

## California Rapid Assessment Method for Wetlands

### Interpreting CRAM Scores



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### Index Score Represents Overall Wetland Condition

- The CRAM Index Score combines indicators of all Attributes to represent overall condition, which is related to functional capacity or wetland "health."
- CRAM Index Scores are analogous to:
  - Apgar Scores (newborn infant health)
  - Dow Jones Industrial Average (DOW)
  - Gross National Product (GNP)
  - Grade Point Average (GPA)

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### Index Scores Alone Can Be Misleading

- Identical Index or Overall Scores can be derived from different arrays of Attribute Scores
  - Must refer to Attribute Scores (and sometimes to Metric Scores) to interpret Index Scores

Landscape - Buffer	Hydrology	Physical Structure	Biotic Structure	Index Score
50	65	42	68	56
64	48	37	76	56

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Index	Landscape/ Buffer	Hydrology	Physical Structure	Biotic Structure
70	58	58	66	89

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Index	Landscape/ Buffer	Hydrology	Physical Structure	Biotic Structure
72	83	100	50	53

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### Attribute Scores Relate to Expected Beneficial Uses

- Each Attribute score represents a suite of expected functions; the score indicates the relative level of those functions provided by the wetland:
  - e.g., the Landscape and Buffer Attribute represents ecological connectivity at landscape scale, ability of the buffer to mediate external stressors, etc.
  - e.g., the Hydrology Attribute represents the achievement of (or departure from) natural hydrological pattern, recharge potential, peak stage reduction, water quality maintenance, etc.
  - e.g., the Biotic Structure Attribute represents habitat diversity, biological integrity, food web support, etc.

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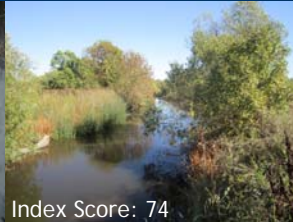
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### Scores and Stressors Identify Causes of Condition Reduction

- As CRAM scores decrease, the wetland's associated capacity to provide benefits is also expected to decrease.



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### Scores and Stressors Identify Causes of Condition Reduction

- Attribute and Metric scores help to indicate stressors that are adversely affecting wetland condition and hence assumed function.
  - Stressor Checklist plus Metric scores help identify possible causes for low Attribute scores and related effects on wetland function.
- Information beyond the CRAM assessment is required to validate relationships among scores and functions or stressors.

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### Score can be Affected by Wetland Size and Complexity

- Studies indicate that the diversity within and levels of services provided by a wetland increase with its structural complexity and size.
- For each wetland class, CRAM tends to allocate higher scores to larger, more complex wetlands.
- CRAM reduces size bias concerns by establishing AA size guidelines for each wetland class.

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### Scores Indicate Differences in Wetland Condition (with Training)

- Among-team comparisons during development of the Riverine and Estuarine modules indicated that:
  - Index scores that differ between wetlands by 6 points or more indicate a real difference in wetland condition.
  - Attribute scores that differ between wetlands by 10 points (depending on attribute) indicate a real difference in wetland condition at the attribute level.
- Achieving this precision level requires adequate practitioner training to assure consistent metric interpretation.

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### CRAM Scores Emphasize Watershed-Level Decision-Making

- CRAM assessments are well-suited for characterizing patterns among aquatic resources in a landscape or watershed context.
- CRAM assessments also enhance watershed characterization, impact assessment, mitigation planning, and monitoring.
- CRAM information can enhance any context in which knowing the condition of the aquatic resource is important for decision-making.

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