# STRESSOR IDENTIFICATION

WHY STRESSOR IDENTIFICATION?

- **Need to determine site-specific explanations when bio-objectives are not achieved**

- **Multiple approaches exist, but have not been vetted in California**

- **Goal is to provide recommendations for future use**
  - **Practical guidance to stakeholders and regulators alike**

STRESSOR IDENTIFICATION TASKS

- **Create a partnership with EPA**
  - **Causal Analysis/Diagnostic Decision System (CADDIS)**

- **Identify three test case studies as the basis for our recommendations**

- **Develop Guidance Document**

EPA's CADDIS Program
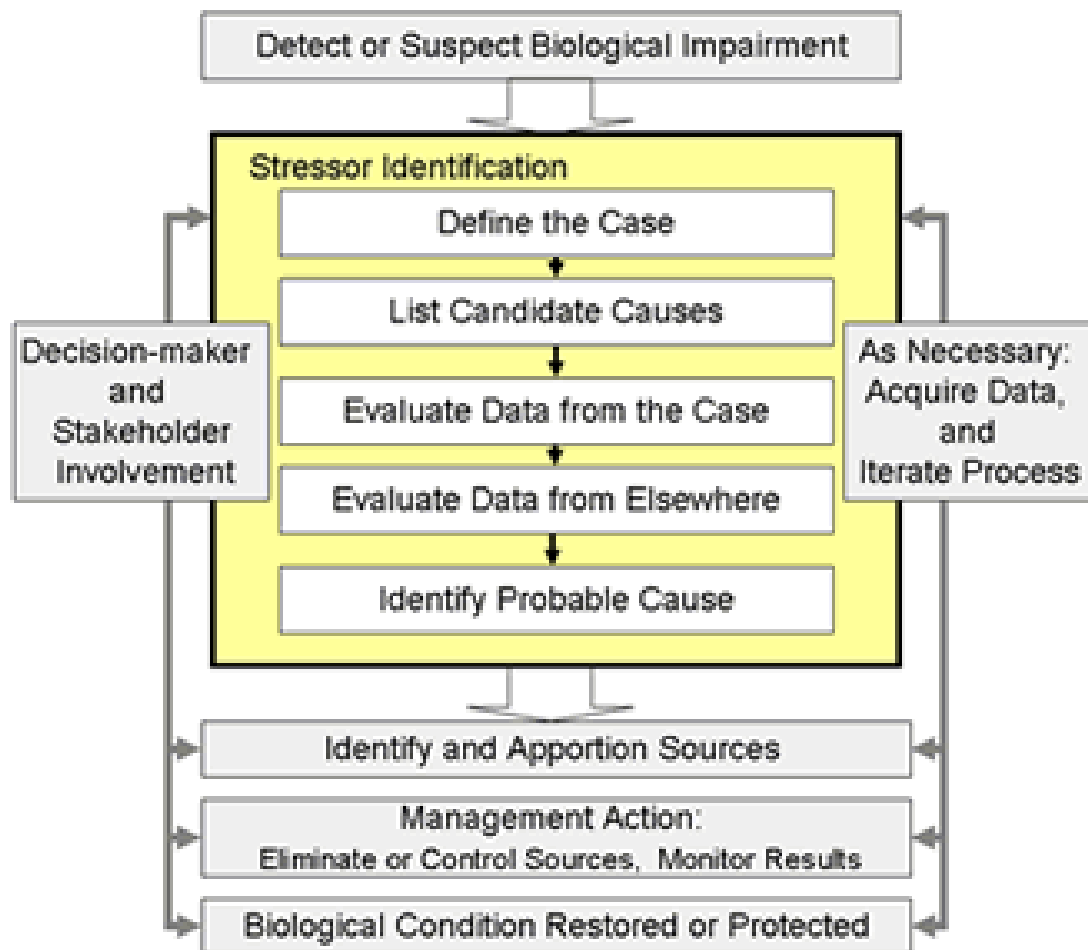
TYPES OF EVIDENCE

- **Spatial/Temporal Co-occurrence**
- **Evidence of Exposure of Biological Mechanism**
- **Causal Pathway**
- **Stressor-Response Relationships from the Field**
- **Manipulation of Exposure**
- **Laboratory Test of Site Media**
- **Temporal Sequence**
- **Verified Predictions**
- **Symptoms**

