

Water Quality Break-out Session: Beach Water Quality and Floatables

(Note: Floatables are not a significant issue for all three RAs)

3 RAs Water Quality Workshop

Baltimore, MD

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Participants:

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Desired outcomes:

1. Advisories / closures are issued when they should be, being cognizant of type I and type II errors
2. Source(s) of bacterial contamination is(are) identified

Note: Decision support tools are required to achieve both outcomes.

General Issues by Region

Southeast

- stormwater runoff on beaches in Horry County
- timeliness of advisories
- ensemble approach works best
- many beaches don't have significant, regular problems

Great Lakes

- municipal overflows
- economic issues
- type I and type II errors associated with decisions made
- decisions are made county-by-county and need for geographically consistent tools
- at one point, approximately 20 different models / tools were being used for beach water quality assessment; EPA has developed a CD containing all models (Virtual Beach)

General Issues by Region

Northeast

- why are beaches closed; i.e. source of contamination (overflows, stormwater)
- economic and political concerns can override public health concerns

Mid-Atlantic

- freshwater ponds / lakes directly draining to nearshore waters can contribute to bacterial loadings
- looking to IOOS for decision support in issuance of advisories
- rainfall does not always lead to high bacterial loadings along portions of NJ shore
- in NJ, circulation was identified as a potentially important driving factor

ACTION PLAN

- 1.) Identify beaches on East Coast where advisories / closures are frequent
- 2.) Identify how decisions are made to issue advisories / closures
- 3.) Identify willing partners (federal, state, local, non-government such as Chambers of Commerce)
- 4.) Develop and assemble a regional list of parameters that influence beach water quality and models / techniques that are being used in support of issuing beach advisories / closures

ACTION PLAN

5.) Establish a regional communication mechanism for beach managers to include the need for an awareness of new technologies in support of source identification, modeling, etc.

- Engage NGOs like surf rider and NRDC

- IOOS can bring

 - managers confidence that beaches are open when they should be and closed / advisories issues when they should be

 - tools for supporting pre-emptive advisories / closures

 - support for coordination of monitoring / observing data and associated data management

6.) Identify IOOS core variables and other parameters collected by regional COOS efforts (not limited to just offshore observations but inclusive of estuarine, riverine and terrestrial monitoring; i.e. acknowledge the C in ICOOS) that influence beach water quality

ACTION PLAN

- 7.) Determine data interoperability issues / needs
- 8.) EPA would delegate (or RAs would offer) to peer-review of models (statistical, hydrologic, etc.) for each RA
- 9.) Engage NOAA in tool development (i.e. OHH may be an opportunity)
- 10) Package a proposal
 - Investigate federal funding opportunities
 - State beach managers are currently writing next's years grant
 - Investigate Chambers of Commerce, i.e. accommodation tax money
- 11.) At least one community in each RA will have an operational statistical models that uses IOOS resources

CHALLENGES

- Beaches, and hence modeling approaches and driving variables, are variable; i.e. one model does not fit all; but a consistent modeling approach can be transferrable.
- More research needed on source tracking and rapid assessment
- Probes for rapid assessment are a long way off as the number of bacterial types and pathogens is numerous
- Lack of funding / sustained funding
- Need for additional near-real-time data
- Need to understand the needs and capabilities of the users
- Need to identify common ground among beach water quality groups

FUTURE NEEDS

- In situ bacteria sensors (but still need to understand drivers)
- Further review of sampling protocols
- Nowcasting
- Determine whether predictive models are acceptable to EPA; i.e. are changes necessary?