



WPDG Core Element Monitoring and Assessment: *Level 1-2-3 Framework*

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EPA Region 9 WPDG Webinar
March 2, 2023



Today's Presentation

- Level 1-2-3 Monitoring Framework Overview
- Overview of select tools
- California WRAMP Framework



What is the status of our wetlands?

Are things getting better or worse?

**What are the major stressors – human,
climate, other?**

Are our management programs effective?

How can we improve?

**Where should we target protection of our
resources?**

Clean Water Act

- Objective: To restore and maintain the chemical, physical, and biological integrity of our nation's waters
- Requirement: States and tribes required to report on the condition of waters of the U.S. [Section 305(b)]
- WPDG goal: development or refinement of effective wetland programs [Section 104(b)(3)]

Core Element #1

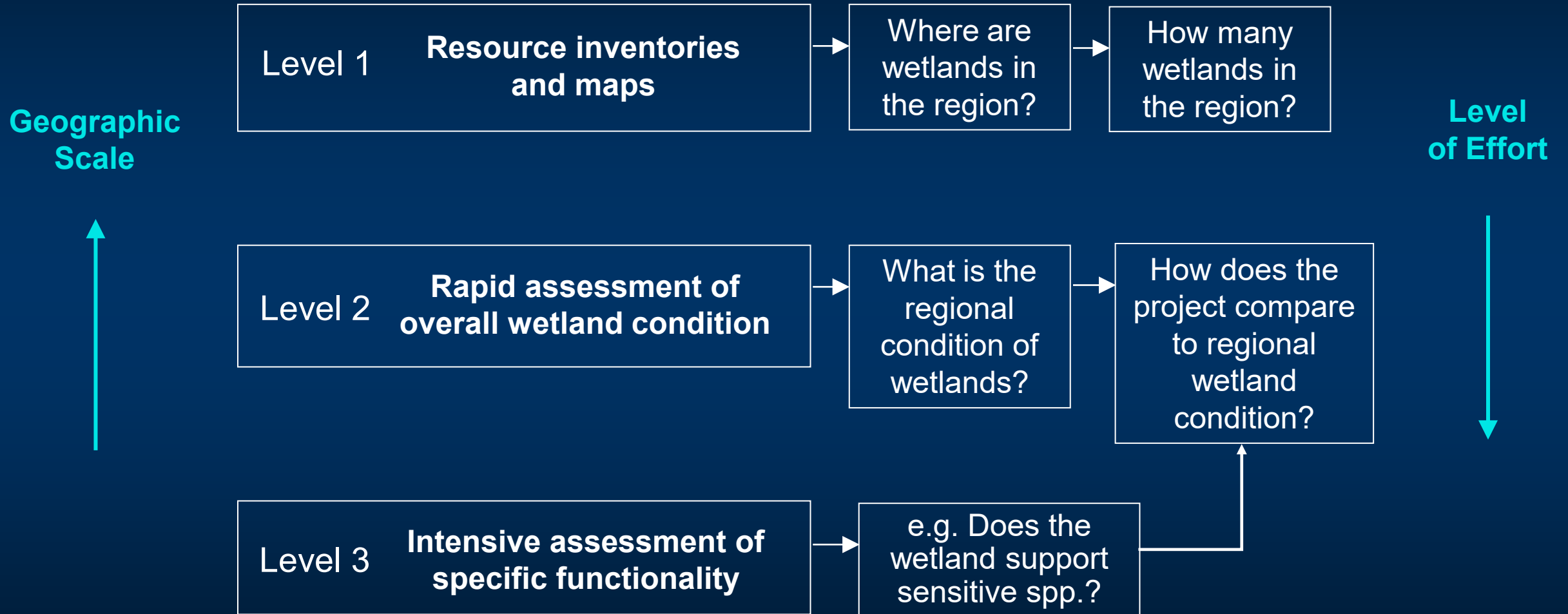
- Set 1: Goals
 - ID program decisions & LT env outcomes that will benefit from monitoring
- Set 2: Strategy Development
 - Methodology
- Set 3: Strategy Refinement
 - Assess effectiveness of monitoring program

What is Level 1-2-3?

