much less being evaluated. He had to learn his walk and train Gidget on the route.

R.Peterson guides participants along the trails around the visitor center to demonstrate how using other senses, besides sight, will create an enriched appreciation and enhanced knowledge of native plants from his unique worldview. R.Peterson also gives presentations with his guide dog in local classrooms and gives talks about traveling while blind. Since June, in addition to his regularly scheduled monthly walk, he has led several private tours with the San Diego Alzheimer's Foundation, a guide dog group, and Chapter One. The Braille Institute and the Torrey Pines State Reserve docents are also coming later in the summer. For more information about ongoing tours go to <https://trnerr.org/visit/public-programs/>

### D. Visitor Services

The Visitor Center had 5,508 visitors from January to June, this is 1,433 more than the same period last year.

## **2. Production of Outreach Materials**

Reserve Education staff produced an e-newsletter every month of this reporting period including highlighting volunteers, other special events, and accomplishments.

## **3. Volunteer Capacity Building**

The Reserve had 22 new volunteers trained this spring. It was the first training since 2019. TRNERR trained docents, stewardship, and restoration guides. County rangers from the Tijuana River Valley Regional Park joined the docent training because they wanted to get trained in interpretation.

## **4. Environmental education and interpretive capacity and leadership roles**

The Reserve's Education Coordinator hosted a San Diego Exhibit Experience Group meet up in June at the Mingei International Museum in Balboa Park. The group evaluated an African folk-art exhibit.

As a result of the Education Committee meeting to develop the Annual Interpretive Implementation Plan from our recently approved Interpretive Master Plan, EC Tipton along with our FWS partners, trained five County Rangers from Tijuana River Valley (3) and San Elijo (2) (another wetland in San Diego). They were trained on NERRS, SWMP, Refuges, endangered species, and reserve history. They seemed to really appreciate and enjoy it. Tijuana River Valley Regional Park has a campground and the southeast edge of Border Field State Park, and the rangers there wanted to inform the campers about reserve relevant topics.

### **Task: COASTAL TRAINING PROGRAM (CTP)**

**Dr. Kristen Goodrich, TRNERR CTP Coordinator,  
Southwest Wetlands Interpretive Association**

#### **1. Deliver training and technical assistance to coastal decision-makers**

Start CTP delivered several trainings in this reporting period on topics including nature-based solutions for resilient coastal communities, seismic risk, and unlocking insurance to leverage nature finance & risk for coastal resilience in San Diego. Additionally, Adela Bonilla and CTP trained students from the Advancing Students Forward Program about circular economy at the Tecolote Community Center across three workshops. These workshops were supported by the Duos project ("Improving socio-ecological resilience through marine debris prevention and removal in U.S.-Mexico") funded by the U.S.-Mexico-Canada Agreement and NOAA Marine Debris Program. Results from these and other post-workshop evaluations can be found in the OCM performance monitoring database, however, in this reporting period, CTP underwent a voting process that resulted in a change to programmatic standards and requirements. Additional guidance will follow as alignment between the updated CTP strategic model and national program standards occurs.

In this reporting period, CTP made numerous presentations to audiences including:

- City of Tijuana staff re: solid waste reduction

- Baja working group related to projects occurring within the Mexican section of the Tijuana River Watershed
- NOAA's Marine Debris Program on the Marine Debris Leadership Academy
- Middlebury Institute of International Studies on binational coordination in the Tijuana River Watershed
- CA Sea Grant with a fellowship update

CTP continued to provide ongoing technical assistance to the Baja California State and local governments, including identifying opportunities to include green infrastructure in City of Tecate policies and regulation. This was in addition to efforts related to the International Seismic and Flood Awareness Week that involved convening, community capacity-building, and tours for various scales of government.

Additionally, CTP participated in the CZM, NERR, OCM Training Collaboration Workgroup to design and deliver a training based on a needs assessment among the California Coastal Zone Management agency staff - the State Coastal Conservancy, Coastal Commission, and the Bay Conservation Development Commission.

