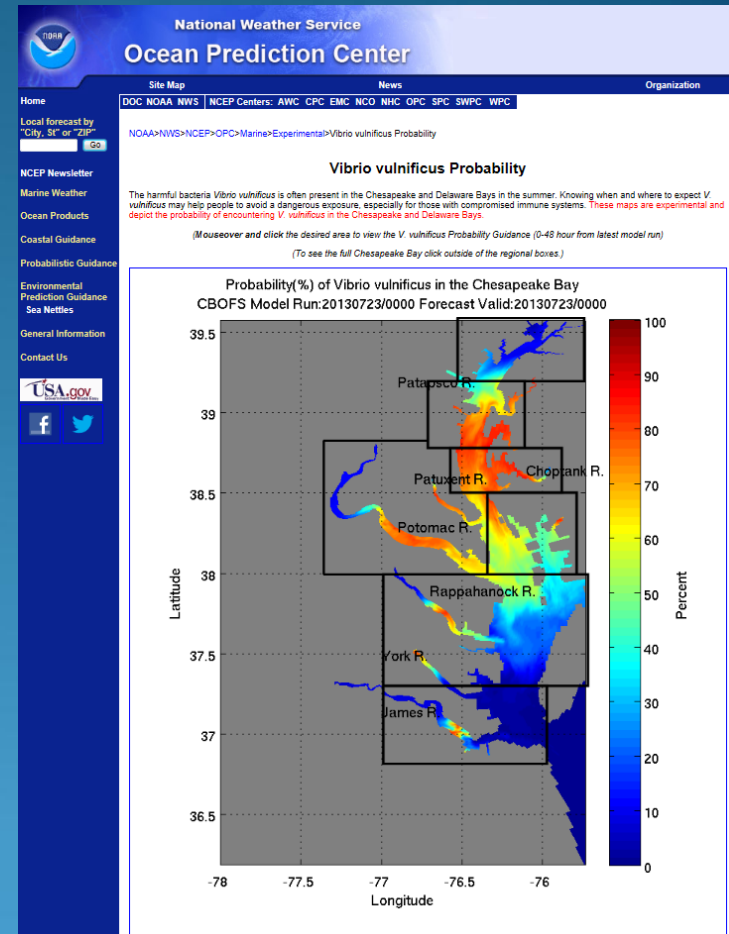


NOAA Ecological Forecasting: Pathogen Team

NOAA/NOS/NCCOS

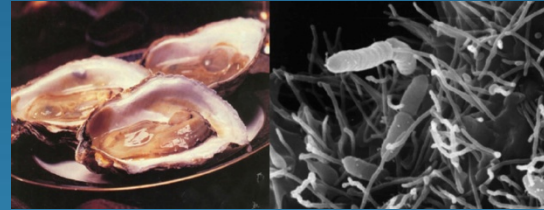


National Centers for Coastal Ocean Science
...science serving coastal communities

Vibrios: Naturally Occurring Harmful Bacteria



Vibrio cholerae



Vibrio parahaemolyticus (Vp)
Vibrio vulnificus (Vv)



- Naturally occurring bacteria in coastal waters
- Vv responsible for 95% of all seafood related mortality
- Vp estimated at 80,000 cases per year
- *Vibrio* infection rates have increased 41% over the last decade.
- Over 300 million annually in health care costs alone.

Vibrio Risk Prompts Oyster Recalls, Bed Closures Far North Of The Gulf Of Mexico

The Huffington Post | By Joe Salran   Posted: 09/03/2013 5:00 pm EDT | Updated: 09/03/2013 5:57 pm EDT

For Immediate Release - August 30, 2013
Department of Public Health and Division of Marine Fisheries Announce Closure of Oyster Beds in Plymouth, Kingston, Duxbury, And Marshfield
Several cases of Vibrio linked to consumption of oysters harvested from the area



Food Safety News

Breaking news for everyone's consumption

Home Foodborne Illness Outbreaks Food Recalls Food Politics Events

Vibrio Closes Some Oyster Beds in Washington

BY NEWS DESK | SEPTEMBER 8, 2014

Several people who ate raw oysters from Washington state's Samish Bay and Hood Canal have become ill with Vibrio parahaemolyticus bacteria.

FOOD RECALL ADVISORY: Norwalk/Westport Area Shellfish Bed Closures Due to Vibrio Foodborne Illnesses; Recall of Clams and Oysters

Food Recall Advisory

Advisory: On August 3, 2013 The Department of Agriculture Bureau of Aquaculture (DA/BA) has announced a voluntary closure of shellfish beds in the Norwalk Westport area due to a number of illnesses associated with *Vibrio parahaemolyticus*, a naturally occurring bacterium associated with shellfish harvested from certain areas. The closure affects commercial areas in Norwalk and Westport and recreational areas in Westport, and Darien. Oysters and clams harvested from these areas between 7/3/13 and 8/3/13 are recalled.

