Case Study: Using Adaptation Indicators in Day-to-Day Management

Tijuana River NERR Leverages Existing Management Frameworks

Overview

Leveraging existing management frameworks to track progress towards resilience can result in more efficient and quick adoption of climate-specific indicators and metrics than starting from scratch.

The Tijuana River National Estuarine Research Reserve (TRNERR), on the U.S./Mexico border, took this approach to develop and track successful adaptation indicators and metrics (SAIMs) in the context of local reserve management as well as with regional partners in the greater San Diego region.

Building on previous vulnerability assessment and scenario-planning work, TRNERR and regional partners developed a vision of adaptation success. This collaborative effort reinvigorated partners' commitment to their own and shared goals.

In the context of reserve management, TRNERR made good progress in identifying, prioritizing, tracking, and using SAIMs, including updating their Comprehensive Management Plan. However, the task remains to develop a shared SAIM framework for the entire river valley.

Photo: Courtesy of Tijuana River NERR

During a CURRV workshop at the Tijuana River Reserve, stakeholders explored vulnerabilities under different climate scenarios. Adaptation metrics must be flexible enough to accommodate the climate scenario that will actually unfold.

Background

Based in California, but situated on an international border, TRNERR works with partners in Mexico to address cross-border environmental challenges and to protect one of the largest intact coastal wetland systems in Southern California, the Tijuana Estuary.

Environmental management at TRNERR provides a unique opportunity to explore how to prepare social-ecological systems for climate change in meaningful and measurable ways. Unlike most other coastal ecosystems in the region, which have been fragmented or lost altogether, the valley has contiguous beach, dune, salt marsh, riparian, and upland ecosystems. The Reserve is surrounded by highly urbanized areas on both sides of the border.

This case study was created to serve as a reference for individuals interested in indicators and metrics to help communities define and track progress on their climate adaptation goals. Additional background and resources are available on the website: www.ResilienceMetrics.org. This website was developed in partnership with the National Estuarine Research Reserve System with funding from NOAA.

Facilitation Tools and Job aids

- Facilitation Tool: Developing and Moving Toward a Regional Vision
- Facilitation Tool: Leveraging Existing I&M Frameworks for Adaptation
- Job Aid: How to Conduct a Visioning Exercise
- Job Aid: Choosing & Prioritizing Indicators & Metrics
- Job Aid: Indicator Occurrence Type & Frequency of Monitoring

Resources

- Tijuana River NERR Resilience & Adaptation Strategies: https://resiliencemetrics.org/sites/default/files/SAIM%20workshop%20materials/Tijuana%20River/8_Other%20Outputs/TRNERR%20Resilience%20Adaptation%20Strategies_Dec2016_draft.pdf
- CURRV Initiative: https://resilience-portal.wixsite.com/currv

Contact

- **Kristen Goodrich,** Tijuana River National Estuarine Research Reserve, kgoodrich@trnerr.org
- **Dani Boudreau,** GHD, danielle.boudreau@ghd.com (formerly with TRNERR)

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Since 2009, TRNERR's Coastal Training Program has supported planning for adaptation to sea-level rise and other coastal hazards, both at the Reserve itself and with partners in the larger Tijuana River Valley and San Diego region.

Through the Climate Understanding & Resilience in the River Valley (CURRV) project[1], TRNERR used scenario planning to understand local vulnerabilities. The project advanced local climate adaptation planning by recognizing the primary obstacles that prevent such processes from being effective: uncertainty, multi-agency jurisdictions, and competing needs of built and natural environments, among others.

The results of the scenario planning process informed the development of climate adaptation strategies for TRNERR, addressing the potential impacts that threaten the future resilience of important natural ecosystems, critical infrastructure, and surrounding human communities.

Originally, the Reserve intended to develop a regional adaptation plan that would outline collective actions to be taken by the eight public agencies that own and manage land in the Tijuana River Valley (TRV). However, it soon became clear that a regional document of this nature would not be actionable, given the wide variety of organizational missions and decision-making structures. In the end, a regional strategy document would have been a great exercise in collaboration but would not have resulted in any of the agencies being accountable for implementation.

Instead, the Reserve decided to work with regional partners to inform and integrate adaptation strategies into the Reserve's Comprehensive Management Plan. By doing this, strategies would be aligned with other organizational visions within the TRV but ensure that the Reserve was accountable for implementation of adaptation measures within its own jurisdiction.

Outcomes

The Successful Adaptation Indicators and Metrics (SAIM) project at TRNERR built on previously completed work on scenario-contingent climate vulnerabilities and adaptation planning to explore the question of adaptation success, both at a regional and the Reserve level.

When it came time to determine how to monitor successful implementation of the adaptation strategies and progress towards resilience, TRNERR integrated tracking of specific indicators and metrics (I&Ms) into existing frameworks.

The Reserve is a partnership between the National Oceanic & Atmospheric Administration (NOAA), California State Parks, U.S. Fish & Wildlife (USFWS), and a local nonprofit (Southwest Wetlands Interpretive Association, SWIA). Each organization has its own methodology for tracking and reporting I&Ms, so tracking adaptation I&Ms separately would have added an unnecessary and burdensome layer of data.

Through strategic conversations with the partnering agencies and each of the Reserve's programs (research, stewardship, education, training, and management), opportunities to integrate tracking of adaptation I&Ms were identified and operationalized through existing frameworks. Staff would be accountable for tracking and reporting adaptation indicators and metrics, just as they are for tracking the rest of their work. This strategy ensured early internal buy-in for tracking.

Over time, there will be opportunities to leverage these existing frameworks to strengthen and deepen the types of I&Ms tracked and to utilize them both internally and externally—for example, for reporting to funders, communicating progress to Reserve visitors, and adjusting Reserve management strategies in response to changing environmental conditions in the estuary as climate change advances.