Introducing the

LANDSCAPE SCENARIO PLANNING TOOL

A single mapping toolbox that brings together ten years of science-based research and peer-reviewed methods for California's Suisun-Delta region.

Cosumnes River Preserve, Photo by John Ciccarelli, courtesy BLM.

How Will This New Tool Help?

As climate change exacerbates landscape vulnerabilities, resource managers, planners, local governments, and other decision makers are increasingly challenged to maintain a healthy ecosystem that sustains human beings and the diverse assemblage of other species who rely on the Delta. Different actions are appropriate in different places and yield different functions and outcomes.

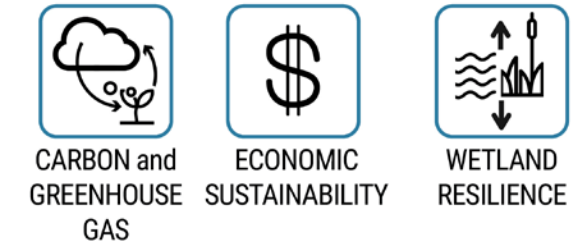
How do we evaluate proposed projects to balance our most pressing priorities? How can we standardize this process?

The Landscape Scenario Planning Tool (LSPT) evaluates scenarios located within the black boundary (part of Alameda, Contra Costa, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo counties).

A Tool to Evaluate Multiple Benefits

Designed to inform restoration planning, the **Landscape Scenario Planning Tool (LSPT)** quantifies how projects may affect different priorities, such as supporting healthy native fish populations, reversing land subsidence, and sequestering carbon. In addition, the tool estimates how well a proposed project will achieve the ecological goals tracked under the Delta Plan, making it easy to sum up gains across several projects at the regional scale.

LSPT Metrics



YOUR STORY, TOLD THROUGH SCIENCE

Use the tool in three easy steps.

Choose your project to analyze. This can be any project within the tool's study area. The scenario you create will be analyzed for 15 different metrics.

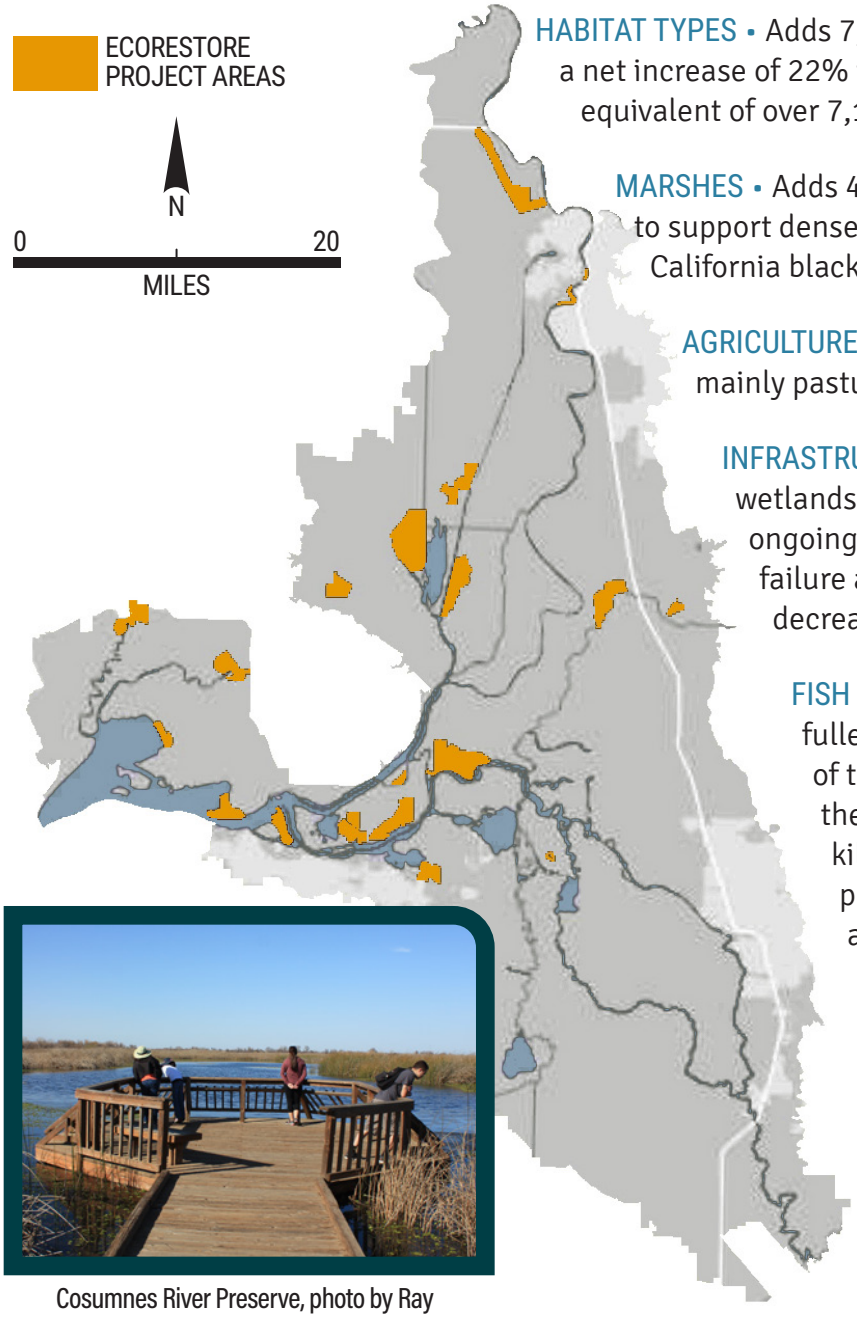
Run the tool. The tool automatically pulls together data and science to estimate the benefits and impacts of your scenario, giving you time to focus on other things.

