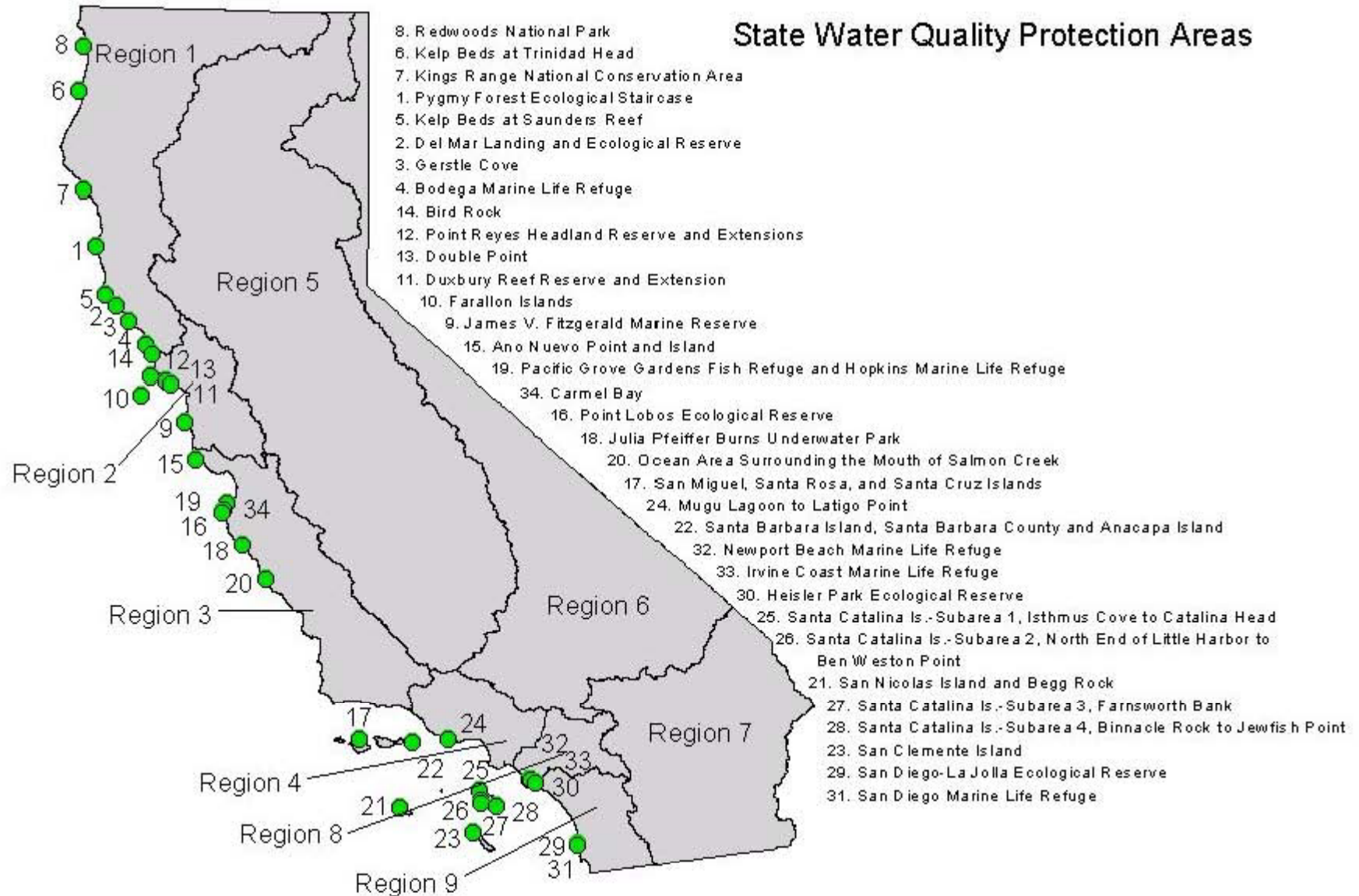


ASBS: Not Your Usual State Regulation

- Water quality protected areas
 - 34 ASBS statewide designated in the mid-1970's
- “No discharge of waste”
 - Maintenance of natural water quality
- Very few point sources
 - Over 1,600 surface water discharges
- SWRCB encouraged a regional approach to assessing ASBS water quality
 - Bight'08 in southern California

State Water Quality Protection Areas



Monitoring Questions

- **What is the range of natural conditions at reference intertidal locations?**
 - Develop natural water quality “limits”
- **How does this range of natural water quality compare to ASBS sites during wet weather?**
 - Compare specific ASBS locations to natural water quality limits
- **What is the extent of impact in ASBS with and without discharges?**
 - Estimate extent of ASBS shoreline that exceeds natural water quality limits

