

BIGHT 13

TRASH FROM THE RIVERS TO THE SEA

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TALKING POINTS

- What management questions was the project designed to answer?
- What environments were monitored?
- What were your metrics and how did you target them?
- Other Monitoring considerations
- If you could do this again, how would you do it differently?

BACKGROUND

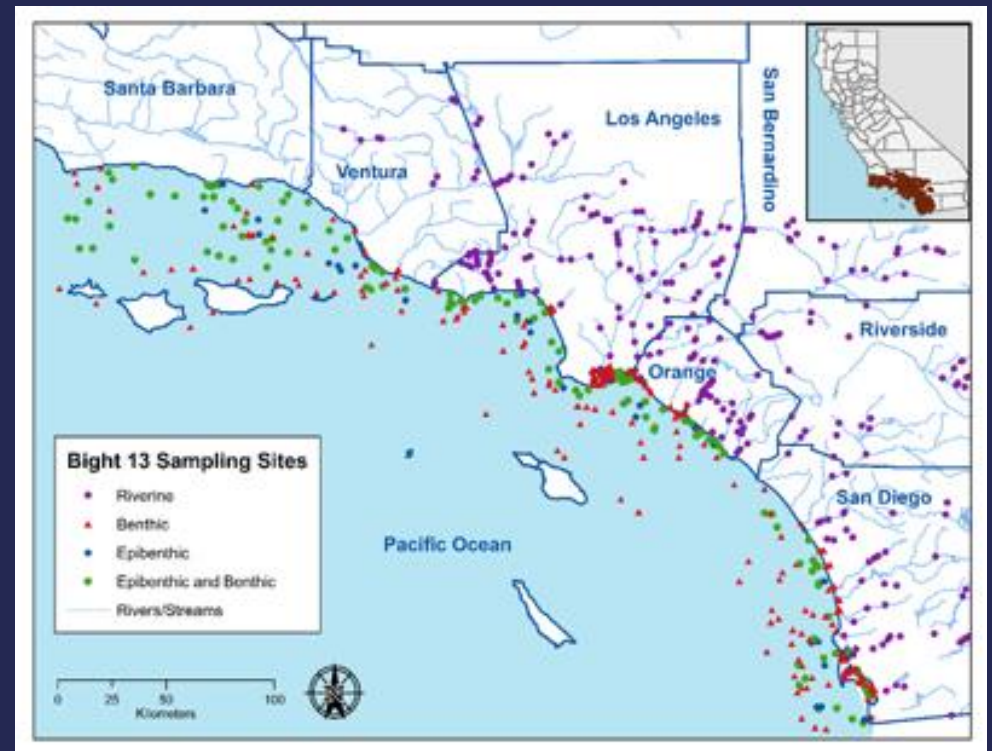
- Bight Regional Surveys have been done about every 5 years starting in 1994
- Epibenthic debris has always been a component
- No comprehensive survey of trash and debris on a multi-habitat, regional scale has ever been done

QUESTIONS

- Does the extent and magnitude of trash and marine debris vary among freshwater and marine habitats?
- Does the extent and magnitude of trash and marine debris vary over time?
- What types of trash and marine debris are most extensive or abundant?

THREE HABITATS

- Rivers and Streams
- Ocean Seafloor Surface
- Ocean Seafloor Sediments



APPROACH TO RIVERS AND STREAMS

- 273 sites were surveyed from 2011-2013
- Stratified Random Design
- 100 foot swath
- All trash was counted and classified into categories



APPROACH TO SEAFLOOR SURFACE

- 164 sites were surveyed by trawl
- Stratified Random Design
- Net with 3.8 cm body mesh and 1.3 cm cod-end mesh towed for 10 minutes
- Debris was categorized and enumerated



APPROACH TO SEAFLOOR SEDIMENT

- 358 sites
- Stratified Random Design
- Sediment Grab
- Plastic debris between 1 and 4.75mm was enumerated



