Healthy Streams Partnership (HSP)

2010-2013 Triennial Audit

Background

The mission of the Healthy Streams Partnership (HSP) is to promote the protection of California's healthy streams and the restoration of threatened and impaired streams by informing resource management perspectives, decisions and actions. The HSP maintains the Healthy Streams, Rivers and Lakes Portal (Portal) on the MyWaterQuality website. The Portal, which was launched in 2012, currently displays data from water quality monitoring programs funded by the Surface Water Ambient Monitoring Program (SWAMP). In 2012 and 2013, the HSP collaborated with the USEPA's Healthy Watershed Initiative to develop the California Integrated Assessment of Watershed Health (Integrated Assessment) project which was completed in November 2013.

Audit Summary

HSP efforts were evaluated based on the six Performance Measures in the Monitoring Council Strategy. Individual performance measure evaluations and ratings are presented below. Overall, the HSP scored well in the majority of the performance measure categories. Improved integration and analysis of multiple datasets would enhance the work group's ability to identify healthy aquatic ecosystems. The lack of available resources to conduct this effort is a major obstacle.

Individual Performance Measure Analysis

1. <u>Strategy, objectives, design</u>

   The core question addressed by the HSP is the ecological condition, or health, of California's streams, rivers and lakes. This assessment question is addressed for perennial, wadeable streams through by the Perennial Stream Assessment (PSA) monitoring program. Benthic macroinvertebrate (BMI) from the PSA are displayed on the Healthy Streams Portal. Along with BMI data, the Portal also displays toxicity results from samples taken in streams and rivers. Sediment and water column toxicity results are displayed on the Portal in separate maps. Data from other elements of the PSA are currently not well integrated into the site (e.g. algae, physical habitat data, CRAM). More importantly, current assessments only cover a portion of California's streams (approximately 24% statewide). Non-perennial and ephemeral streams, and large rivers are not well represented, partly because assessment tools are lacking for these resource types. As new tools are developed (e.g. ephemeral stream assessment methods) they should be incorporated into the portal. Also, novel approaches to large river assessment could be explored. Examples include fish or bird data from programs such as MAPS or USGS or emerging remote sensing assessment tools for large rivers. No data from lakes are currently displayed on the Portal.

   The Integrated Assessment project addresses the ecological condition question from a watershed perspective. The HSP intends to display Integrated Assessments on the Portal, and to incorporate additional datasets where appropriate to assess watershed health.

   Rating: **Medium.** Component programs rate high, but efforts only partially coordinated to address core assessment question.

2. Indicators and methods

   The indicators utilized by the HSP and displayed on the Portal – BMIs and toxicity - are scientifically validated and include robust QA procedures in relation to the individual monitoring projects they support. The indicators have not been combined in an assessment of ecological condition. However, the Integrated Assessments could potentially provide a framework for this type of coordinated analysis. In particular more work could be done to better connect stressor and condition data to begin understanding causes of less than desirable condition (where they occur)

   If additional datasets are incorporated in the future that use similar indicators (e.g. BMIs or algae) collected under different sampling procedures, it will be necessary to ensure that the datasets are comparable in order to conduct an integrated analysis.

   Rating: **High**

3. Data management

   The BMI and toxicity data displayed on the portal is housed in the California Environmental Data Exchange Network (CEDEN). The Portal does not link to any other databases or display data from other sources. For example, stronger connections to the CRAM database and the USGS Multi-taxa database would provide additional information. In addition, improved basemaps from programs such as the Central Valley Flood Protection Program and the California Aquatic Resources Inventory would provide context for some of the condition data currently displayed by the portal. The HSP intends to make geospatial datasets developed for the Integrated Assessments publically available via the Portal or other appropriate website.

   Rating: **Medium**. Connections with CEDEN are good, but connections with other priority databases would allow for a more comprehensive presentation of relevant information

4. Consistency of assessment endpoints

   The Portal displays three assessment endpoints – BMIs, water column toxicity and sediment toxicity. Each assessment endpoint is displayed on a separate map and the three measures are not integrated into a broader assessment.

   The Integrated Assessments are not currently displayed on the Portal, but potentially could be used as a framework for a broader, coordinated assessment. The assessments could be further refined by adding additional indicators, incorporating thresholds, weighting, or other procedures.

   Rating: **Medium**

5. Reporting

   The Portal maps are representations of monitoring data from the various monitoring programs. The maps are interactive; they allow the user to zoom into an area of interest and to identify additional information about the sites. The toxicity data are linked to CEDEN and updated regularly; the BMI data are shown on static maps.

   Rating: **Medium**

6. Program Sustainability

   There are no funds available for the work group to conduct its efforts. The Portal was funded by a contract with the State Water Board that has been fully expended. The Integrated Assessment project was a USEPA funded effort that directed funds to an environmental consultant (Cadmus). HSP members participated in the effort on a voluntary basis and were not compensated for their time.

   Rating: **Low**

Recommended Actions

- Enhance the Healthy Streams Portal with the following additional items:
  - Display CA Integrated Assessment results using an interactive, map-based interface
  - Add an interactive map to display algae data
  - Incorporate data from other monitoring programs that assess aquatic ecosystem condition
  - Pursue relationships to improve availability of information on non-perennial and ephemeral streams, and large rivers
  - Improve base mapping through partnership with other mapping efforts in the State
  - Add data to assess aquatic ecosystem condition in lakes
- Build on framework established by the California Integrated Assessment of Watershed Health:
  - Integrate with other multimetric assessments of aquatic ecosystem health (e.g. DWR Water Plan, regional watershed report cards, etc.)
  - Refine the assessments by adding additional indicators, incorporating thresholds, weighting, or other methods
- Pursue new partnerships and participation with programs not currently well represented on the HSP
  - Department of Fish and Wildlife Lake and Streambed Alteration Program or others