The EcoAtlas Toolset

Applied Aquatic Science:

A Business Plan

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Prepared for the California Wetland Monitoring Workgroup
by Tony Hale and Cristina Grosso

Aquatic Science Center
4911 Central Ave
Richmond, CA 94804

Executive Summary

The EcoAtlas suite of tools represents a significant investment of time, energy, thought, scientific testing, technical innovation, and capital from a number of state and federal public agencies, grant programs, and NGOs over the course of its 17-year existence. The toolset -- known individually as the EcoAtlas map viewer, Project Tracker, the California Aquatic Resources Inventory (CARI) map and editor tool, the California Rapid Assessment Method (CRAM), and the Riparian Zone Estimator Tool (RipZET) -- embodies the scientific and programmatic investments of the California Wetland Monitoring Workgroup (CWMW), its many related state and federal agencies, non-governmental organizations (NGOs), and private consultants, as well as the goals of the growing set of stakeholders who have expanded the circle of interested parties over the years. Now highly capable, the toolset represents more than science and technology alone, but a distillation of both, customized to meet specific goals associated with the landscape-scale tracking and characterization of California's aquatic resources. The US Environmental Protection Agency (US EPA), for instance, has supported the toolset through multiple development grants so that the collected tools might be complementary to a still-nascent, statewide wetland protection program. Meanwhile, the state's Coastal and Delta Conservancies require the use of the tool, and regional water boards -- including SF Bay, Lahontan, and North Coast -- regularly employ the tool for restoration project tracking. Essentially, EcoAtlas has proven critical to a variety of programs related to wetland protection, mitigation, and characterization; riparian zone planning; endangered species identification and protection; ecosystem restoration and planning; and stakeholder outreach. EcoAtlas represents a successful product of broad-based collaboration. However, it currently stands at a crossroads, and we in the CWMW must direct the toolset's future.

This document is intended to provide a plan to ensure the continued vitality of the toolset. The plan's success will depend upon the continued collaboration of the public agencies that have supported the toolset thus far, but it also integrates principles of resilience as it accounts for the inevitable tensions that arise as organizations move in different strategic directions.

Challenge

The major challenge we face is how to fund the continued maintenance, development, and innovation for the broad suite of tools constituting EcoAtlas. Having been reinvented in 2013, the tool is effectively on a trajectory from pilot project to an institutionalized instrument. Yet, the funding needed for such a transition is not yet available. US EPA and other governmental agencies have largely funded development of the EcoAtlas toolset through Wetland Program Development Grants and other in-kind contributions, which are designed to build state capacity but not to implement the toolset. Considering that state agencies presently depend on the tool for information resources, how do we ensure that EcoAtlas remains meaningfully connected to the stakeholders and public programs that have lent the toolset such vitality over the years?

The challenge is therefore chiefly a matter of process, people, and resources, rather than one of technology. The following document will describe the business plan for the toolset's future, while linking to a pair of very closely associated documents, which will be responsible for 1) describing the history and background of the toolset and 2) characterizing the field of possible funding models.

Solution

The EcoAtlas suite of tools fulfills a diverse set of needs addressing the study, assessment, and reporting of aquatic resources in California. Its interrelated set of tools each focus on delivering specialized, program-focused features, as defined by key stakeholder groups. The toolset adheres to the concept that no one tool can comprehensively address all information gaps across the watershed and therefore collectively produces a synthesized "whole watershed approach." Whether estimating the ideal riparian buffer width for a given stream or assessing the health of a wetland at the edge of the estuary, the EcoAtlas tools allow practitioners to deploy the right tool for the job in scientifically defensible ways, thereby producing a credible picture through composite outputs.

The following business plan requires a combination of new state investment through licensing and private investment through participant fees. It describes both the approach for ensuring the continued development of the toolset in alignment with stakeholder goals and the appropriate funding model to support the sustainable operations and maintenance of the tool. The result is a hybrid funding model that leverages project-specific funding, license-based access, participant fees, and data-sharing agreements, all of which will collectively facilitate the continued scientific and technological evolution of the toolset. The hybrid model will provide a diversification of the budgetary

infrastructure, allowing for greater sustainability and resilience against unforeseen shortfalls. Furthermore, the regionalization of the tool will operationalize a customization strategy and allow the tool to meet stakeholder demands. In this way, innovation can also continue. Through a structuring of the software to regionalize elements in close consultation with partners, we can maintain a common core of consistent software libraries and data that might be used across all regional instances.

Current Stakeholders and Governance

The toolset has a strong user-base comprising different programs and organizations across California's varied governmental terrain. And these users who manage their restoration project information on EcoAtlas and conduct assessments of wetlands throughout the state, in turn, influence the direction of the toolset. These groups include:

- **regulatory agencies with regional jurisdictions, such as the Lahontan, North Coast, and San Francisco Bay Regional Water Quality Control Boards,**
- **state agencies with statewide jurisdiction, such as the State Water Board, CalTrans, and California Department of Fish and Wildlife,**
- **federal agencies, such as the US Army Corp of Engineers and NOAA-NMFS who stores its Southern California eelgrass restoration projects,**
- **conservancies, such as the State Coastal Conservancy and Sacramento-San Joaquin Delta Conservancy**
- **Joint Ventures, such as the San Francisco Bay and Central Valley Joint Ventures with whom SFEI signed a three-way MOU of continuing support for EcoAtlas, and**
- **wetland groups, such as the Central Coast Wetlands Group.**

In addition, EcoAtlas, CRAM, CARI and Project Tracker were included in Proposition 1 guidelines and cited as examples of monitoring and assessment tools for tracking progress on wetland and riparian restoration projects.

The CWMW has served as the authority for directing the development of the toolset's various components. This workgroup of the California Water Quality Monitoring Council approves and channels guidance on desired features to scientific teams and software developers who work collaboratively to actualize new features and objectives. Over time, newly interested stakeholders have exerted influence over the toolset. For instance, the San Francisco Bay and Central Valley Joint Ventures contributed funding to enhance the toolset's restoration project tracking capability. Yet, the CWMW remains the final authority on any new developments that might alter the course of the toolset.

Roadmap

The future of EcoAtlas requires a strategy for both the continued maintenance and development of the toolset. With its many components, each moving at different speeds of revision, the EcoAtlas roadmap is neither simple nor immutable. It must be adjusted when facing new opportunities and ideas. However, the stakeholders of the toolset depend upon reliable updates (regular changes) and upgrades (major revisions) as a matter of course. These demands are only likely to increase as the tools are regionalized and are further integrated into programmatic functions.

For the most part, the toolset is highly centralized and singular. The roadmap calls for a strategic regionalization of the tools that meets specific regional needs while maintaining the consistency of the data so it can be easily aggregated. We will re-structure the toolset so that it might be customized for regional and local interests. As local programs -- e.g., Habitat Conservation Plans / Natural Community Conservation Plans (HCPs / NCCPs) -- request custom features, the toolset can be adapted while still retaining common core libraries.

This regionalized approach will in turn entail a hybrid funding model that blends a diversity of funding types and sources. This new funding model will better optimize the relationship between the requisite work to meet user demands and the available budget. It will also provide more resilience by reducing the dependency on a narrow funding portfolio.