CTP also participated in resuming regular meetings to further collaborate on Resilient Reserves and Roads (R3), a NERRS Science Collaborative (NSC) transfer grant project with the Elkhorn Slough and San Francisco Bay NERRs. The R3 project aims to plan for impacts of climate change on infrastructure, like roads, adjacent to critical habitat and that provide access to communities. As meetings have resumed, CTP has worked to develop the project's synthesis report with a state legislative focus. As for other NSC projects, CTP has continued to participate in core workgroup meetings and bring trilateral perspectives to bear for 'Reciprocal Relationships in Reserves,' a transfer grant project with the He'eia, Kachemak Bay, and Wells NERRs. Given their potential to reveal feedback relationships between human and environmental well-being, the inclusion of cultural ecosystem services (CES) in natural resource planning and decision-making processes is critical to successful long-term application of stewardship and management strategies. This project looks to integrate CES approaches within the NERRS through a community of practice. CTP is currently hosting a 2023 California Sea Grant Fellow who is focused on coordinating the Reserve's NSC transfer project "[Transferring Knowledge to Understand the NERRS Niche in Addressing Aquatic-Bound Debris](#)" (NERRS' Niche). To-date, CTP initiated monthly Core Team meetings, developed a project charter, met with various Debris Community of Practice (DCoP) members (e.g., NOAA, Sea Grant, NERRA) to learn from existing projects on marine debris, and conducted the first Project Advisory Committee in anticipation of the first Knowledge Transfer Workshop in July 2023.

Additional, and varied, technical assistance was provided to coastal decision-makers in this reporting period, including facilitating meetings, providing survey and evaluation assistance, offering field experiences for NOAA and other coastal leadership, and assisting organizations with grant writing, plan/policy revisions, and strategic/action planning. A complete catalog of technical assistance and ongoing projects and partnerships can be found [here](#).

The CTP Coordinator has been serving as Vice President of the National Estuarine Research Reserve Association and continues to serve on various regional advisory bodies including the San Diego Regional Climate Collaborative as well as other NERR system level working groups including on topics of plastics, human dimensions, equity, and disaster resilience. Notably, in this reporting period, CTP attended the [#CEC30](#): Annual Commission for Environmental Cooperation Council Session to engage in a dialogue on critical environmental issues and share our perspectives within the framework of the Council Session.

## **2. Report training and technical assistance outcomes**

In this reporting period, after training delivery, CTP administered post-workshop evaluations, collected and analyzed data, and submitted it into the performance monitoring database. This detailed technical assistance catalog by award year can be found [here](#). The technical assistance spreadsheet is integrated with data from FY16 until FY22 (reporting period 2). The catalog includes a separate worksheet with ongoing CTP technical assistance.

### **TASK: STEWARDSHIP PROGRAM**

**Lorena Warner-Lara, TRNERR Assistant Reserve Manager,  
California State Parks**

## **1. Habitats downstream of the Goat Canyon Sediment Basin protected from catastrophic sedimentation and trash inundation**

The 2023-2024 State contract for maintenance of the Goat Canyon Sediment Basin was awarded to Engineering/Remediation Resources Group, Inc. (ERRG) to start in FY23. TRNERR is awaiting final contract review from Sacramento and approval to issue a Notice to Proceed. Work to process and haul approximately 20,000 cubic yards of material off-site was completed in June 2023. In September, the contractor is anticipated to begin to excavate an additional 20,000 cubic yards of deposition material from the basins, and initiate work to haul off-site. *Note that in recent years the cost of sediment management has increased significantly thus reducing the amount that can be hauled off annually.*

Assistant Reserve Manager continued working on the Nelson Sloan Quarry Restoration and Beneficial Reuse of Sediment Project with State Coastal Conservancy and consultant (Dudek) on final design and environmental review. This project will help with long-term stabilization of Goat Canyon activities and can provide a receiving site for future sediment excavated from the Tijuana Estuary Tidal Restoration Program (TETRP) II Phase I (*see also Oversight & Implementation*). The Final Environmental Impact Report was completed in June 2023 and a Notice of Determination to certify the document is expected in July 2023.

## **2. Sensitive plant and animal species habitat protected**

The Stewardship Program maintained fencing and signage along dunes and coastal bluffs with US Fish and Wildlife Service.

## **3. Critical monitoring needs identified to maintain habitat health and monitor impacts to sensitive species and restoration projects**

The Stewardship Program facilitated continued monitoring of California gnatcatcher, least Bell's vireo, California least tern, and Western snowy plover in the Reserve. State Parks awarded a two-year contract to Blackhawk Environmental for both the least Bell's vireo and California gnatcatcher protocol surveys which will cover the 2023 and 2024 survey seasons. Regular plover and tern monitoring began in March 2023 and will continue until September 2023. This work is largely accomplished through contract with a private consultant and through our partnership with the U.S. Fish and Wildlife Service staff at Tijuana Slough National Wildlife Refuge.