Output stats. The tool generates a report explaining how your project contributes to the surrounding landscape that you can download and share.

Road Map to a More Sustainable Delta

The Delta is a critical hub of California's water supply, a vibrant agricultural economy, and home to endangered fish and other wildlife. These deeply valued functions of the landscape are vulnerable to catastrophic impacts from earthquakes and floods, and the risk increases over time. Projects that create a more resilient and sustainable Delta are urgently needed. **EcoRestore** is a CA Dept of FIsh and Wildlife initiative to advance at least 30,000 acres of critical habitat restoration and enhancement in California's Central Valley. Here is a preview of what the LSPT can tell us about the projected benefits and tradeoffs of EcoRestore:

CDFW's EcoRestore—Benefits and Tradeoffs



HABITAT TYPES • Adds 7,140 acres of restored tidal wetlands, for a net increase of 22% towards the Delta Plan's target. That's the equivalent of over 7,100 football fields!

MARSHES • Adds 4 large marshes (>247 acres) which are likely to support dense populations of threatened birds like the California black rail.

AGRICULTURE • Converts about 5,204 acres of farmland, mainly pasture—a tradeoff of bringing back wetlands.

INFRASTRUCTURE • Levees protect agriculture, managed wetlands, and communities. Levees require costly, ongoing maintenance to reduce the risk of levee failure and flooding. EcoRestore would result in a net decrease of 5 miles of levees.

FISH SUPPORT • Endangered Delta smelt have fuller stomachs when they are near large patches of tidal marsh. EcoRestore would increase the amount of tidal marsh near (within 2.0 kilometers of) open water by 4,411 acres, providing more feeding opportunities for smelt and other native fish.

SUBSIDENCE • Converts 2,135 acres of land below sea level to wetlands which will slowly gain elevation over time.

CARBON & GREENHOUSE GAS EMISSIONS • Reduces subsidence-related carbon losses by 14,000 metric tons/year and greenhouse gas emissions by 34,000 metric tons of CO_2 equivalents/year.

Cosumnes River Preserve, photo by Ray Bouknight, courtesy Creative Commons

STATEN ISLAND CASE STUDY

Finding the balance with the LSPT

DAWIT ZELEKE holds a vision for a sustainable Delta, and the Landscape Scenario Planning Tool can help it unfold. Zeleke, a farmer and conservationist with The Nature Conservancy, understands the Delta, including the legacy of past decisions on the landscape and the innovative approaches needed for the future. Zeleke's vision centers on supporting both people and wildlife through sustainable agriculture and wetland mosaics.

Zeleke has helped prove the viability of rice—once viewed with skepticism—as both a valuable crop and conservation tool for the Delta. Keeping the land wet for rice cultivation halts land subsidence, reduces greenhouse gas emissions, and facilitates wildlife-friendly management approaches. Now, Zeleke is working to expand his rice crop and achieve a broader multi-benefit vision for The Nature Conservancy's land on Staten Island.

Dawit Zeleke, Photo by The Nature Conservancy.

Together with colleague Emily Wells of Conservation Farms and Ranches, Zeleke worked with SFEI, Hydrofocus, Inc., and researchers at UC Merced to develop several possible management scenarios for Staten Island. These scenarios were analyzed using Landscape Scenario Planning Tool and other models, revealing the balance of multiple benefits achieved by each option. Ultimately, the results will inform Zeleke's management decisions and the future of Staten Island.

Pairing **on-the-ground knowledge** of local leaders like Zeleke with the **science embedded in the Landscape Scenario Planning Tool** can reveal **balanced land use scenarios** that achieve multiple goals for the economy, water-supply resilience, and the environment.

We want to hear from you!

Have an idea for a new metric? Send us an email at lspt@sfei.org. As we continue to build out this tool, we strive to bring in diverse perspectives. Reach out if you have thoughts on ways we can make our mapping toolbox reflect a wider range of values.

SFEI San Francisco Estuary Institute

Delta Stewardship Council

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