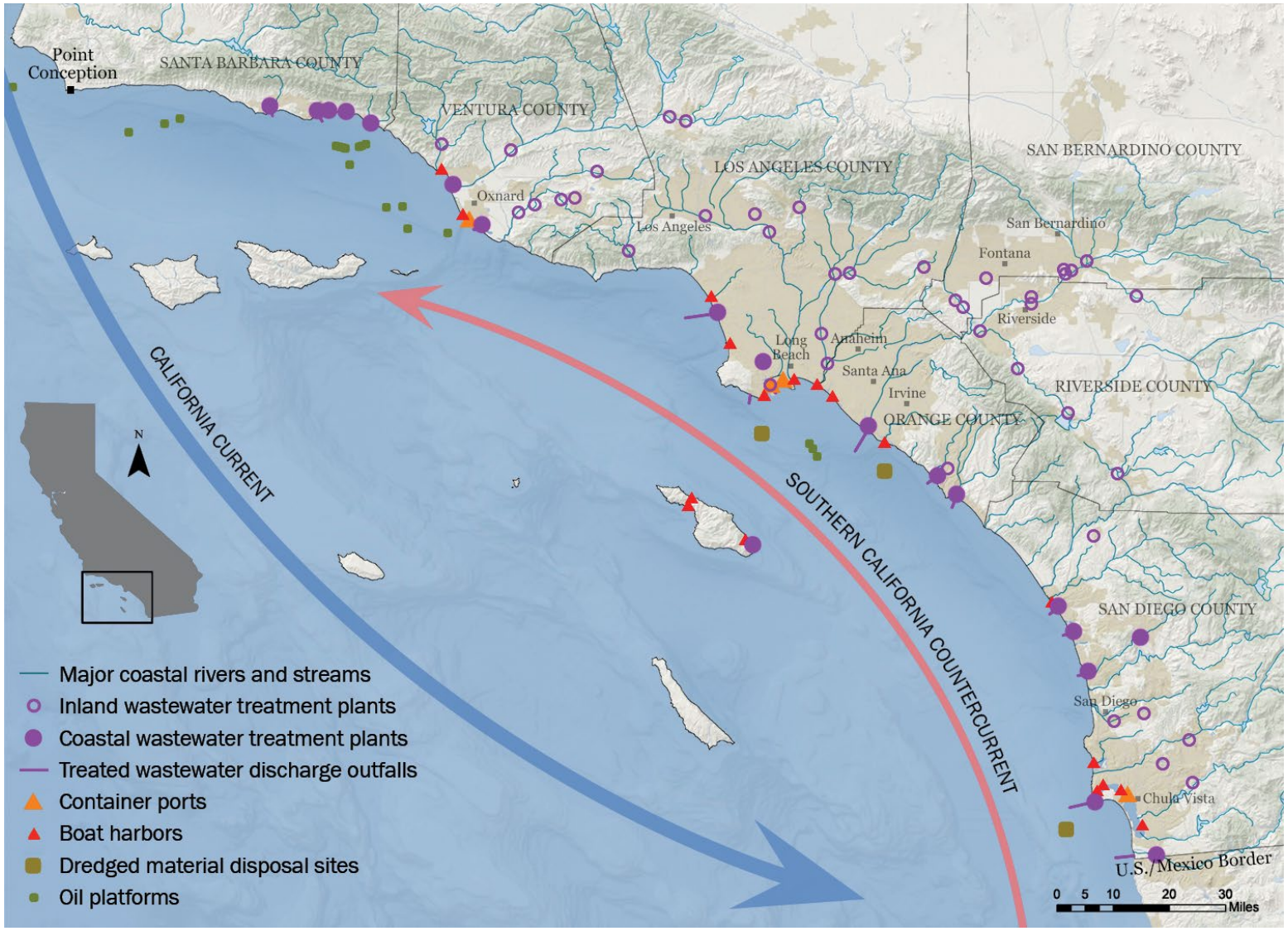
Bight '18 Sediment Quality

Presentation to SCCWRP Commission

March 4, 2022

Sediment quality helps managers understand contaminant impacts on coastal habitats