Data From California:
Sediment intolerant vs. Sediment tolerant

Epeorus

Caenis
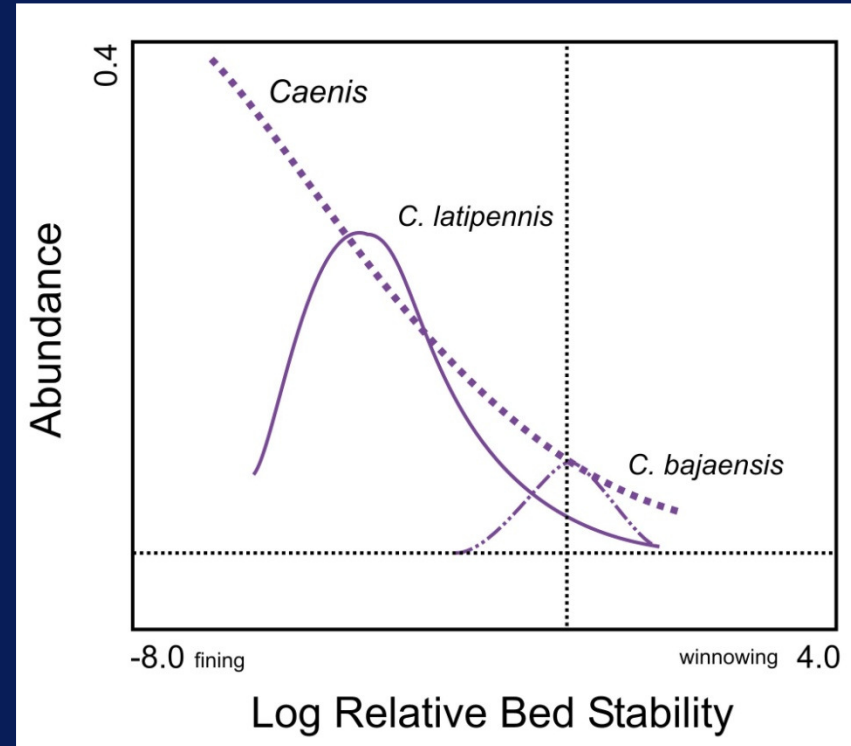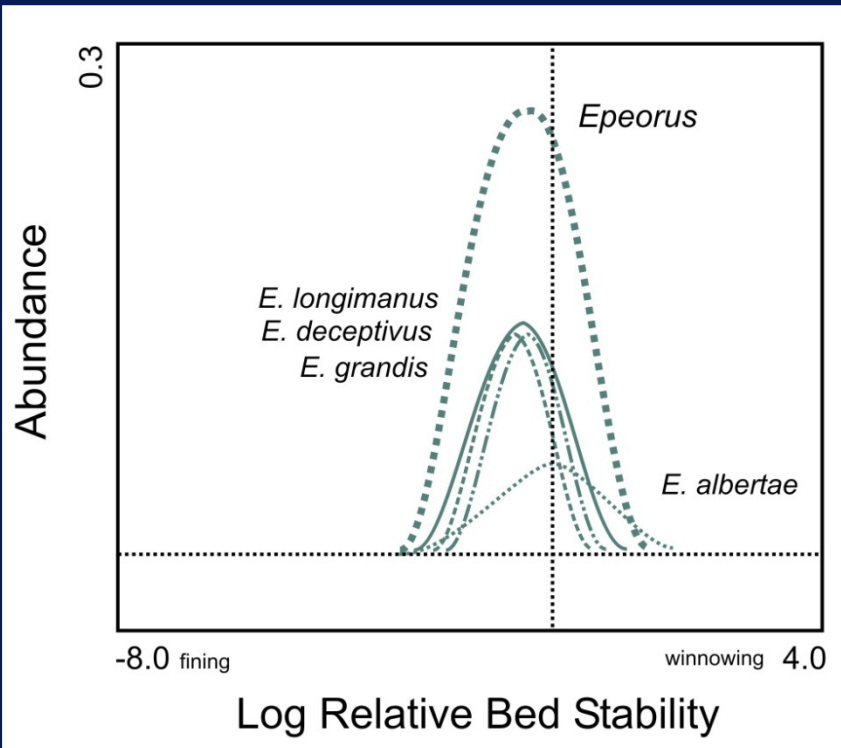
Getting the Most of Our Three Cases

- **Current strategy is to diversify our applications**

- **Three types of stakeholders**

- **Three types of stressors**

- **Three parts of the state**

INFORMATION MANAGEMENT

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- **State currently has multiple data systems**
  - Discharge vs. ambient data

- **Over $2M invested into information management for ambient data thus far**
  - Another $0.5M this year alone

- **Goal is to have a transparent and standardized way to submit, store, access, and analyze bioassessment data**

STATE DATA MANAGEMENT SYSTEMS

- **Discharge data – external programs**
  - *California Integrated Water Quality System (CIWQS)*

- **Ambient data – internal programs**
  - *Surface Water Ambient Monitoring Program (SWAMP)*

- **Ambient data – external and internal programs**
 - *California Data Exchange Network (CEDEN)*