Information gathered at three distinct spatial scales and LOE that is generally used together to assess aquatic resources and watersheds

- Level 1 **map-based inventories** of aquatic resources including their distribution and abundance of aquatic resources.
- Level 2 **rapid, field-based assessments** that provide data on overall aquatic resource condition.
- Level 3 usually **site-specific quantitative measures** of specific resources

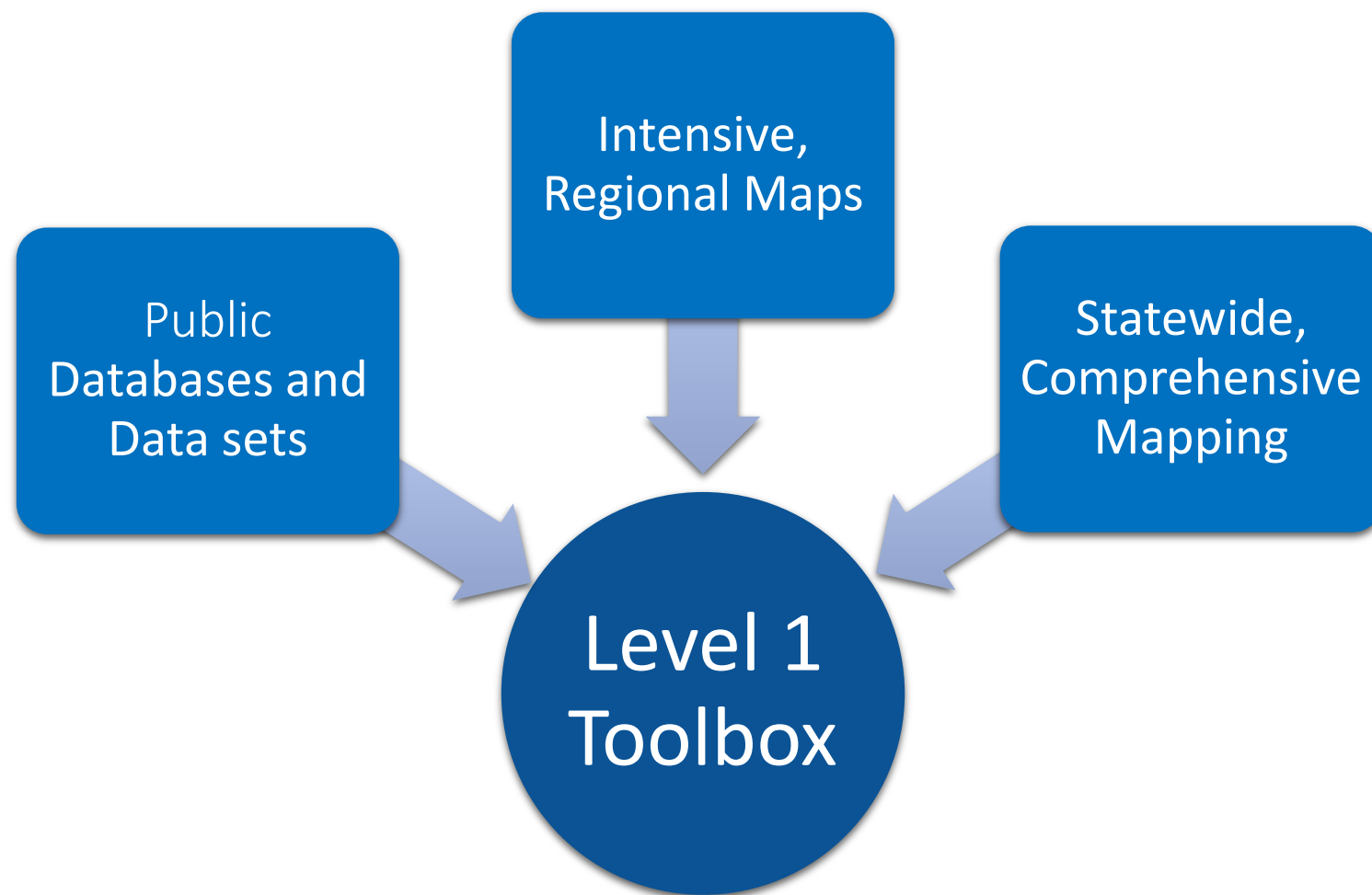
Three-tiered Monitoring Framework



Why Level 1?

- Provide background/context on aquatic resources in and around a proposed project site
- Preliminary indications of potential restoration areas