Bight ‘18 Sediment Quality Questions

1. What is the extent and magnitude of sediment quality impacts in the southern California Bight?

2. How does the extent and magnitude of sediment quality impacts vary over time in the southern California Bight?

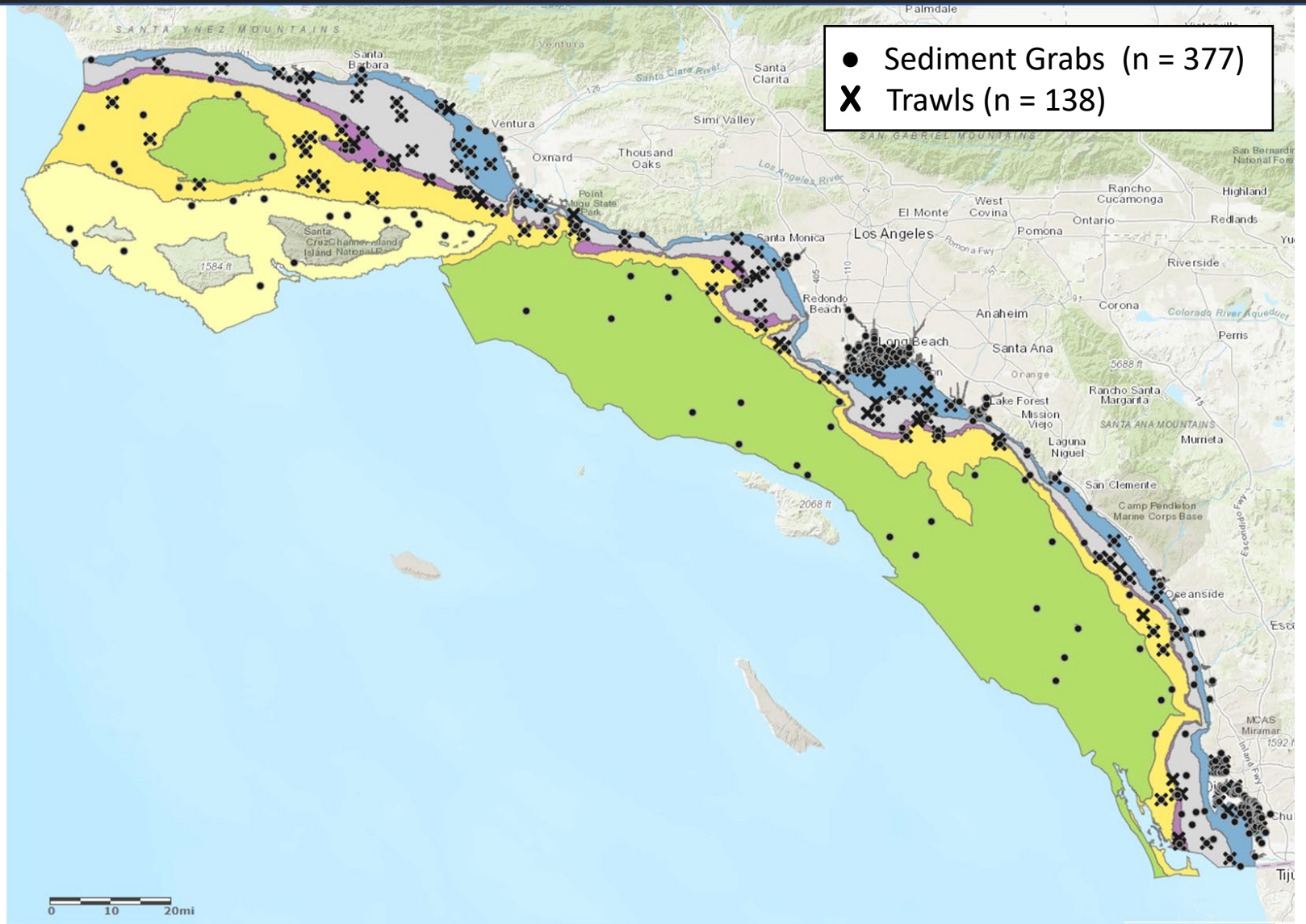
3. What is the extent and magnitude of bioaccumulation in seafood in the southern California Bight?