## **4. On-going restoration and enhancement projects continue trajectory toward healthy vegetation communities and integrate into functional ecosystem components with continued outreach opportunities**

During this period, the Retired Annuitant Environmental Scientist, the Manager and Assistant Reserve Manager continued to work with new Stewardship staff to develop skills and understanding of projects to support healthy vegetation communities. One of the Stewardship Maintenance Aide positions is funded through a combination of funds from the NOAA Marine Debris and the CA State Parks Wildlife and Forest Resilience programs. The other is a split position between the Stewardship (CA State Parks) and Research (SWIA) programs funded by this NOAA operations award. The Assistant Reserve Manager also works as an Environmental Scientist for the Stewardship Program, however, is not funded by this award but is partially counted as match.

Retired Annuitant Environmental Scientist and Stewardship Maintenance Aides continued maintenance of priority restoration sites.

During this period, the CSP San Diego Coast District Natural Resources Staff attempted to continue work on a stewardship project focused on site protection, invasive plant control, seed collection, propagation for restoration of rare plant habitat for Orcutt's liveforever (*Dudleya attenuata ssp. attenuata*) within the Reserve. However, due to a prolonged rainy season and subsequent water quality issues, compounded by border fence construction on Monument Mesa, access to the park and that project area was near impossible. Staff successfully accessed the site during two days in April and removed globe daisy (*Glebionis coronaria*) from the planted area.

Assistant Reserve Manager continued to work with Reserve Manager and Research Coordinator, SWIA Project Manager, USFWS, and project team to support the preparation of the joint EIR/EIS document for the Tijuana Estuary Tidal Restoration Program (TETRP) II Phase I. During this reporting period, the project team and consultants completed the Final Environmental Impact Report/Environmental Impact

Statement. CA State Parks issued a Notice of Determination to certify the FEIR document on March 22, 2023. The U.S. Fish and Wildlife Service published a Notice of Availability of the Final EIR/EIS in the Federal Register on March 31, 2023, followed by a Record of Decision in May for the project, stating that Alternative 2 has been selected for implementation. Under Alternative 2, approximately 68 acres of coastal wetlands and 15 acres of native transitional and upland habitat would be restored within the Tijuana Estuary on portions of both Border Field State Park and the Tijuana Slough National Wildlife Refuge. (See also *Oversight and Implementation and Research*)

The Assistant Reserve Manager facilitated Tijuana River Action Network meetings with various land managers, public stakeholder groups, and the Reserve's Binational Liaison (CTP), Volunteer Coordinator, and Stewardship staff. Planning for the 2023 Tijuana River Action Month (TRAM) has begun. TRAM is a month-long community-based clean-up and outreach event within and adjacent to the Tijuana River NERR. TRAM 2023 will run September 16 through October 14.

USFWS Park Ranger Debby Good retired in June after 30 years at the Tijuana Estuary. D.Good's work largely included trail maintenance, various planting projects involving propagating/planting native plant species and removing invasive species, but also habitat restoration around the northern portion of the Reserve. Her absence will leave a gap that needs to be filled. The Volunteer Coordinator, with assistance from the Stewardship Maintenance Aides, will be stepping in to fill this gap until the position can be re-filled.

During this period, the U.S. Fish and Wildlife Service (USFWS) Park Ranger, Volunteer Coordinator and Stewardship Maintenance Aides worked with the Reserve's Friday Stewardship Volunteers to maintain trails and a healthy native habitat primarily around the visitor center and the northern part of the Reserve.

#### **5. Identify public access and safety issues within the Reserve**

Stewardship staff supported the Reserve Manager in coordination with public and Reserve partners to identify high priority access issues and, where feasible, worked to maintain and enhance public access at key locations throughout the Reserve.

Border Field was hit hard by an unprecedented rainy season which increased the usual annual road maintenance challenges for public access to the park. State Parks maintenance staff worked to maintain public use facilities at Monument Mesa; however, work was delayed as access to this area was especially impacted (see also Stewardship Outcome #4). Processed a contract to have the road cleared of sediment due. In total approximately 3,000 cy was removed from the roadway. Processed a contract to mow the edges of the road to facilitate safe access.