- Insight into general condition of a watershed or area of interest, historical and cumulative losses
- Assessment of watershed stressors

Level 1 Tools



Available L1 Tools

California Aquatic Resources Inventory (CARI)

The screenshot shows the EPA website's 'National Aquatic Resource Surveys' section. The 'StreamCat' tool is highlighted, with a description of its data and a map of the United States showing urbanization levels. The map is titled 'Percent Urbanization Within Watershed' and has a legend with 'High: 100' (orange) and 'Low: 0' (blue).

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National Aquatic Resource Surveys

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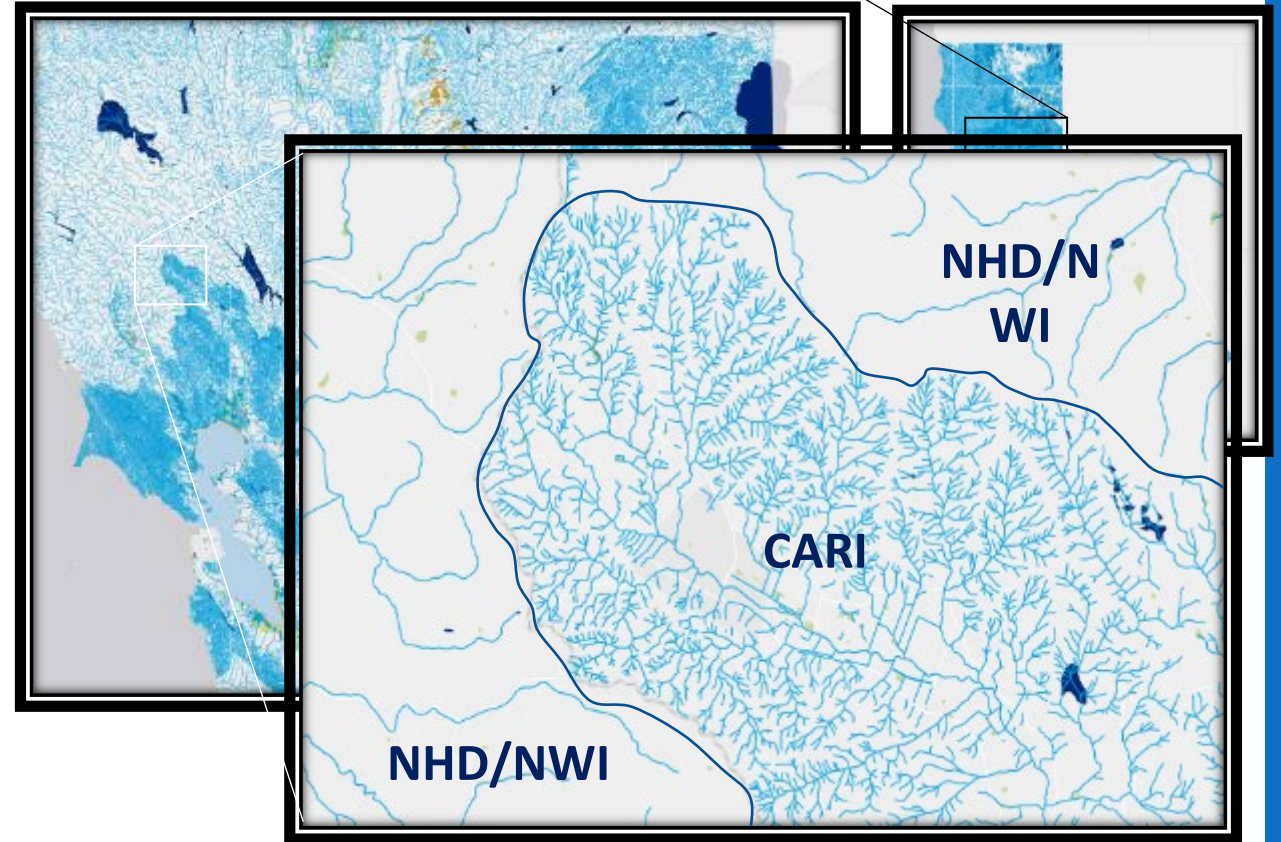
StreamCat

