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







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



Bight Survey Year

PLASTIC BAG BAN AREAS HAD LOWER NUMBERS OF BAGS/PIECES

Storm Dash A Home Are Plastic Bag Bans Working? III Trash Description Map Chemistry Data Vegas III BMPs Summary of Findings + Hendersonio In urban areas, plastic bag bans are making a difference . -Statistical tests show a significant difference (p= 0.012). Inspections The median value of plastic bags/pieces in areas with bans OJAVE DESER was 1 bag/piece and in areas with no bans was 3 Luis Bakersfield Ull Outreach bags/pieces. Obispo Mojave Download the report at: Santa Maria National Preserve Plastic Bag Ban Report Lancaste Lake Lompoc Los Padres Havasu National Victorville Palmdale Forest City Santa Barbarao 0.0 Boxplots Oxnard edant's Cathedra Angelé Murrieta Beach 3.0 eansid .og10+1 of plastic bags/pieces 25 2.0 Yuma Mexicali 15 Tijuana S O 1.0 Ensenada 0.5 0.0 With Bans Without Bans

Category

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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