Sediment Quality Key Findings

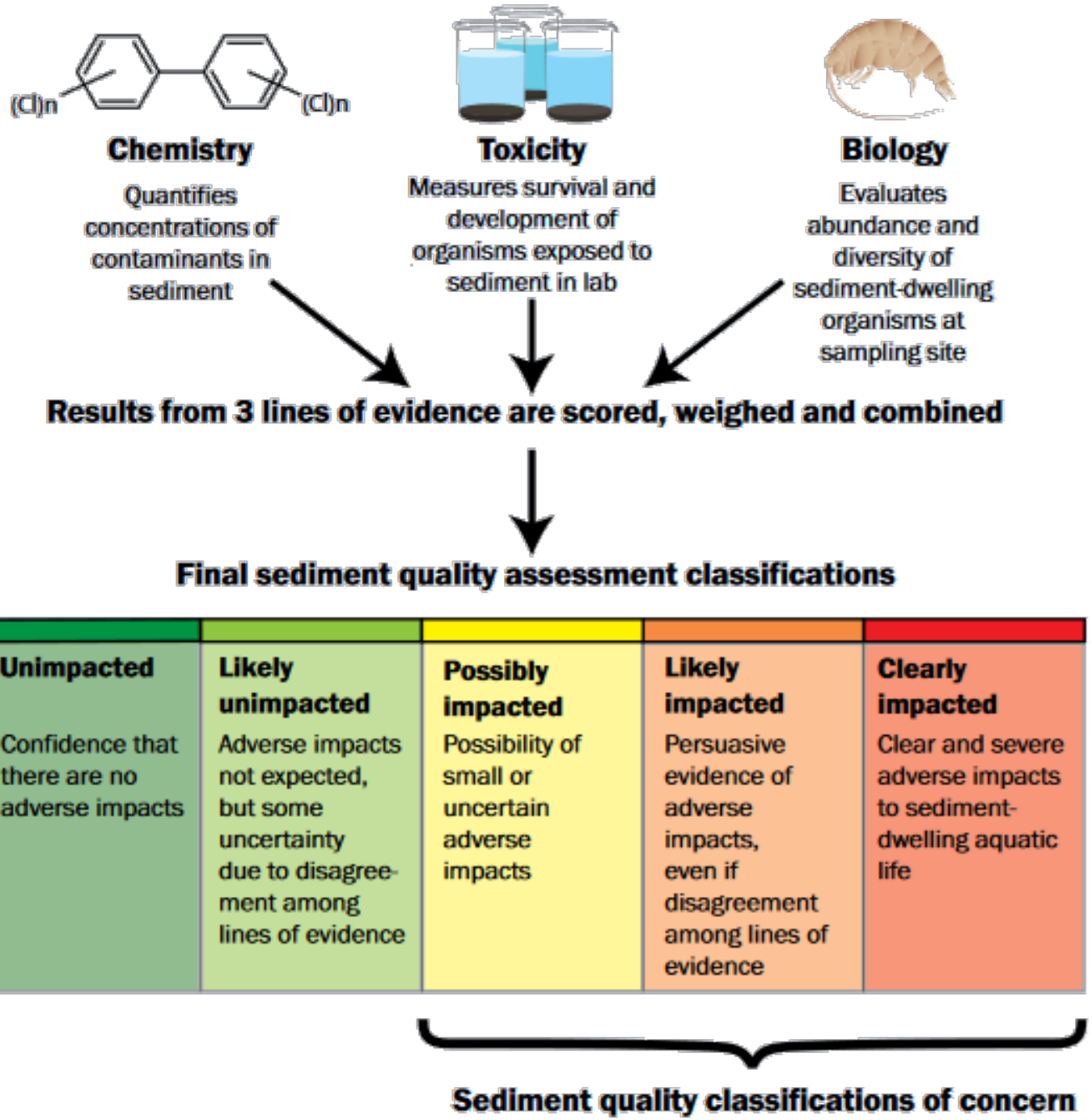
- 98% of Bight seafloor area is unimpacted or likely unimpacted by sediment contamination
- Continental shelf is primarily in good condition and has been since it was first sampled in 1994
- Fish communities generally in good condition
  - Presence of stress associated anomalies is low
- Embayments are disproportionately impacted by poor sediment quality and have not improved over the last decade