EPA's Office of Research and Development (ORD) has developed the Stream-Catchment (StreamCat) dataset, an extensive collection of landscape metrics for 2.6 million streams and associated catchments within the conterminous U.S. StreamCat includes both natural and human-related landscape features. The data are summarized both for individual stream catchments and for cumulative upstream watersheds, based on the National Hydrography Dataset Plus Version 2 geospatial framework.

StreamCat data are being utilized to develop national maps of aquatic condition and watershed integrity, and can be used to model and predict reference condition for the [National Rivers and Streams Assessment \(NRSA\)](#). The data will also be useful to states that are conducting similar assessments. StreamCat data, which are available to the public for [download](#), provide an important tool for stream researchers and managers to understand and characterize the Nation's rivers and streams.

Percent Urbanization Within Watershed

High: 100
Low: 0

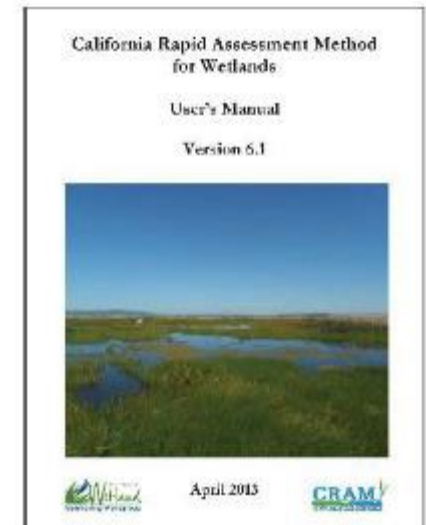
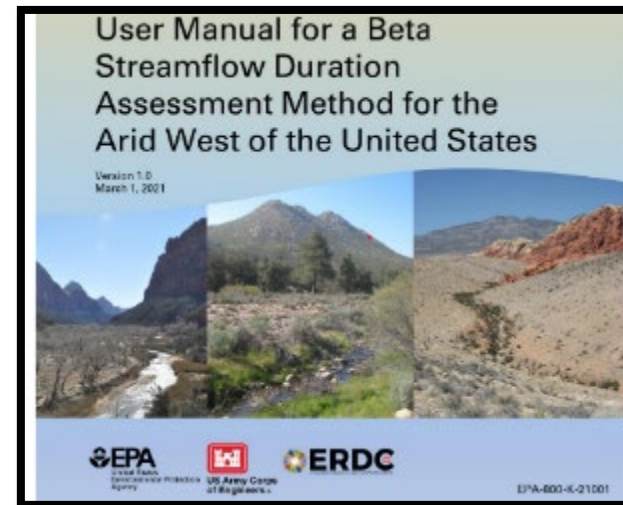
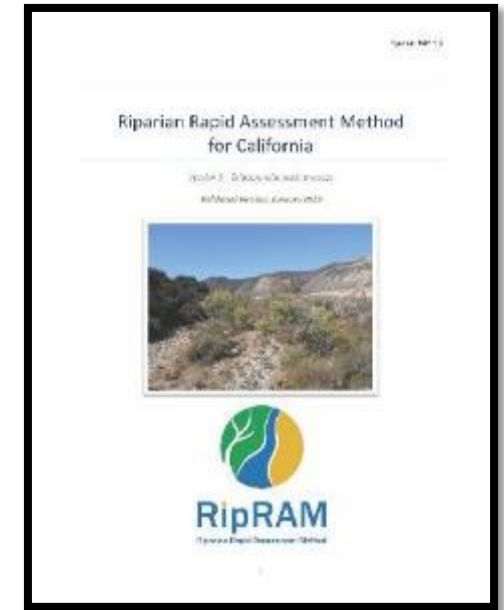
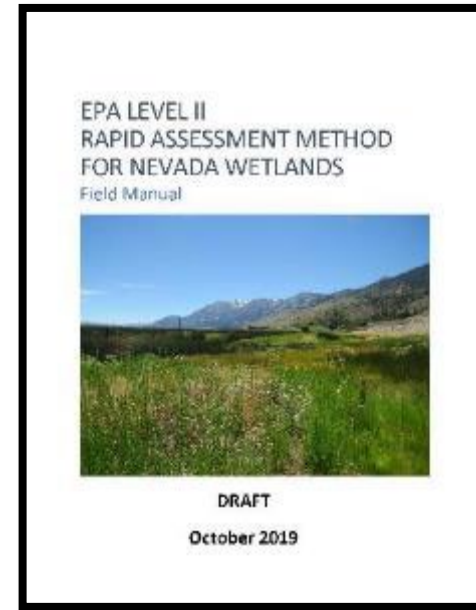