The Reserve Manager worked with District Chief Ranger and Peace Officers to respond to public request for demonstration in opposition to additional border fence construction at Friendship Park on Monument Mesa. The Reserve Manager worked with the TRNERR Program Managers, and State Park District Chief Ranger, to improve

communication around water quality issues and beach closures initiated by the San Diego County Department of Environmental Health.

## **TASK: INVASIVE PLANT CONTROL**

**Lorena Warner-Lara, TRNERR Assistant Reserve Manager,  
California State Parks**

### **1. High quality nesting habitat for CA Least Tern and Western Snowy Plover**

No actions during this reporting period. Treatment of ice plant that is typically completed January/February was conducted in December and was included in the previous reporting period.

### **2. High Quality Habitat for Riparian Birds**

CSP Retired Annuitant Environmental Scientist and the Stewardship Maintenance Aides primarily treated castor bean (*Ricinus communis*), giant reed (*Arundo donax*), and tamarisk (*Tamarix ramosissima*) throughout the Goat Canyon drainage this period. Roundup Pro Concentrate, and Pathfinder II, post-emergent, broad-spectrum herbicides were used. Some annual forbs were mowed before herbicide treatment to reduce seed production and increase plant diversity while also creating some fuel reduction.

Annual weeds were hand-pulled around native plantings. Other plants treated included fennel (*Foeniculum vulgare*), iceplant (*Carpobrotus sp.*), Russian thistle (*Salsola*), Australian saltbush (*Atriplex semibaccata*), lens-pod white top (*Lepidium draba*), bristly ox-tongue (*Helminthotheca echioides*), Sahara mustard (*Brassica tournefortii*), black mustard (*Brassica nigra*), catsear (*Hypochaeris radicata*), tocalote (*Centaurea melitensis*), and globe daisy (*Glebionis coronaria*). CSP District Natural Resources staff assisted in annual treatment of approximately two acres of St. John's wort (*Hypericum ssp.*). This year's prolonged rainy season also washed in more invasive seed material from upstream, most notably castor bean (*Ricinus communis*).

TRNERR is preparing for another contract with the American Conservation Experience for removal of giant reed (*Arundo donax*). The crew will work for six days in September. This work is funded by the CA State Parks Wildlife and Forest Resilience program. In preparation for the arrival of the crew, the Stewardship staff have been maintaining access trails to the worksite, setting up a staging area for vehicle access, and retreating *Arundo donax* patches that were cut last fall.

## **TASK: TEACHERS ON THE ESTUARY**

**Anne Marie Tipton, TRNERR Education Coordinator, California State Parks**

### **1. Educators increase their knowledge of and appreciation of estuarine and watershed environments, as well as the necessary skills, to act as stewards of estuarine and watershed resources.**

Five educators attended the June 2023 all in-person summer Teachers on the Estuary training. There was one middle school, three informal, and one high school teacher. They had several asynchronous assignments including doing the SWMP tutorial to prepare for the SWMP Scenarios session.

Research and CTP staff participated. The San Diego County Office of Education science coordinator helped with planning. The training covered Estuaries 101, data literacy, SWMP Scenarios, vegetation sampling, school program activities, and a reserve tour to Border Field State Park along the border.

## **TASK: RESEARCH COORDINATION AND IMPLEMENTATION**

**Dr. Jeff Crooks, TRNERR Research Coordinator,  
Southwest Wetlands Interpretive Association**

### **1. Research by TRNERR staff increases local knowledge**

R.Booth leads the Reserve's volunteer program, and manages volunteer involvement in our research and monitoring. This includes participation in the State of California's [Marine Biotoxin Monitoring Program](#), assistance with field work such as vegetation monitoring and minnow trapping, and analysis of sediment samples in the laboratory.