Regional Monitoring Partners

- **State Water Resources Control Board**
- **LA and SD Regional Water Quality Control Boards**
- **LA County Flood Control District**
- **City of Malibu**
- **City of Newport Beach**
- **City of Laguna Beach**
- **Scripps Institution of Oceanography**
- **City of San Diego**
- **Univ Southern California**
- **Santa Catalina Island Conservancy**
- **Connelly-Pacific Corp**
- **US Navy**

Targeted Study Design

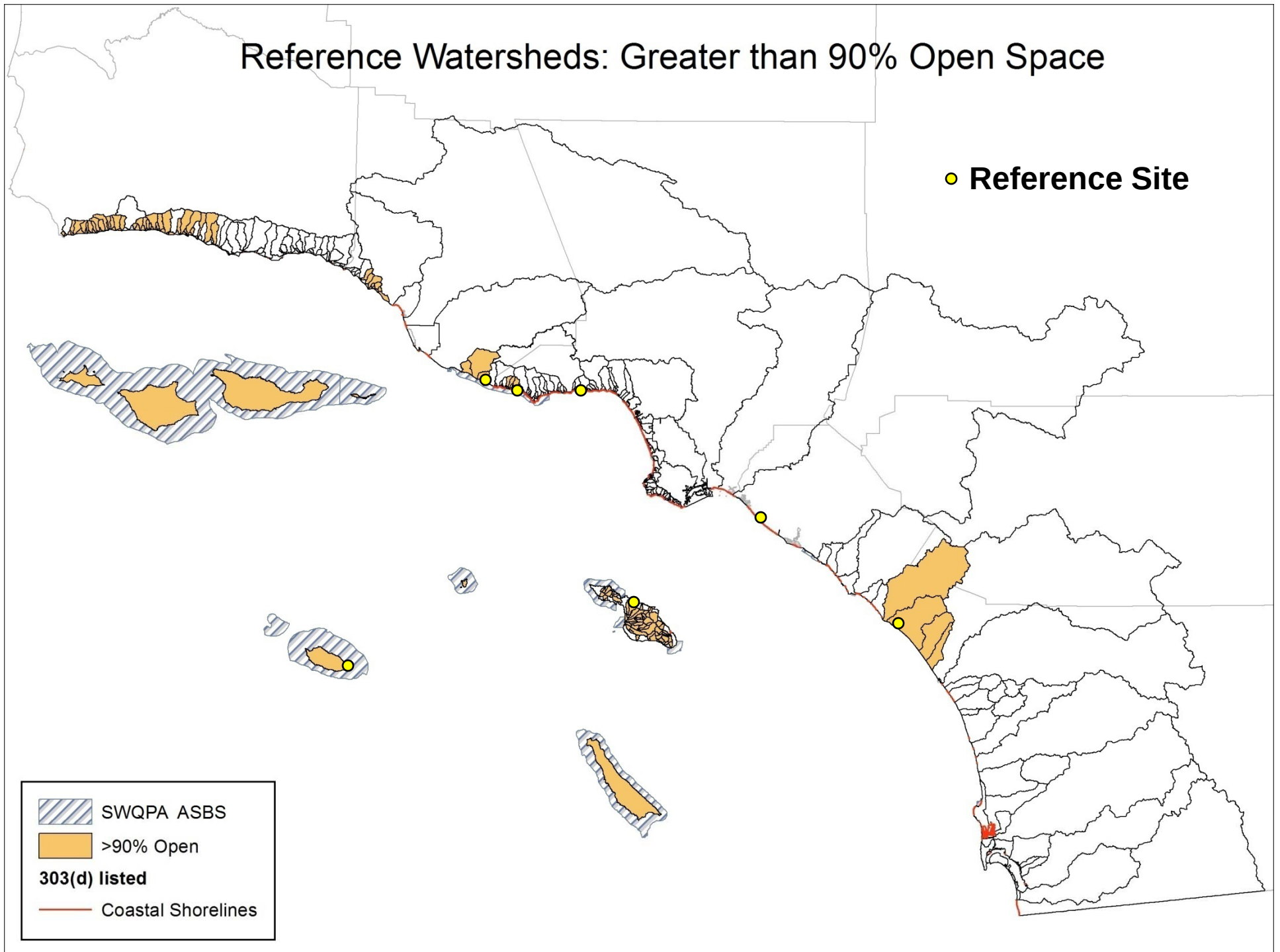
- **Wet weather focused**
 - One sample pre-storm and another post-storm
 - Three storms per site
- **Measure a long list of constituents**
 - General, nutrients, metals, organics
 - Toxicity
- **Location specific site selection**
 - Reference sites
 - Discharge sites
 - Collected from the ocean immediately in front discharge