Why Level 2?

- RAPID, field-based index of overall wetland condition using *simple indicators*
- These assessments are based upon identifying common stressors - road crossings, encroachment/development, surface discharges, ag impact....
- Used to monitor and report on the cumulative condition of wetlands in a watershed, as well as identify sites where more intensive monitoring (L3) is needed
 - Enables comparisons across projects and time
 - Can be used to evaluate the performance of compensatory wetland mitigation and other restoration projects [Ambient Condition]

Available L2 Tools

- **OTHER AVAILABLE RAMS:**
- **Gila River Indian Community**
- **AZ CRAM**



Why Level 3?

- THERE ARE A LOT OF DATA AND TOOLS AVAILABLE TO ASSESS CONDITION!!!
- The trick is use/compile the right data/tools to answer the questions **relevant to your decision**

Biological
assessment

Physical
habitat

Hydrologic
condition

Water
chemistry

Risk &
vulnerability

Some Standardized Level 3 Tools



SWAMP Bioassessment Procedures 2007

Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California

February 2007



www.waterboards.ca.gov/swamp

Development of an Assessment Framework for Dry Ephemeral and Intermittent Streams in California and Arizona



EPA Grant Agreement 99165301

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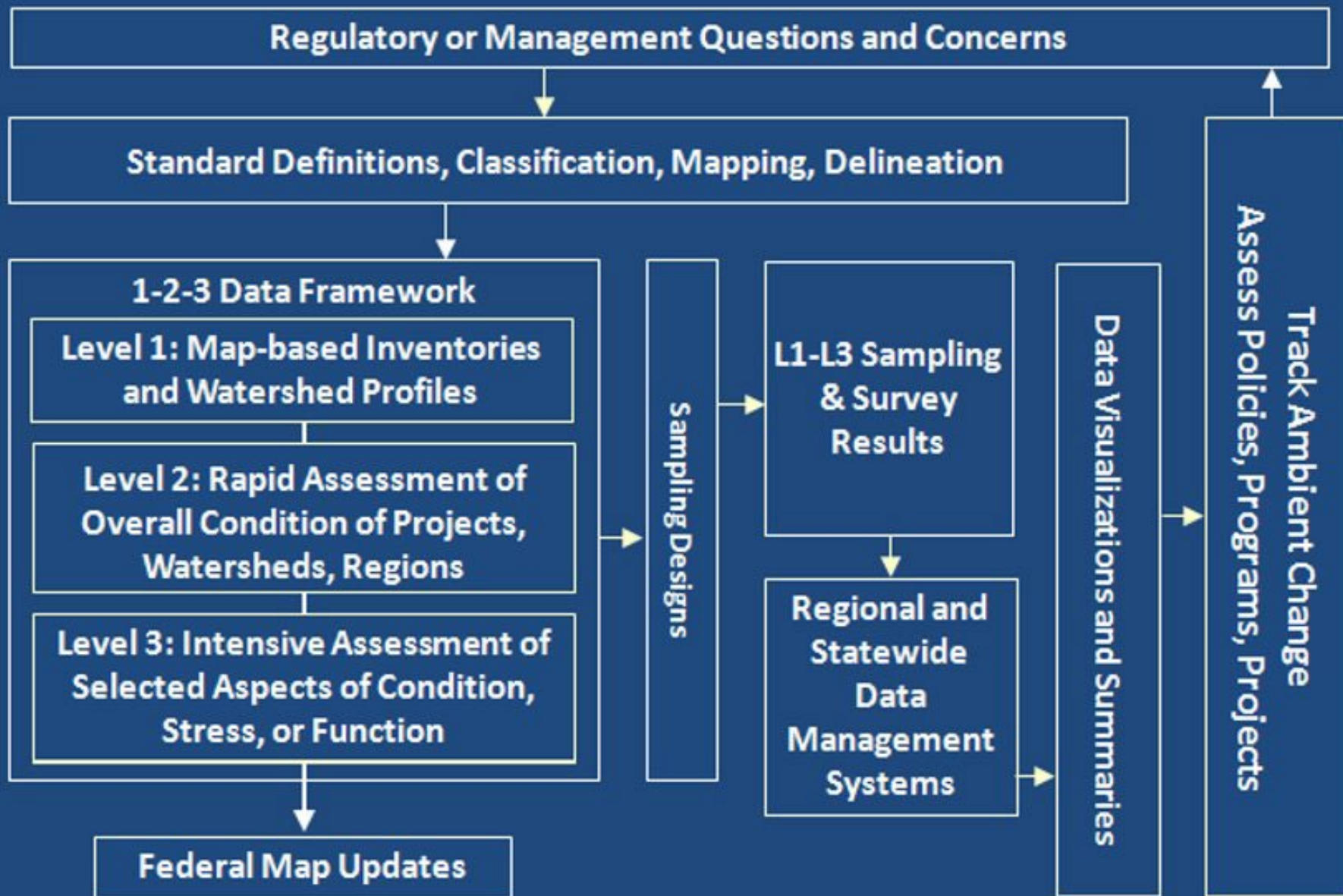