Sediment Quality Assessment: Study Design

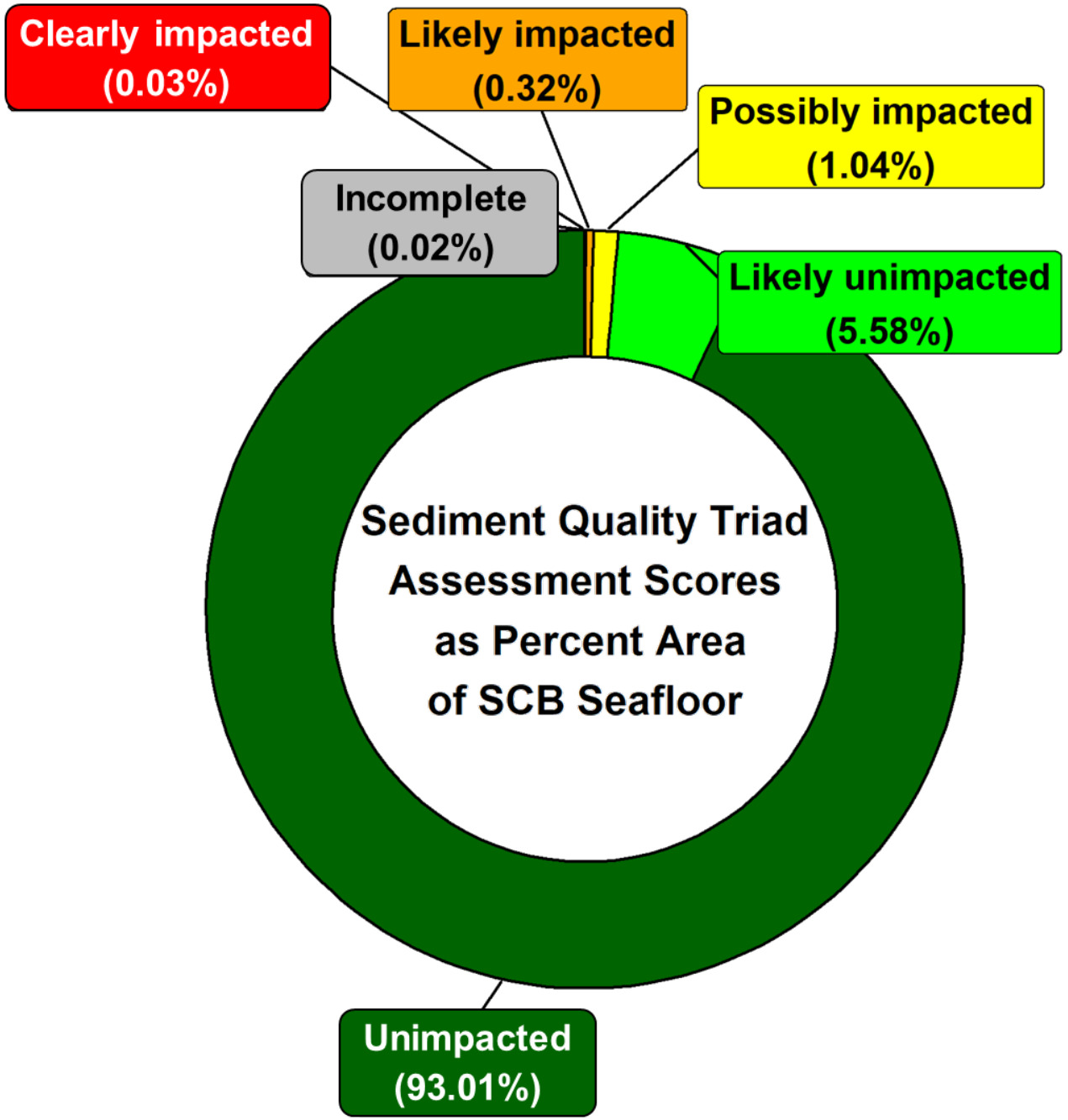
Stratum
Brackish Estuaries
Marine Estuaries
Marinas
Ports
Bays
Inner Shelf