Reference Site Selection Criteria

- Open beach with breaking waves and a contributing watershed
- Not 303(d) listed
 - Beach or contributing watershed
- Minimal human disturbance
 - Contributing watershed > 90% open space
- Catchment size within the range of ASBS discharges
- Series of secondary criteria
 - Substrate, swell direction, headland prominence, geology

Reference Watersheds: Greater than 90% Open Space

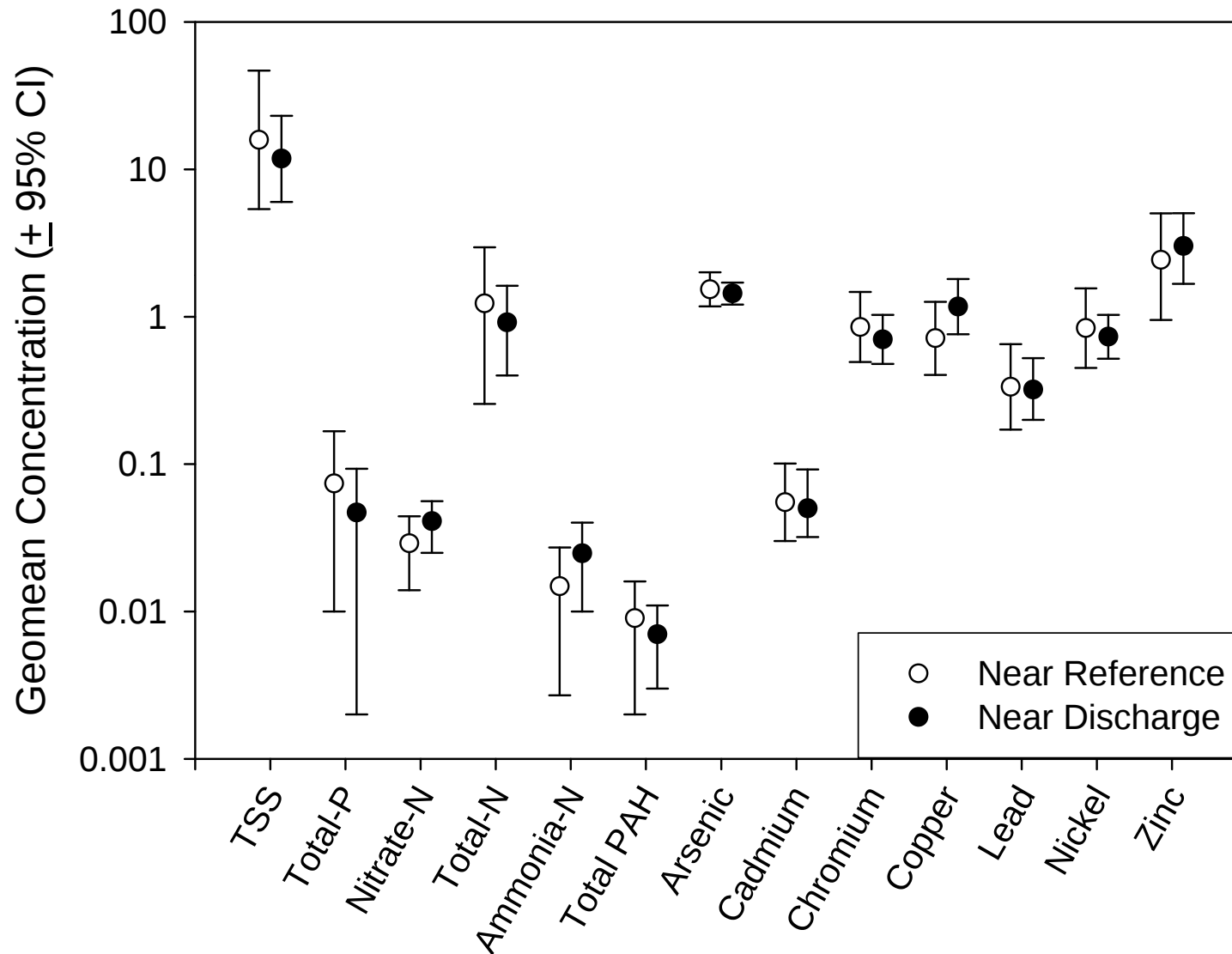
● Reference Site

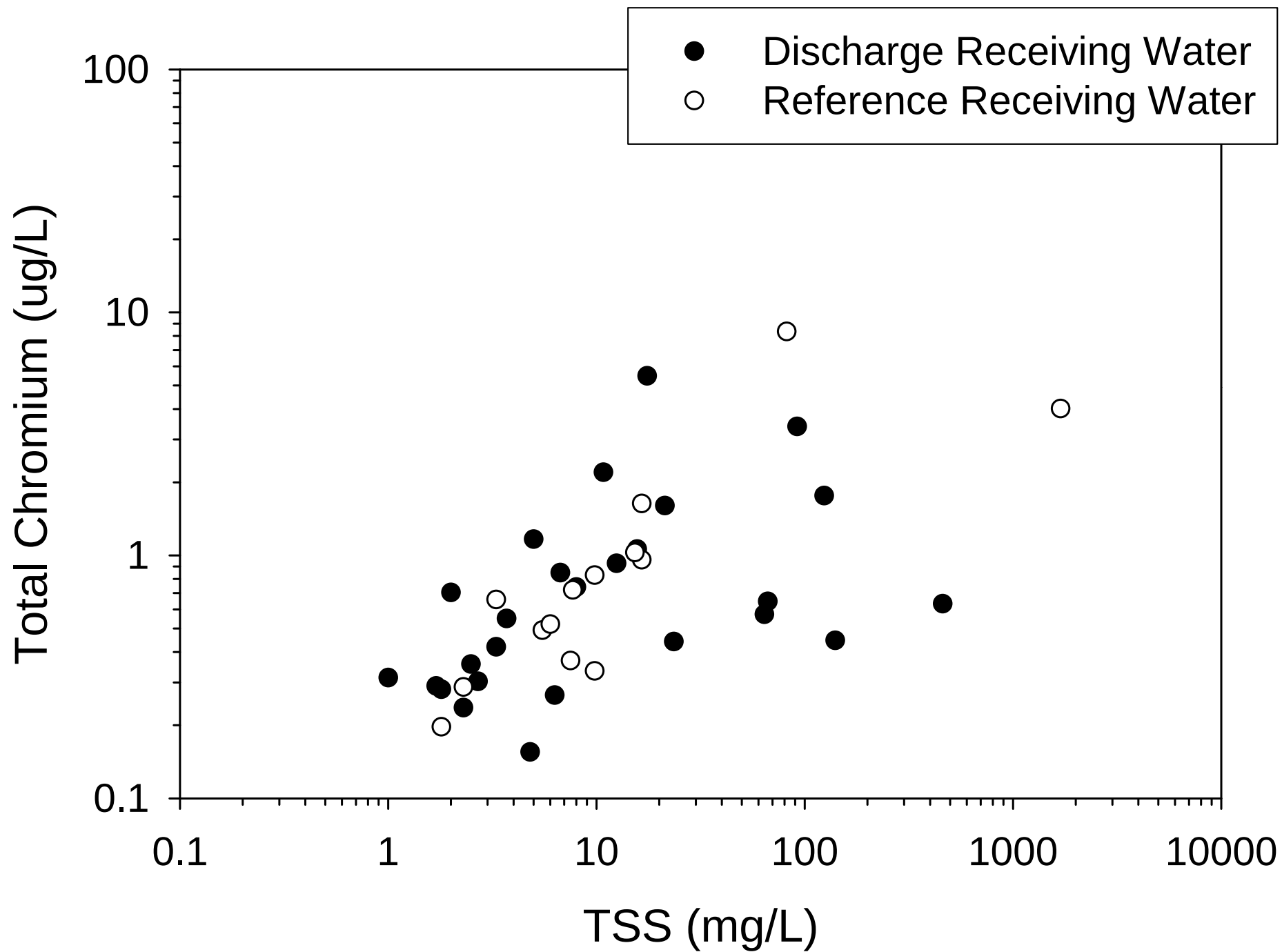