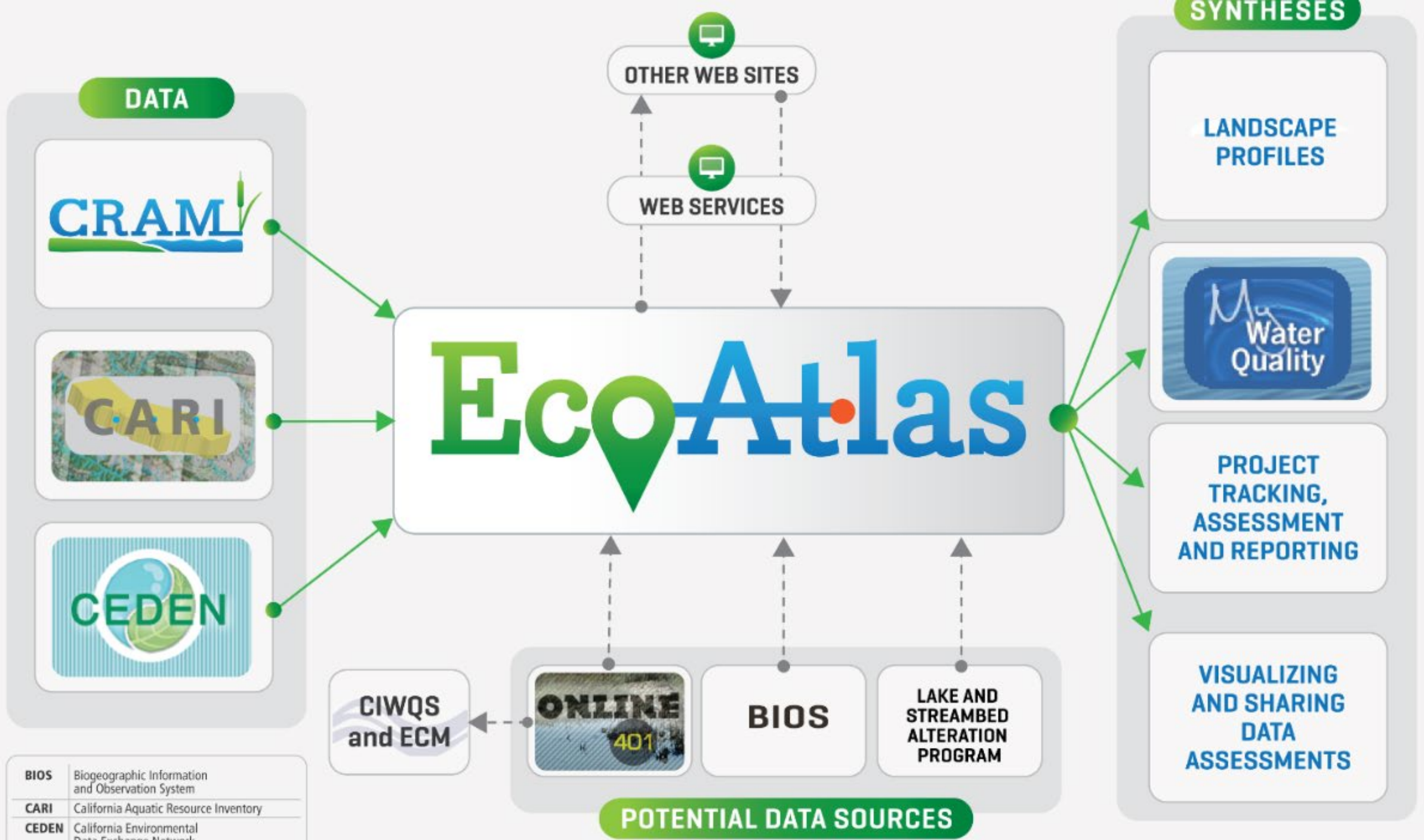
California Estuarine Wetland Monitoring Manual (Level 3)

July 2015

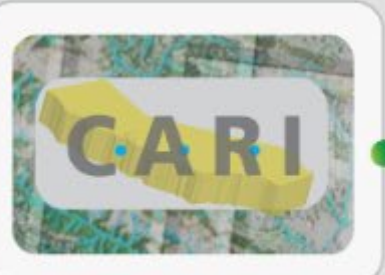
The Bay Foundation
Southern California Coastal Water Research Project
California State University, Channel Islands

WRAMP Framework





DATA



EcoAtlas

SYNTHESES

LANDSCAPE PROFILES



PROJECT TRACKING, ASSESSMENT AND REPORTING

VISUALIZING AND SHARING DATA ASSESSMENTS

OTHER WEB SITES

WEB SERVICES

CIWQS and ECM



BIOS

LAKE AND STREAMBED ALTERATION PROGRAM

POTENTIAL DATA SOURCES

BIOS	Biogeographic Information and Observation System
CARI	California Aquatic Resource Inventory
CEDEN	California Environmental Data Exchange Network
CIWQS	California Integrated Water Quality System