Mid Shelf
Outer Shelf
Upper Slope
Lower Slope
Channel Islands



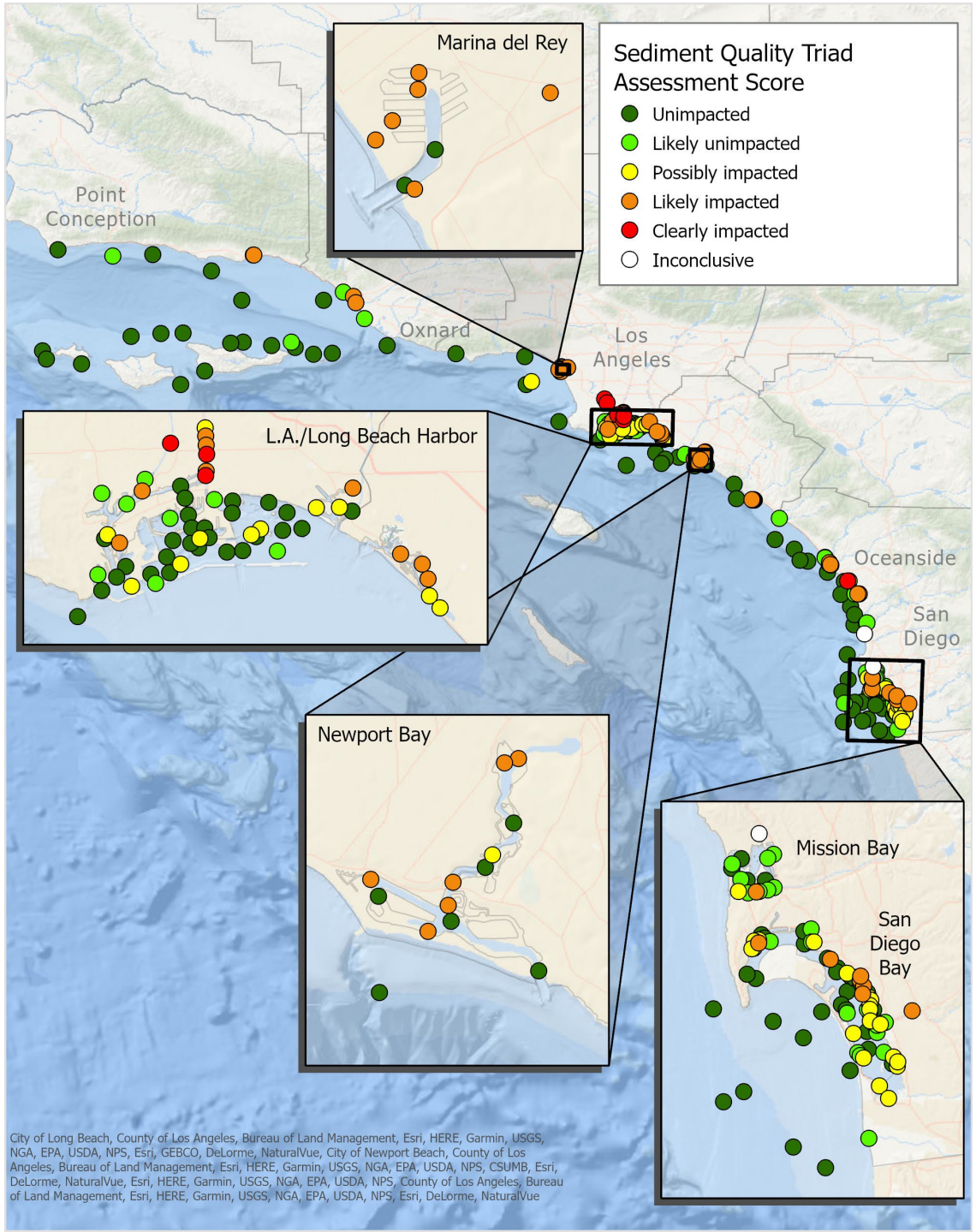
Sediment Quality Integrated Assessment Approach: Triad Tool