TASKS FOR INFORMATION MANAGEMENT

- Build upon the existing state infrastructure

- Improve data sharing capacity
  - Data management crosswalks
  - Regional Data Centers

- Develop information delivery

SOME BENCHMARKS TOWARDS SUCCESS

- **Philosophically focused on raw data**
  - **Including QA information**

- **Standardized data formats**
  - **Have templates, but can be software independent**

- **Online data entry checkers**
  - **Help desks**

- **Standardized taxonomic manual**
  - **Taxonomists unite!**

- **Multiple export formats**
  - **Useful for both regulated and regulatory users**

State's Surface Water Ambient Monitoring Program: Data Flow
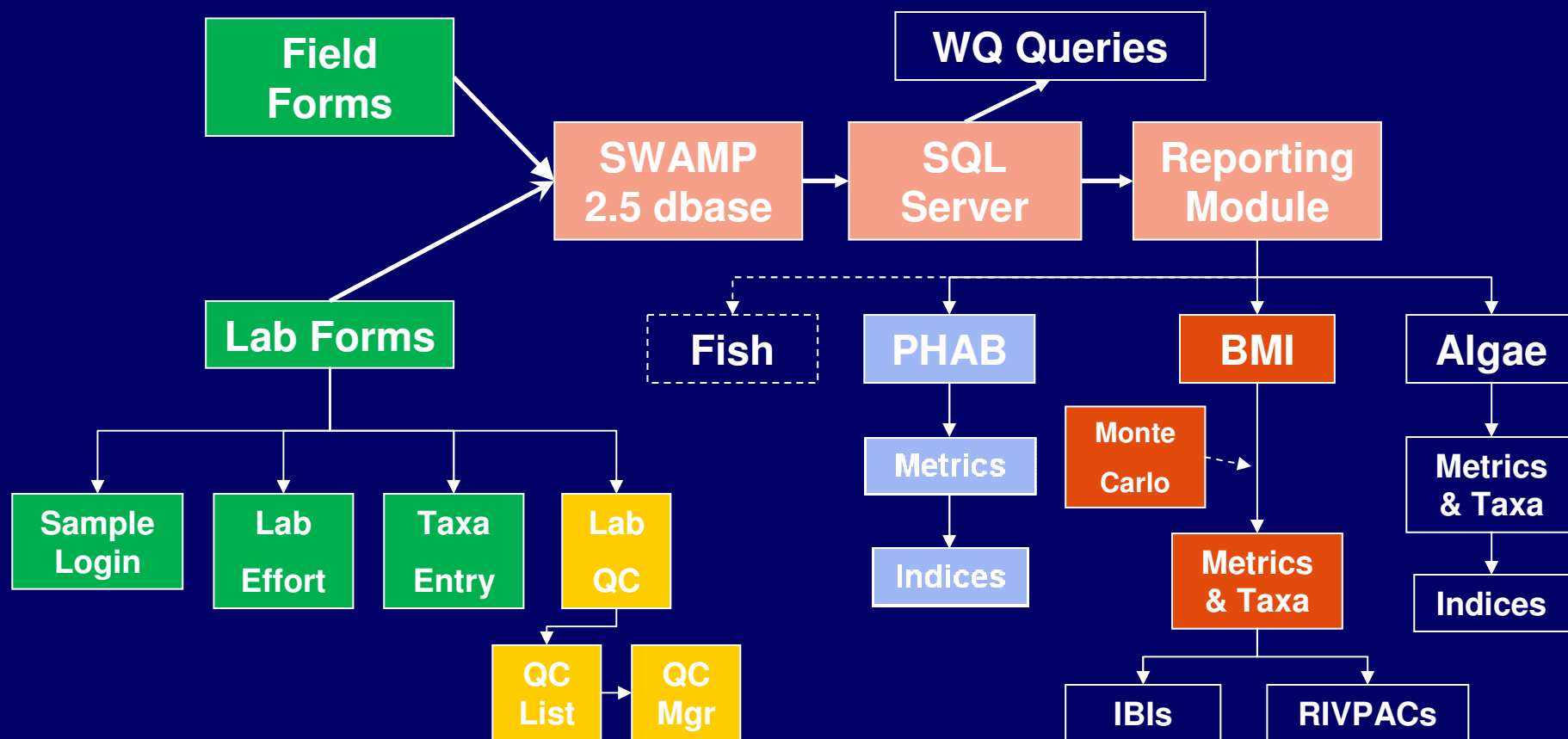
NEXT STEPS

- **CEDEN launched in June**
  - **Currently only chemistry and toxicity**

- **Define the information products**
  - **Working with regulatory and regulated data users**

- **Develop biological and habitat data storage and functions**