# SFB Cluster Analysis

Ananda Ranasinghe

AnandaR@sccwrp.org

SFEI Benthic Work Group

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# Road Map

- ## The main question
  - What are the SFB habitat-related assemblages?
  - Publish the answer in a peer-reviewed journal

- ## Background
  - Six California habitat-related assemblages were identified previously

- ## SFB analysis method details

- ## Question for you
  - What additional choices should we explore?

# Why Identify Habitats?

- Needed for benthic index development

- Species composition and abundance vary naturally from habitat to habitat

- Therefore,
  - Biological expectations for reference conditions, and
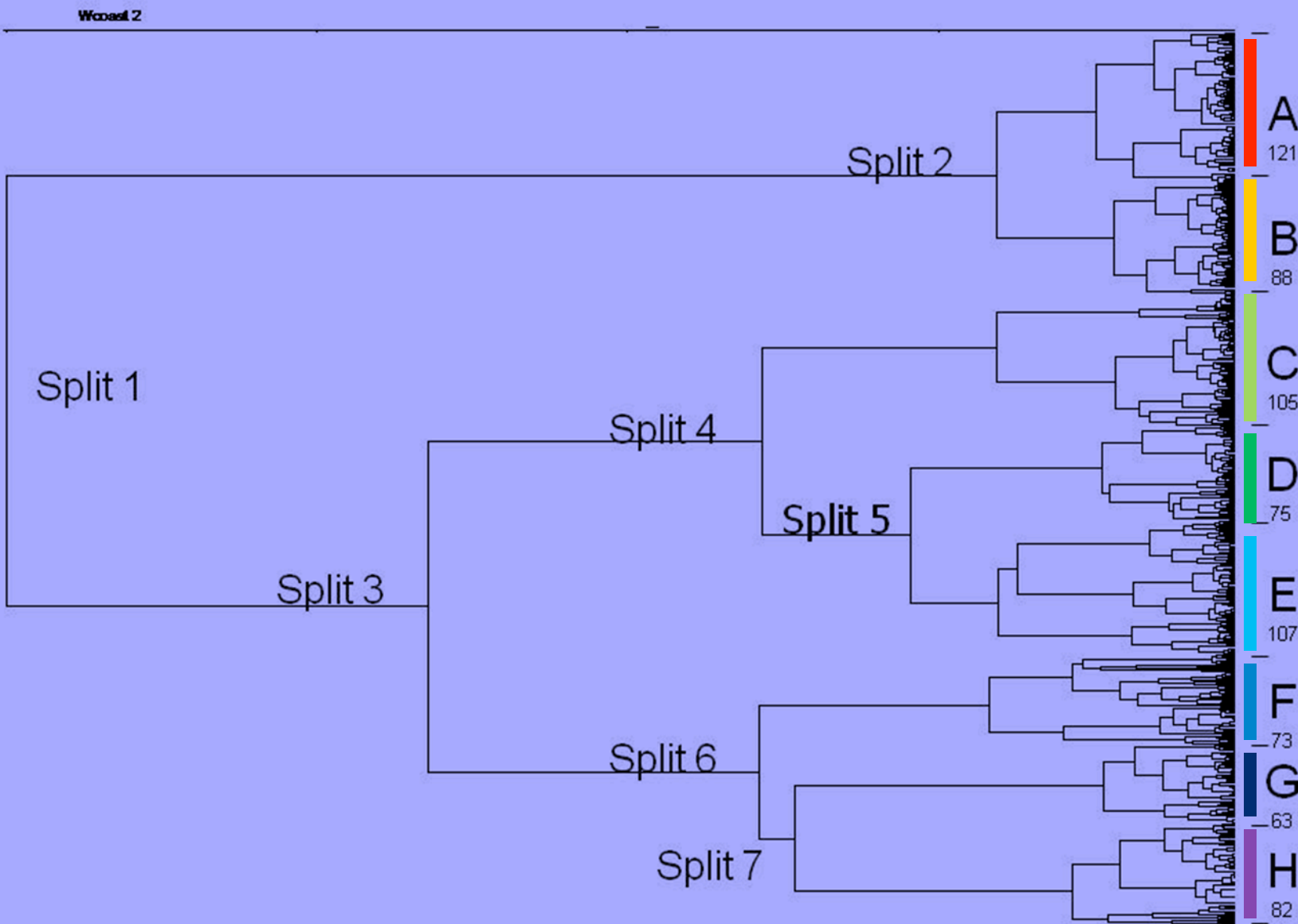  - Measurements of deviation from reference
  - Should vary accordingly

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# Background

- Six California habitats were identified previously
  - Analyzed west coast bay and estuary data
  - $0.1m^2$ samples screened through 1 mm sieves
  - Most SFB samples are $0.05m^2$ samples screened through 1 mm sieves

- Same methods for this study (so far)
  - Except for sieve size and sample area
  - Many more data available

# West Coast Bay & Estuary Assemblages

## Dendrogram of 714 samples using 881 species abundances

# California Habitat-Related Benthic Assemblages

| Habitat | Description |
|---------|-------------|
| C | Southern California marine bays* |
| D | Polyhaline central San Francisco Bay* |
| E | Estuaries and wetlands |
| F | Very coarse saline sediments |
| G | Mesohaline San Francisco Bay |
| H | Oligohaline and limnetic waters |

*: SQO benthic indices calibrated and validated

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# SFB Cluster Analysis Methods 1
## Data Reduction

| Description | N |
| --- | --- |
| All samples | 6,670 |
| 1 sample per visit | 2,150 |
| DWR: Select only 2000, 2007, and 2008 samples | 908 |
| Drop small or polluted samples (BPTCP: $0.018m^2$, $0.0075m^2$) | 883 |
| Select only July-October samples | 501 |

# SFB Cluster Analysis Methods 2

| Option | Choice |
| --- | --- |
| Sample min. abundance or no of taxa | None |
| Species min. occurrences | 2 |
| Abundance transformation | Square root |
| Abundance standardization | Column mean of values > 0 |
| Dissimilarity Index | Bray-Curtis |
| Step-across adjustment | BCDI > 0.8 |
| Sorting | Flexible β= -0.25 |

# Today's Questions

- What are the conclusions from today's analysis?

- What additional analyses should we explore?

- Meet again?
  - Review analyses?
  - Plan writing?