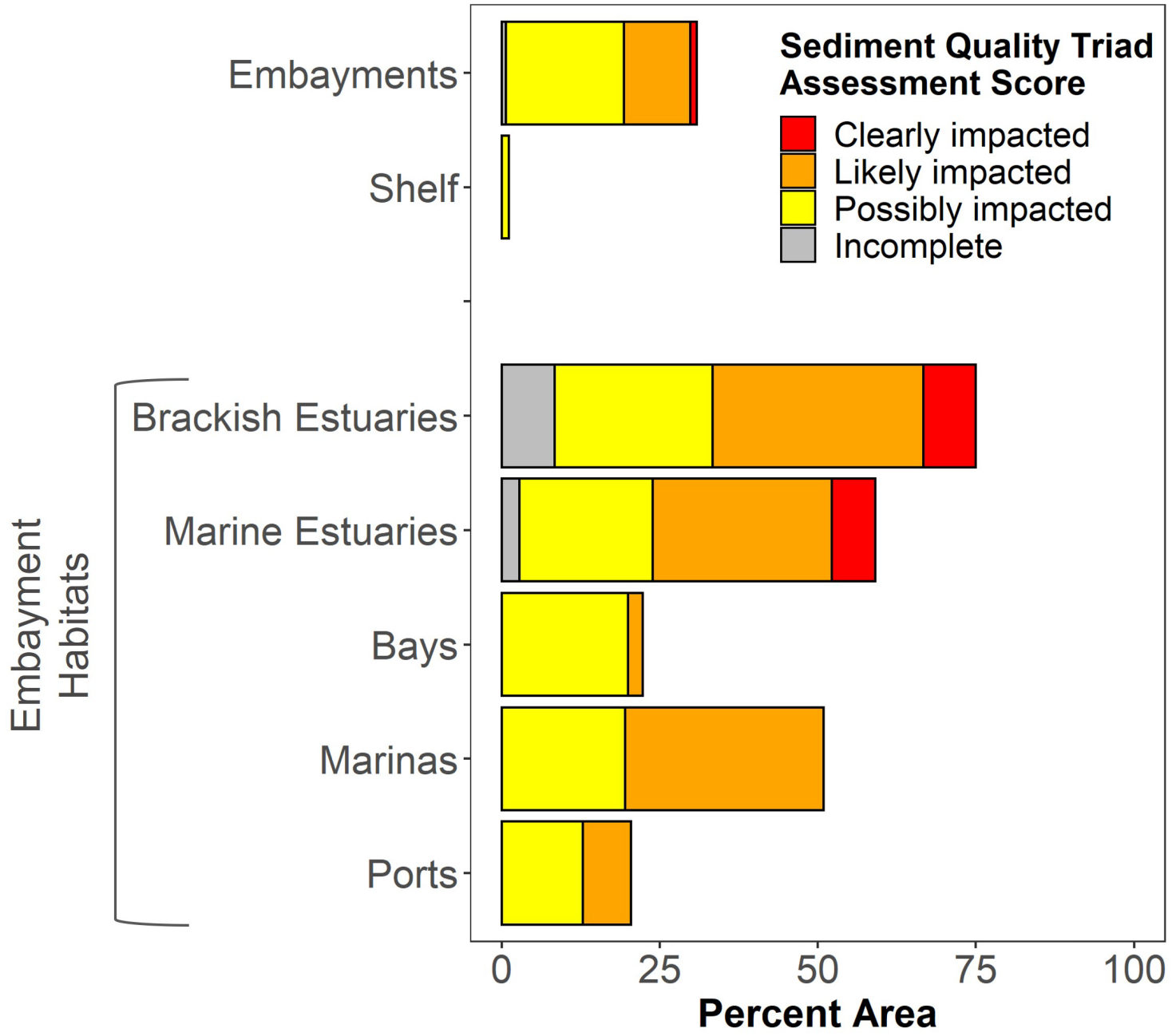
Majority of Bight seafloor area is unimpacted