Sampling Success Summary

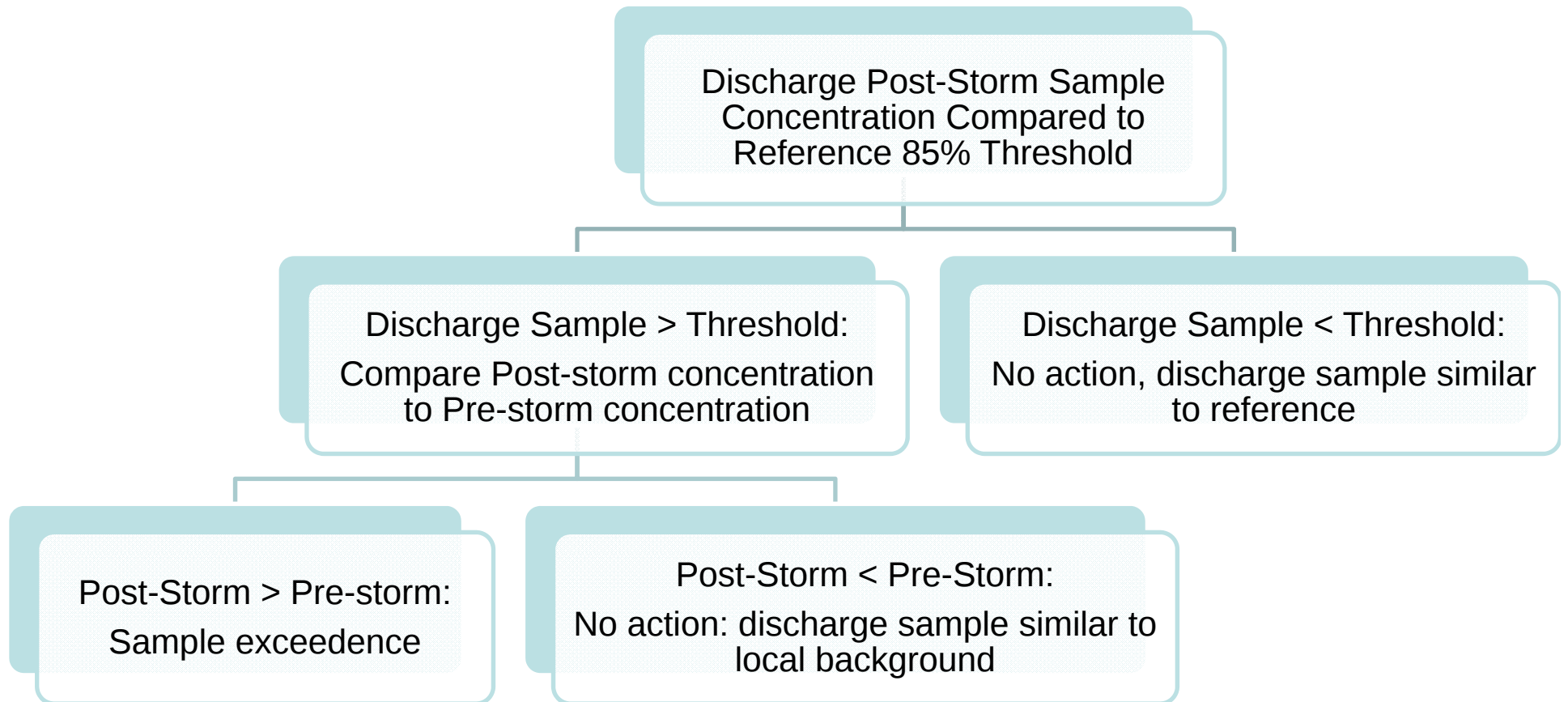
	Reference	Discharge
Pre-Storm	11	20
Post-Storm	12	23
Total	33	43
% of Expected	95%	116%

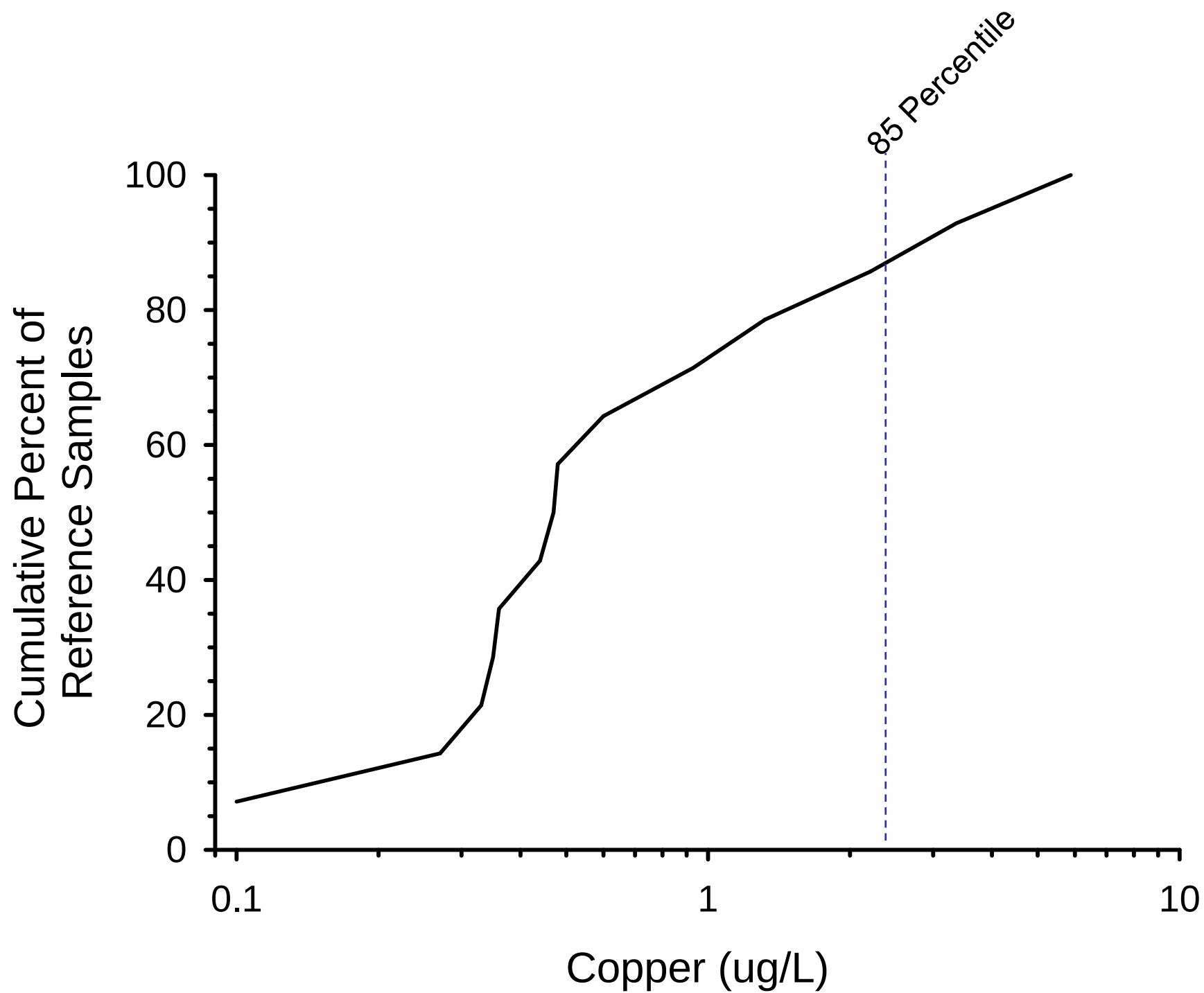
Comparison Of Post-Storm Receiving Waters *Reference vs. Discharge*