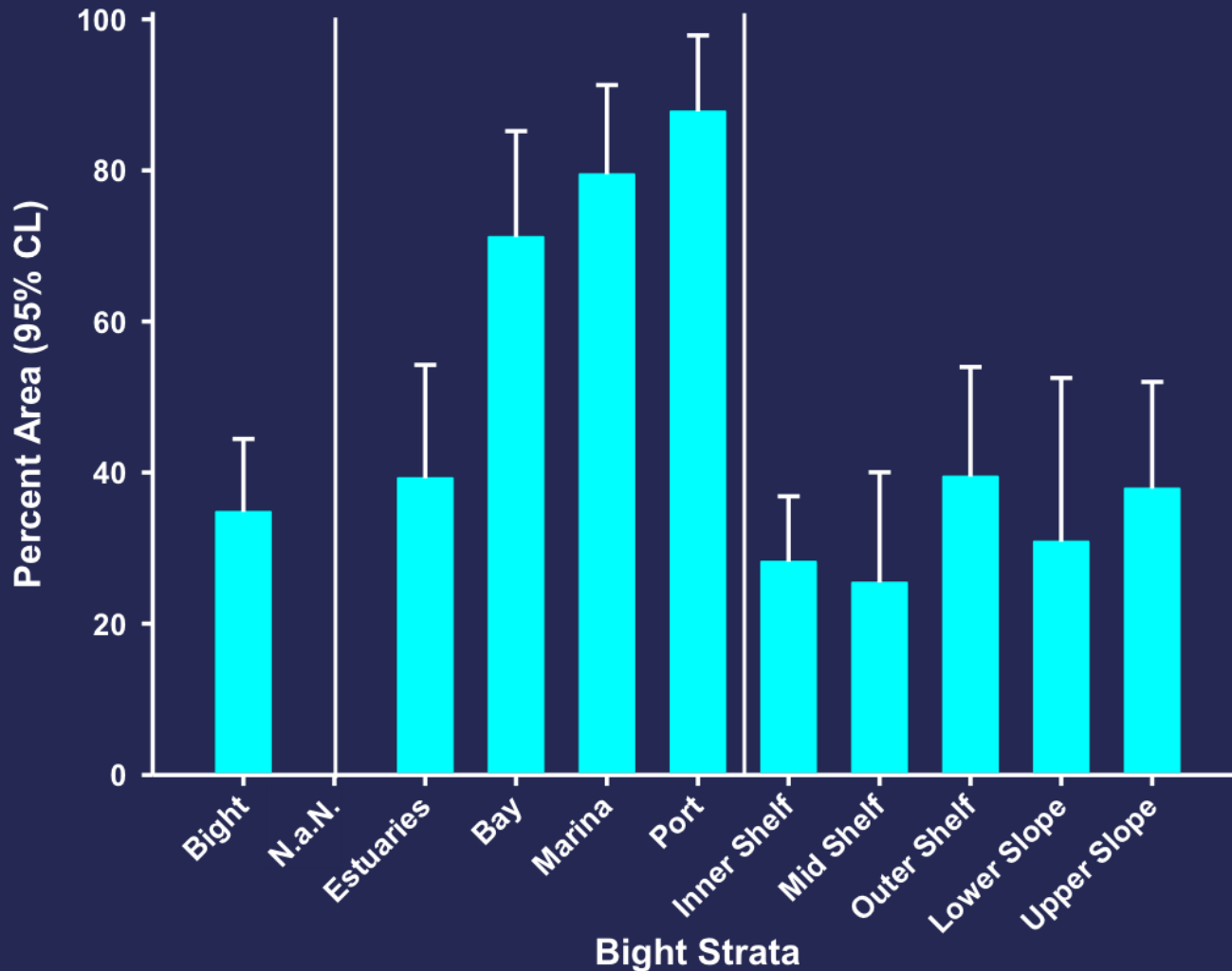
METRICS

- What types of trash (counts)
- Extent of trash (% stream miles/area)
- Trends

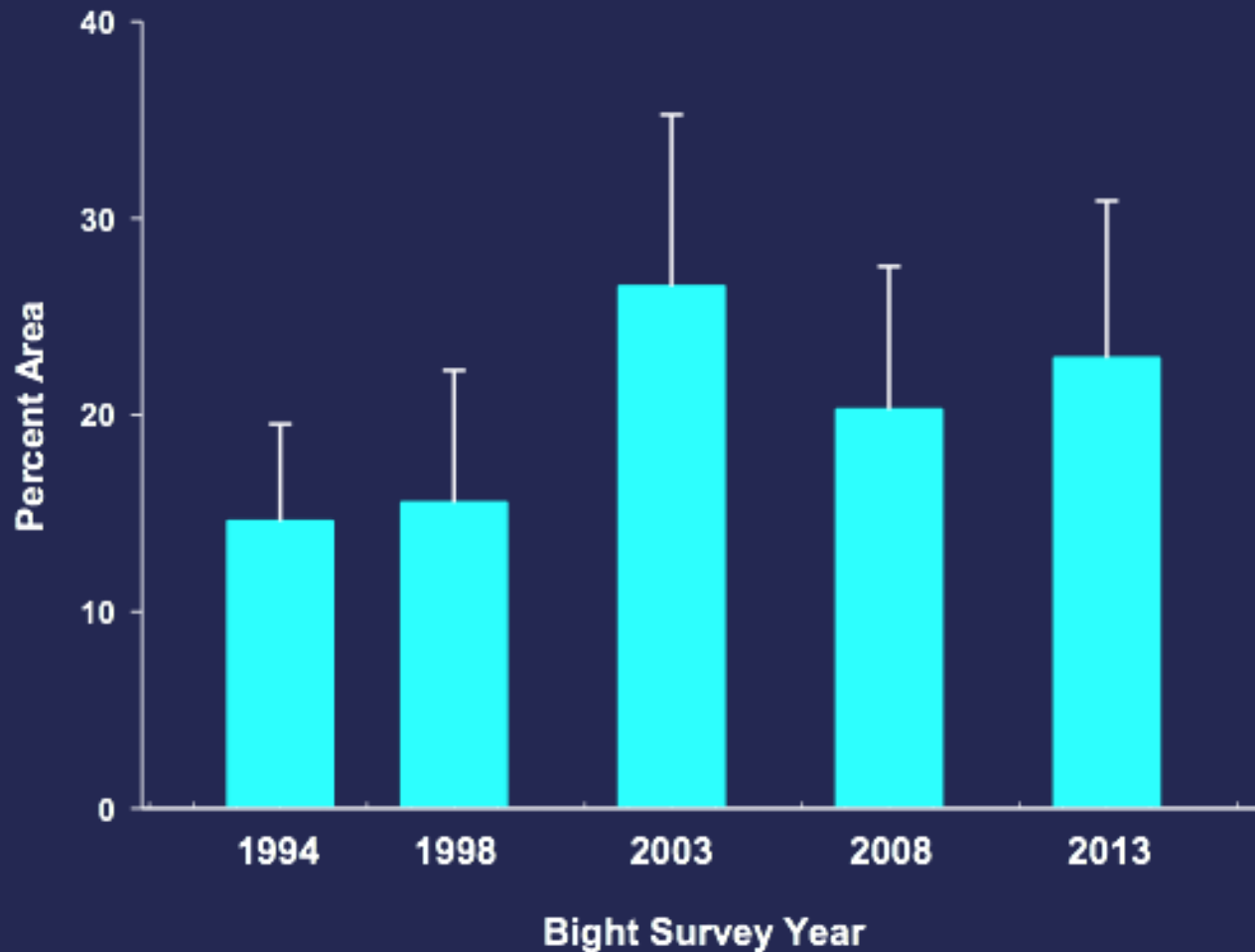
WHAT TYPES OF TRASH

| Rank | Debris Item | % Total | % Cumulative |
|------|-------------------------|---------|--------------|
| 1 | Wrappers | 14.8 | 14.8 |
| 2 | Bags | 14.1 | 28.9 |
| 3 | Fragments/pieces | 9.0 | 37.9 |
| 4 | Styrofoam pieces | 8.8 | 46.6 |
| 5 | Glass pieces | 6.7 | 53.3 |
| 6 | Sports balls | 6.1 | 59.4 |
| 7 | Cigarette Butts | 5.3 | 64.7 |
| 8 | Paper and cardboard | 5.2 | 69.8 |
| 9 | Plastic Bottles | 3.7 | 73.5 |
| 10 | Concrete/Asphalt debris | 2.1 | 75.7 |