### **2. The Reserve offers attractive opportunities for researchers**

Research projects are listed in the Research and Monitoring Database. Some examples include:

- The [NCCOS Coastal Hypoxia Research Project](#), a partnership with Scripps, SWIA/TRNERR, and San Diego State University, has been completed, and a final report is being prepared. This project leveraged long-term TRNERR-based monitoring to examine the effects of lagoon closure and other drivers on oxygen dynamics. We delivered this information to local resource managers, and held a symposium on this and related topics in February (*see also below*).
- A NERRS Science Collaborative grant (Luke Miller, SDSU, as PI), [Habitat Heartbeats](#), is expanding on the use of biosentinel shellfish.
- An [expanded suite of monitoring](#) with deployed dataloggers (e.g. tracking CDOM and tryptophan) associated with our SWMP stations, led by SDSU researchers.
- Examining local [groundwater dynamics](#).
- A project on habitat change in the Tijuana River Valley, with partial support from the US Navy and US Fish and Wildlife Service. A [StoryMap based on these results](#) has been published.
- A project examining the microbiome of native bees in local marshes being conducted by a student from UC Irvine. Initial transects have been established and sampling will continue in late summer.
- A [community air monitoring study](#) looking at air quality in the border area, especially associated with one of the busiest vehicle border crossings in the world.



- A Scripps study on [potential contaminants in sea spray aerosols](#).
- A NFWF-funded study on status and trends of contaminants in Reserve sediments and biota. This dovetailed with the work of our former Davidson Fellow, N.Torres.
- A project by a local high school student using [iNaturalist](#) to better characterize biodiversity in the estuary and watershed (particularly in Tijuana, where the student lives).

In addition, Dr. Crooks is involved advising or supporting a number of graduate student research projects. Dr. Crooks is on several committees and is chair for students at the University of San Diego. He is also involved in supporting students from a variety of universities, including SDSU, Scripps / UCSD, and UC Irvine.

### **3. Restoration offers opportunities for coupled science / management**

The Final EIR / EIS for the Tijuana Estuary Tidal Restoration Project ([TETRP](#)) II Phase I is complete. TRNERR also received a [grant from the State Coastal Conservancy](#) to conduct pre-restoration monitoring, finalize design, and obtain necessary permits. It is anticipated that construction will begin within 2 years, and we are working with the Conservancy on funding this implementation of this important restoration.

### **4. TRNERR is used as a reference site**

TRNERR is a reference site included in the [mitigation monitoring program for the impacts of the San Onofre Nuclear Generating Station \(SONGS\)](#). A round of fish and invertebrate sampling is being planned for the fall (conducted by University of California Santa Barbara scientists), and data from TRNERR SWMP loggers is also used as part of the performance assessment for the restored site in northern San Diego County.

### **5. Communication of key research findings and perspectives**

Dr. Crooks has continued to be involved in various steering committees and field trips. Activities during this reporting period include:

- On 7 February 2023, an [online symposium shared new research](#) results from the Tijuana Estuary and other local systems with wetland managers and local community groups. In addition to NOAA NCCOS, partners in this event included California Sea Grant, California State Parks, the National Estuarine Research Reserve System Science Collaborative, and the Scripps Institution of Oceanography (SIO). The symposium expanded on a smaller 2019 event that was held in the TRNERR training center. This year's symposium was [broadcast virtually](#), thereby reaching a much wider audience. Nine speakers presented at the symposium, and more than 100 attendees tuned in throughout the day from across California.
- Los Peñasquitos Lagoon Restoration Planning (with separate funding)
- HiTIDER (History and Topography to Improve Decision-making for Estuary Restoration) - NERRS Science Collaborative project
- Advise on Topanga Lagoon restoration
- Working with Southern California Wetlands Recovery Project to develop a

regional monitoring program (with [EPA WDPG funding to the State Coastal Conservancy](#)).

- Participating in region-wide estuarine monitoring as part of [Bight '23](#), led by the Southern California Coastal Water Research Project
- Led field trips for San Diego State University, the University of San Diego, and the Climate Science Alliance

Dr. Uyeda is also serving on the organizing committee of Love Your Wetlands Day at Kendall-Frost marsh for the last two years. She coordinates the marsh walk portion of the event, in which the general public picks up trash within the marsh as part of a guided tour. Dr. Uyeda is also organizing a series of scientific talks, so that volunteers collecting trash also have the opportunity to learn about marsh ecology from local estuarine scientists. Love Your Wetlands Day takes place in the early winter.

## **6. Reporting and Database Entry**

Database was updated as necessary.

## **TASK: IMPLEMENTATION OF THE SYSTEM-WIDE MONITORING PROGRAM**

**Dr. Jeff Crooks, TRNERR Research Coordinator,  
Southwest Wetlands Interpretive Association**

### **1. High quality meteorological and water quality data**

NOAA SWMP funding allows SWIA and TRNERR to leverage partnerships to maintain a robust monitoring program that addresses issues relevant to the Reserve specifically, and the region as a whole. Our partners and funders include California State Parks, the USFWS, the State Coastal Conservancy, the Los Peñasquitos Lagoon Foundation, and the National Fish and Wildlife Foundation.