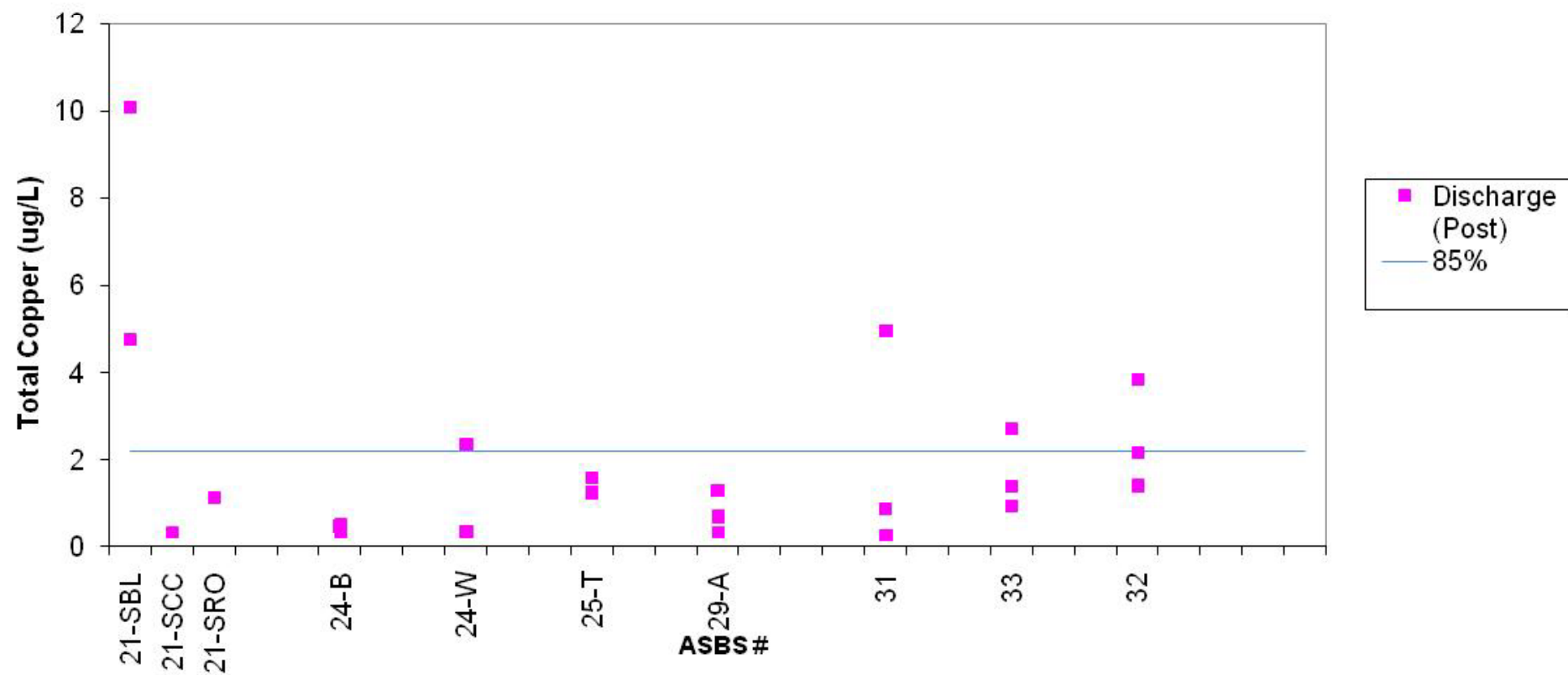


Discharge Sample Evaluation Scheme

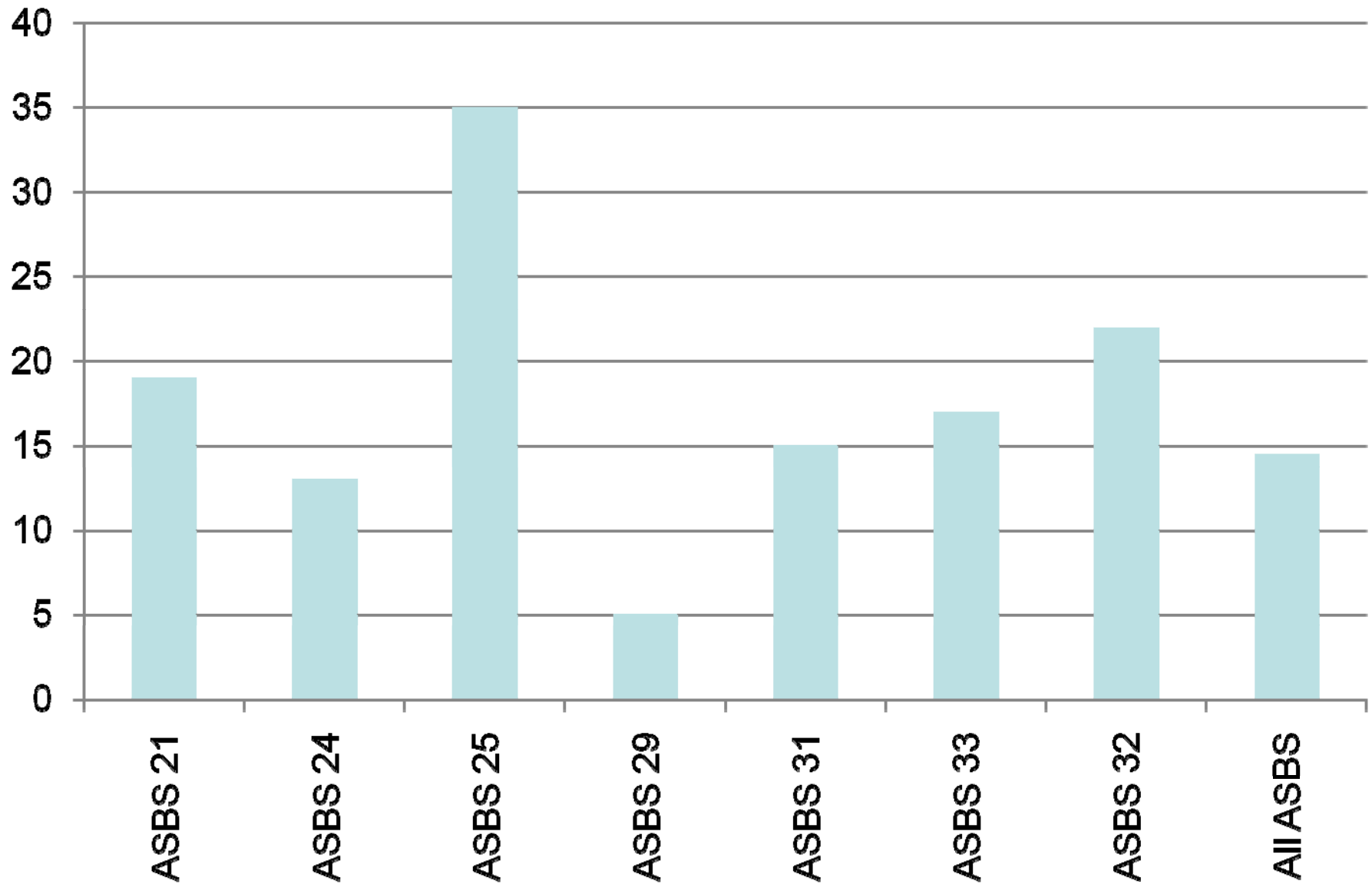




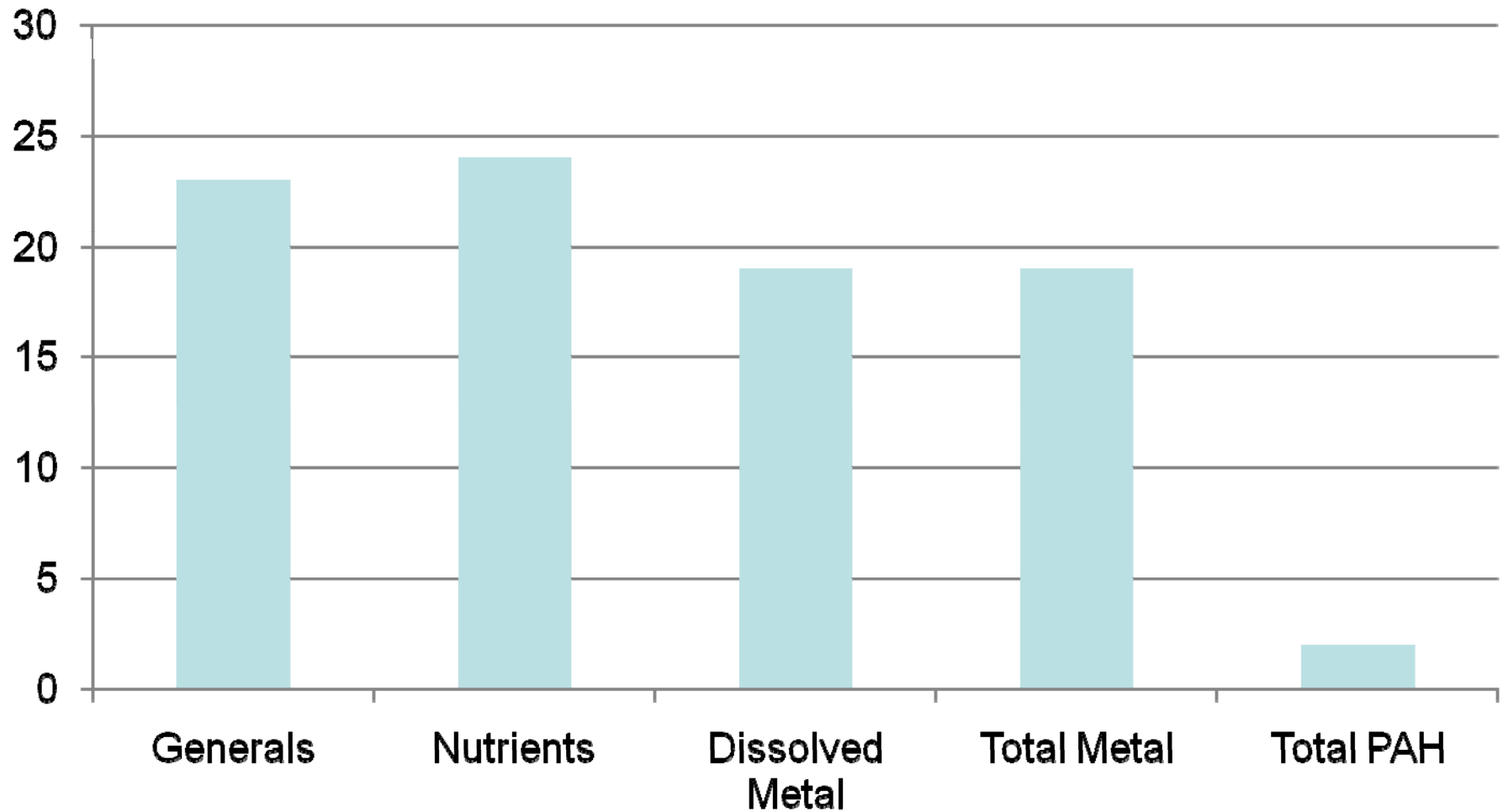
Potential Thresholds



Percent Of Sample*Parameters Exceeding Threshold Scheme



Percent Of Sample*Parameters Exceeding Threshold Scheme



Conclusions

- Overall, ASBS water quality is in good condition
 - Concentrations near ASBS discharges were not statistically different to reference sites
 - Toxicity occurred at 2 out of 43 site-events
- Reference sites were used to create an evaluation scheme for scoring ASBS discharge sites
- ASBS discharge sites behaved similarly to Reference sites
 - Certain discharge sites during some storm events exhibited levels greater than reference condition

Recommendations

- Reference site data should be enhanced to ensure it captures the entire range of natural variation
 - More robust data set will breed confidence in this tool
 - The Bight platform was a useful mechanism for collecting this data
- Where ASBS discharge sites were different than reference condition, additional monitoring should be conducted
- Chemistry and toxicity information should be evaluated with the biological data for a weight of evidence assessment
 - Biological data being analyzed now