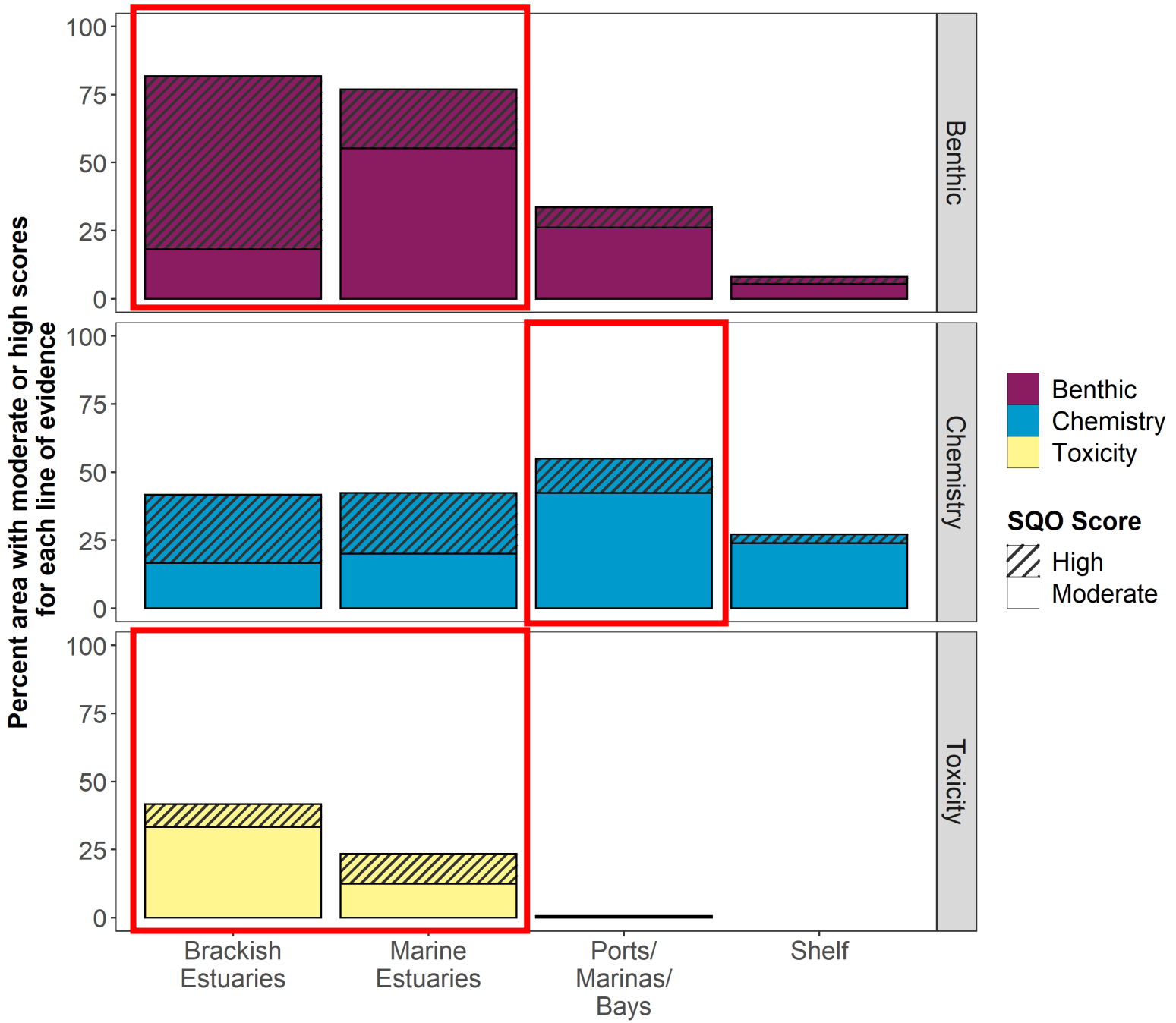
Assessment scores by site



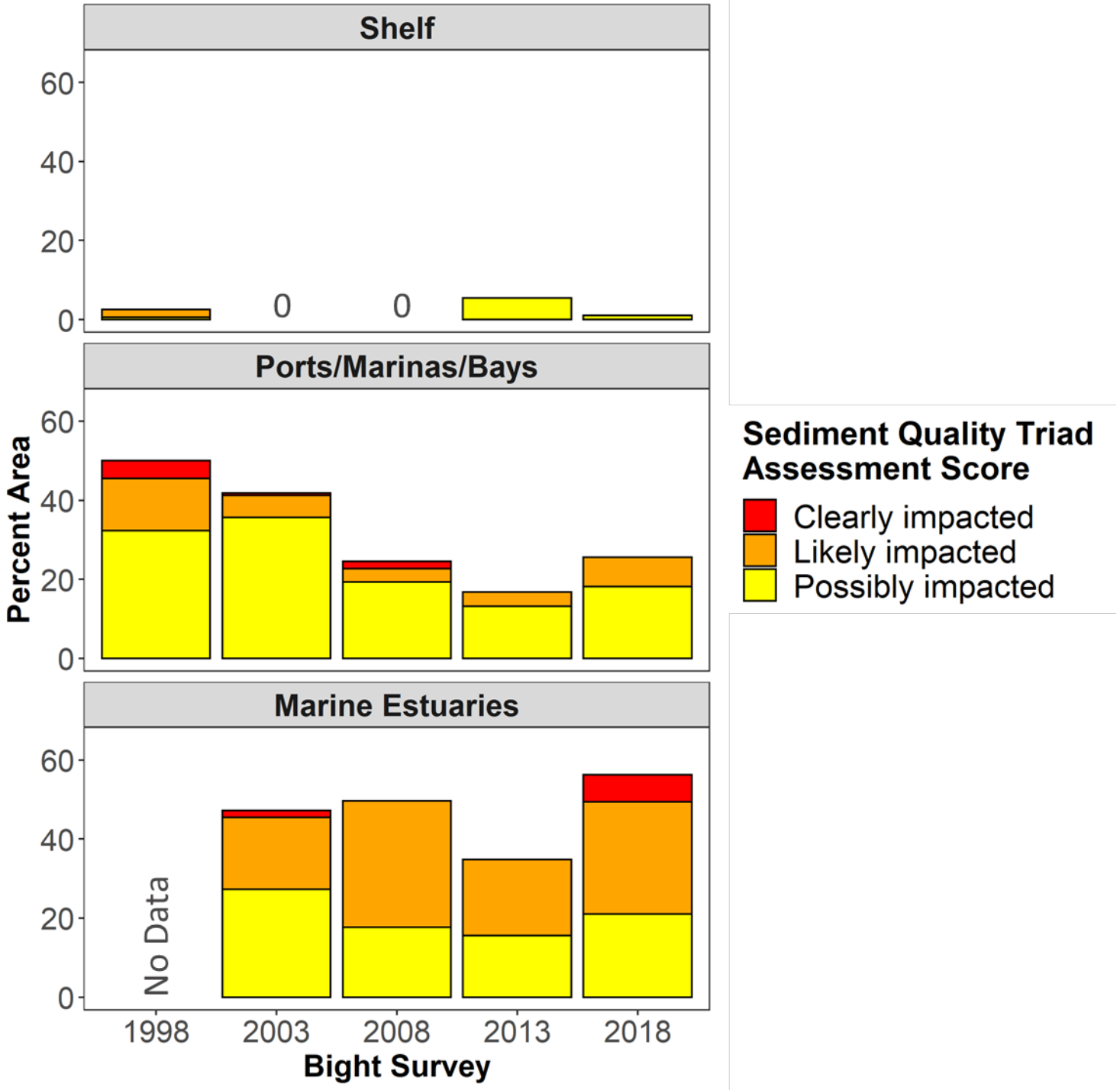
Embayments have the greatest relative percentage of impacted area