We operate three stations in the Tijuana River Estuary, two of them formal SWMP and one is associated with TETRP (and is being maintained in accordance with SWMP protocols). One of these sites, Boca Rio, is associated with an enhanced suite of monitoring conducted by Reserve partners (see above). This includes a [web camera](#) deployed as part of the High Performance Wireless Research and Education Network (HPWREN). Two sites are monitored in South San Diego Bay, both SWMP. We also maintain three telemetered sites in Los Peñasquitos Lagoon, which are also being operated in accordance with SWMP protocols. This data is available at [torreypines.trnerr.org](http://torreypines.trnerr.org).

These data are used for a variety of research and management efforts, including management of tidal inlets (see CHRP section as well). Monitoring data are also being used to inform active restoration planning and post-construction monitoring, including TETRP, SONGS mitigation monitoring, South San Diego Bay salt ponds restoration, and Los Peñasquitos Lagoon restoration as part of a TMDL (Total Maximum Daily Load) associated with excess sediment and freshwater.

Dr. Crooks continues to serve as Chair of SWMP Oversight Committee, which helps ensure that high-quality data is produced by the Reserves.

## **2. Understanding of long-term vegetation dynamics and SSAM-1**

TRNERR conducted semi-annual vegetation monitoring in the Tijuana Estuary the spring, with the aid of volunteers. These sites include transects sampled using SWMP biomonitoring protocols. The Research Program is also working to include this data in the Science Collaborative NAMASTE project.

## **3. Integration of monitoring with education and outreach programming**

The Reserve conducted a TOTE training in the spring, and SWMP remains a centerpiece of TOTE activities (*see Education program report for more details*).

### **TASK: PROFESSIONAL DEVELOPMENT, TRAINING, PRESENTING**

**Dr. Jeff Crooks, TRNERR Research Coordinator,  
Southwest Wetlands Interpretive Association**

#### **1. NERRs Integration and Leadership Development**

Dr. Goodrich attended the Coastal Managers Meeting in Washington, D.C., in the spring.

#### **2. Staff Development**

Dr. Crooks traveled to the Marine Bioinvasions meeting in Baltimore (*see below*).

#### **3. TRNERR Staff Program Support and Enhancement**

Travel to field sites and local meetings occurred during this time period.

### **TASK: INVASIVE SPECIES - APPLICATION OF RESEARCH TO MANAGEMENT**

**Dr. Jeff Crooks, TRNERR Research Coordinator,  
Southwest Wetlands Interpretive Association**

#### **1. Improved understanding and management of local invaders**

A central element of the SWMP vegetation monitoring is to examine the distribution and abundance of invasive plants, which will be important in the development of a planting plan for the TETRP site. Dr. Crooks is also adjunct faculty in the Department of Environmental and Ocean Sciences at the University of San Diego, and advises students who are working on invasive species.

#### **2. Improved regional, national, and international information sharing**

The [11<sup>th</sup> meeting of Society for the Study of Marine Bioinvasions](#) was held in Baltimore Maryland, in May, 2023. Dr. Crooks is Co-President of the society and helped plan and carry out the successful meeting, which was hosted by the Smithsonian Environmental Research Center. It focused on sharing of information on invasive species research

and management from across the world. The next meeting is being planned for Portugal in 2025.

**TASK: MARGARET A. DAVIDSON FELLOWSHIP SUPPORT**

**Dr. Jeff Crooks, TRNERR Research Coordinator,  
Southwest Wetlands Interpretive Association**

**1. Successful implementation of Davidson Fellowship**

TRNERR's first Davidson Fellow, N.Torres, finished her fellowship on contamination levels in the Tijuana Estuary, and successfully defended her thesis in February.

The Reserve's current Davidson Fellow, Natalie Grayson from the Scripps Institution of Oceanography, has shifted her project (with guidance from Dr. Crooks), and is now working on a study of a "lost" invertebrate in the estuary: the sea pansy, *Renilla koellikeri*. N.Grayson has successfully sequenced the genome and transcriptome of this local octocoral in an area where it still exists. This will then be used to explore how gene expression is affected by exposure to contaminated waters that can be characteristic of the Tijuana River associated with rain events.