Oyster bed closures leave aquaculturists reeling

PLYMOUTH
By Emily Sweeney | GLOBE STAFF SEPTEMBER 19, 2013

Shellfish bed closures raise climate change questions

By Jan Ellen Spiegel
Monday, August 5, 2013

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McLaughlin et al. N Engl J Med 2005;353:1463-70

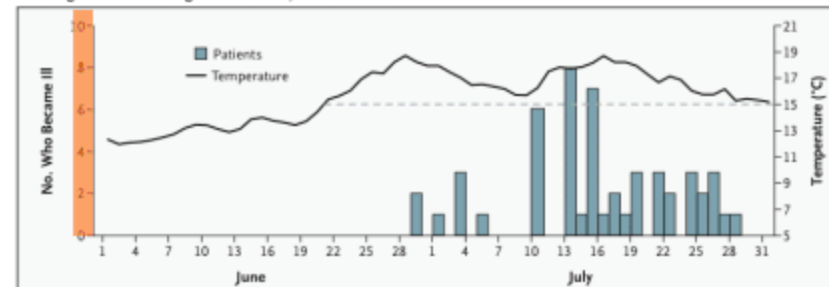
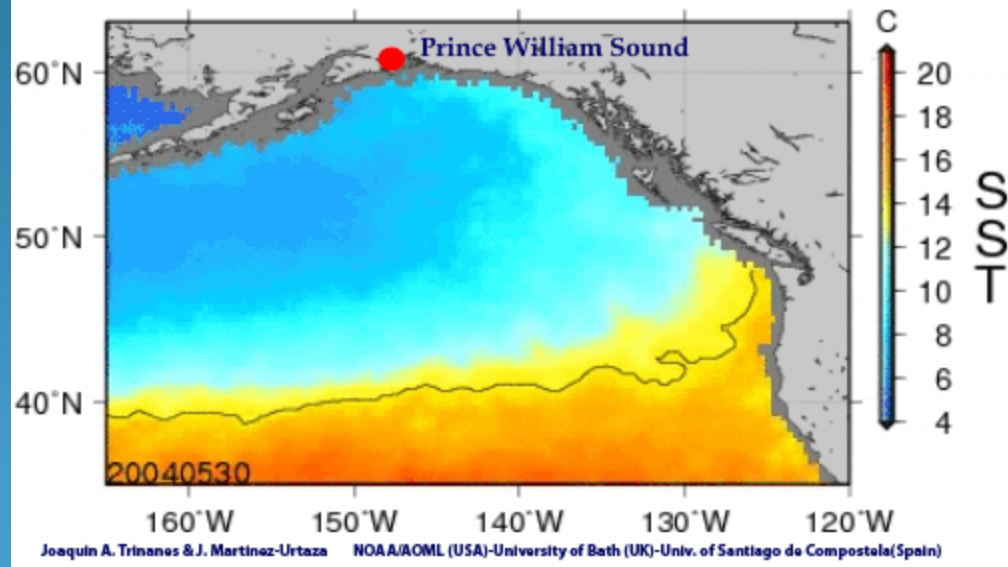


Figure 3. Number of Patients with *Vibrio parahaemolyticus* Infection Associated with Oysters from Farm A, According to the Harvest Date, and Mean Daily Water Temperatures at Farm A.



Martinez-Urtaza, Bowers, Trinanes, and Depaola (2010) Food Research Int.



National Weather Service Ocean Prediction Center

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Local forecast by
"City, ST" or "ZIP"