The main indicator of poor sediment quality assessment scores varies by habitat

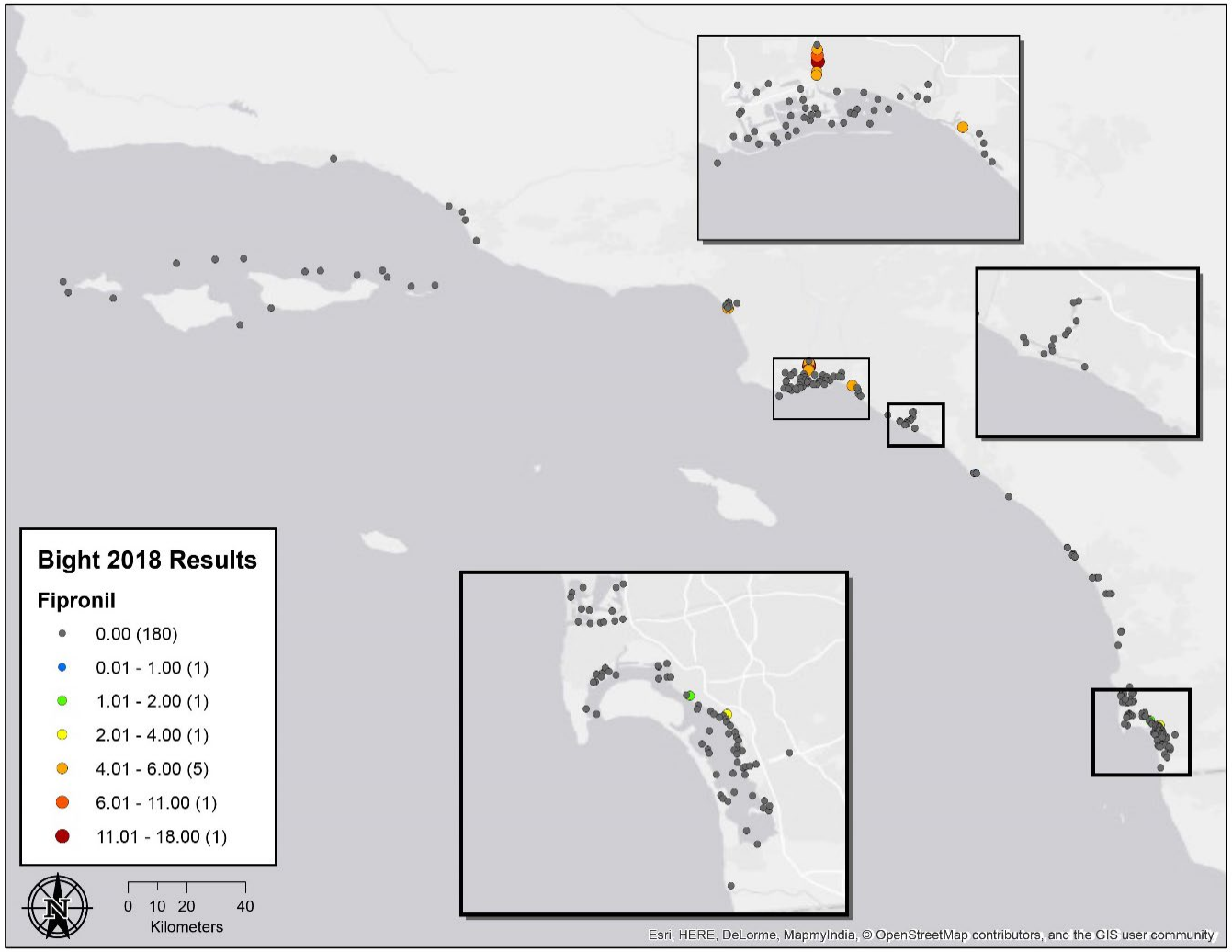


Sediment quality is not improving in embayments



New Contaminant:
Fiproles are not a significant risk in embayments

- Fiproles are a common current-use pesticide
- Fiproles were detected in 8% of the SCB embayment area
  - Mostly in marine and brackish estuaries
- Concentrations represent a low risk of acute effects (based on amphipod *E. estuaries and midge C. dilutes*)



Sediment Quality Key Findings

- 98% of Bight seafloor area is unimpacted or likely unimpacted by sediment contamination
- Continental shelf is primarily in good condition and has been since it was first sampled in 1994
  - 1% of shelf seafloor has impacted sediment quality scores
- Fish communities generally in good condition
  - Presence of stress associated anomalies is low
- Embayments are disproportionately impacted by poor sediment quality and have not improved over the last decade
  - 30% of embayment area has impacted sediment quality scores
  - Over half of marinas, brackish and marine estuaries seafloor area

Looking forward to 2023…

- Investigate condition of the deepest areas of the Bight
  - 63% of Bight area not included in current assessment
  - Develop and test assessment tools for these regions
- Understand why embayments are impacted
  - Causal assessment: why the poor infauna and high toxicity?
  - Test out new assessment tools for embayments
- Explore new indicators
  - CECs like microplastics, PFAS, or neonicotinoid pesticides

Questions?

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