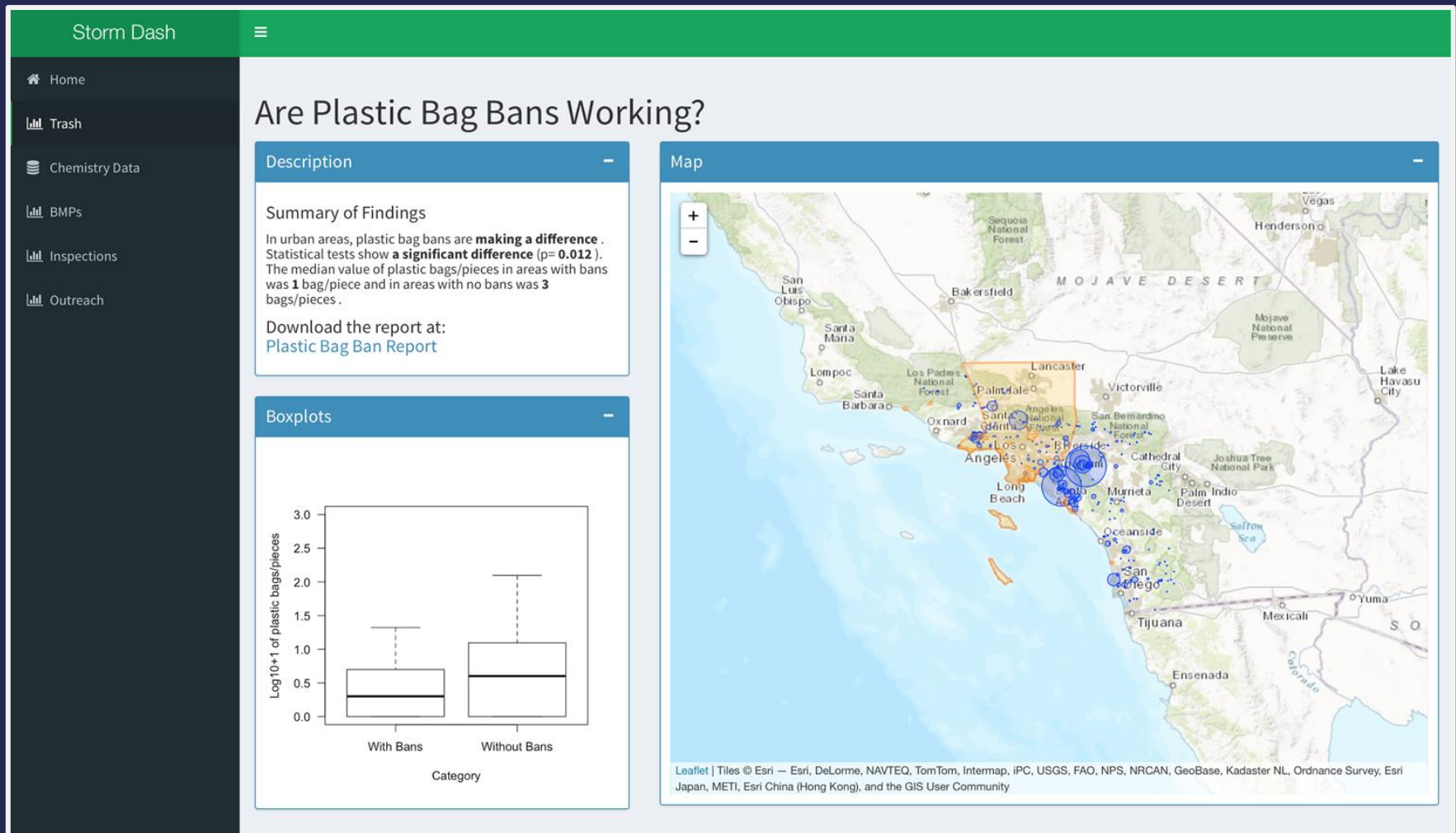
EXTENT OF TRASH



BIGHT SEAFLOOR SURFACE DEBRIS NOT GETTING BETTER



PLASTIC BAG BAN AREAS HAD LOWER NUMBERS OF BAGS/PIECES



WHAT WAS DONE

- Identified a path that allowed for:
 - Regional assessment
 - Helps put local data in a regional context
- We now have standardized methods
 - 20+ organizations know how to measure debris in three habitats
- Baseline for the future

WHAT WOULD WE DO DIFFERENTLY

- The study design for monitoring of trash and marine debris should be optimized
- Establish the linkage to sources, and quantify transport, accumulation and loss rates
- Different measurement methods should be evaluated, balancing precision of information vs. cost