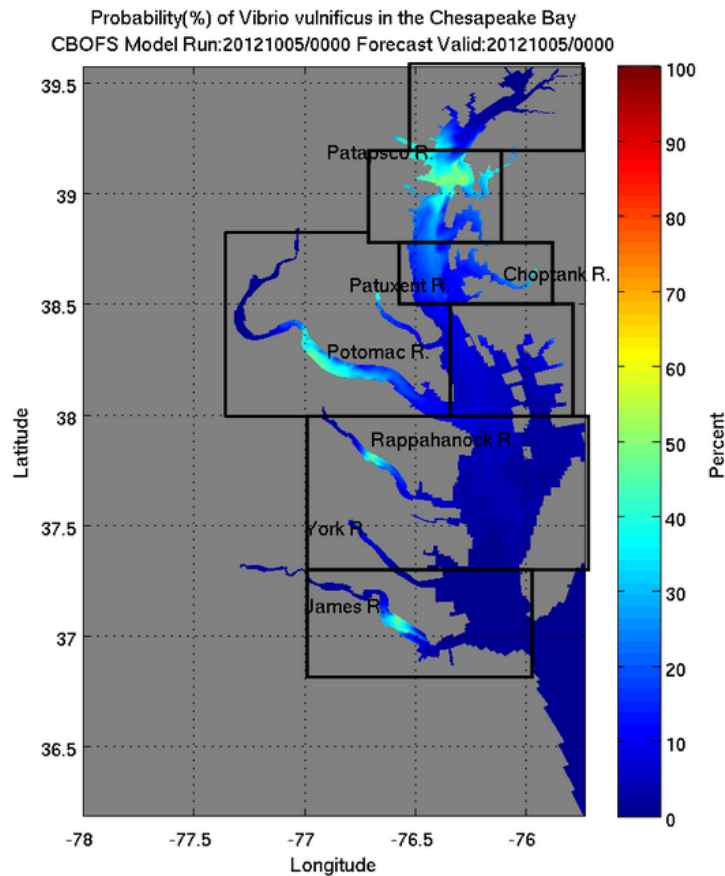
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Vibrio vulnificus Probability

The harmful bacteria *Vibrio vulnificus* is often present in the Chesapeake and Delaware Bays in the summer. Knowing when and where to expect *V. vulnificus* may help people to avoid a dangerous exposure, especially for those with compromised immune systems. **These maps are experimental and depict the probability of encountering *V. vulnificus* in the Chesapeake and Delaware Bays.**

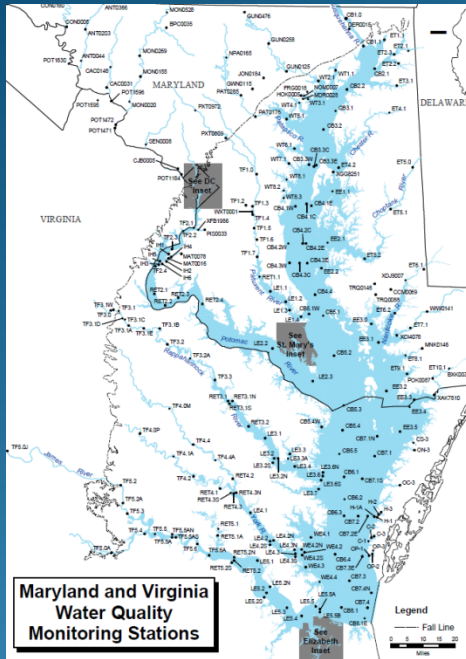
(Mouseover and click the desired area to view the *V. vulnificus* Probability Guidance (0-48 hour from latest model run)

(To see the full Chesapeake Bay click outside of the regional boxes.)

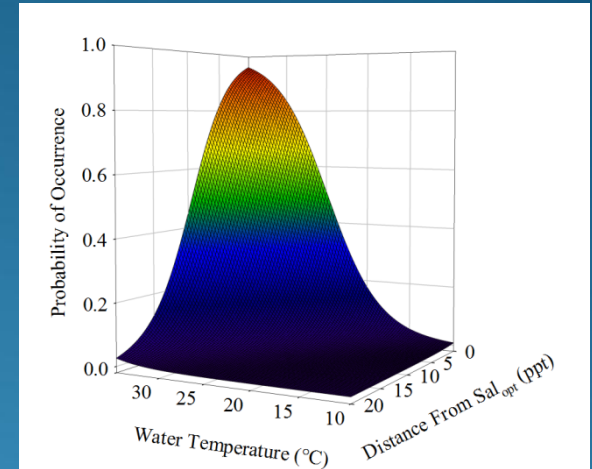


CBOFS

- Fully operational implementation of ROMS running in experimental mode.
- 48 hour predictions
- Supported by PORTS

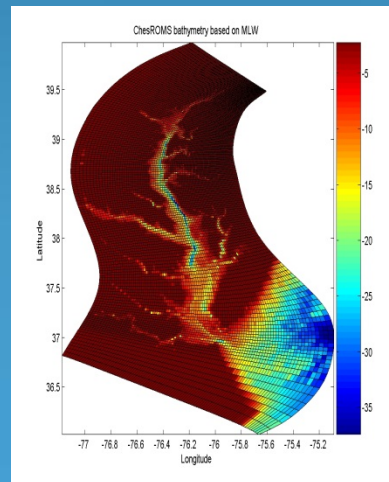


Data – *Vibrio* +
environmental
parameters



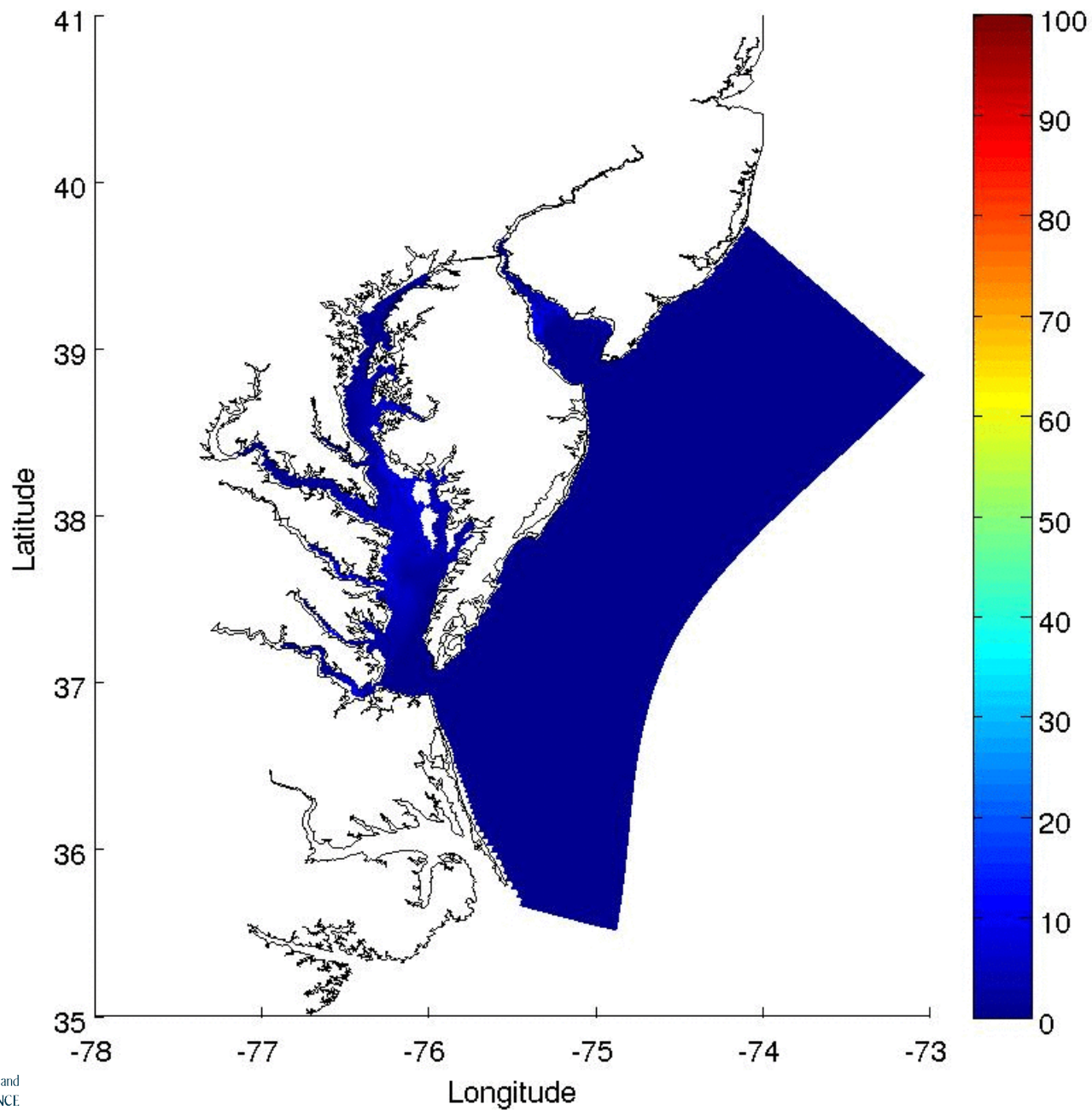
Statistical Model

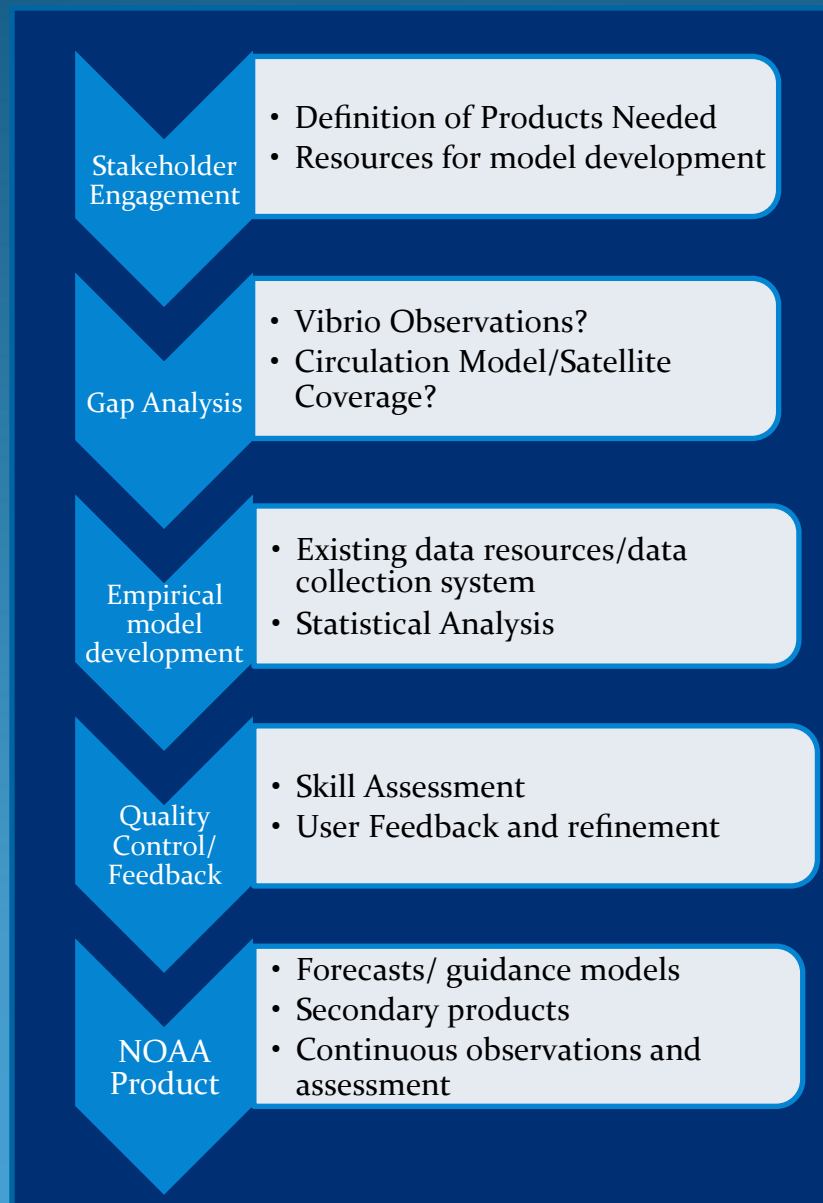
Data – skill
assessment




Forecast system

Surface Vvul (%) at 2005-05-05 00:00:00





R2A Framework



National Weather Service
Ocean Prediction Center

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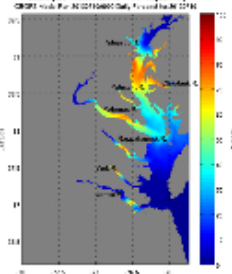
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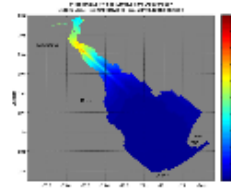
Vibrio Guidance

[Vibrio vulnificus in Water](#)

Chesapeake Bay (*V. vulnificus*)

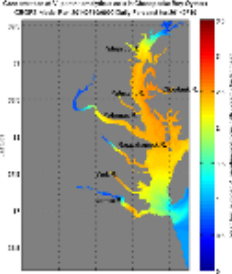


Delaware Bay (*V. vulnificus*)

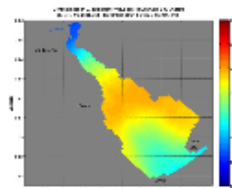


[Vibrio parahaemolyticus in Oysters](#)

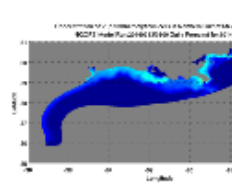
Chesapeake Bay (*V. parahaemolyticus*)



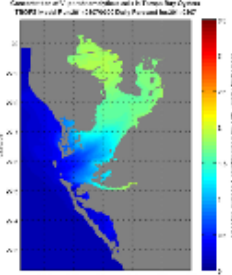
Delaware Bay (*V. parahaemolyticus*)



Northern Gulf of Mexico



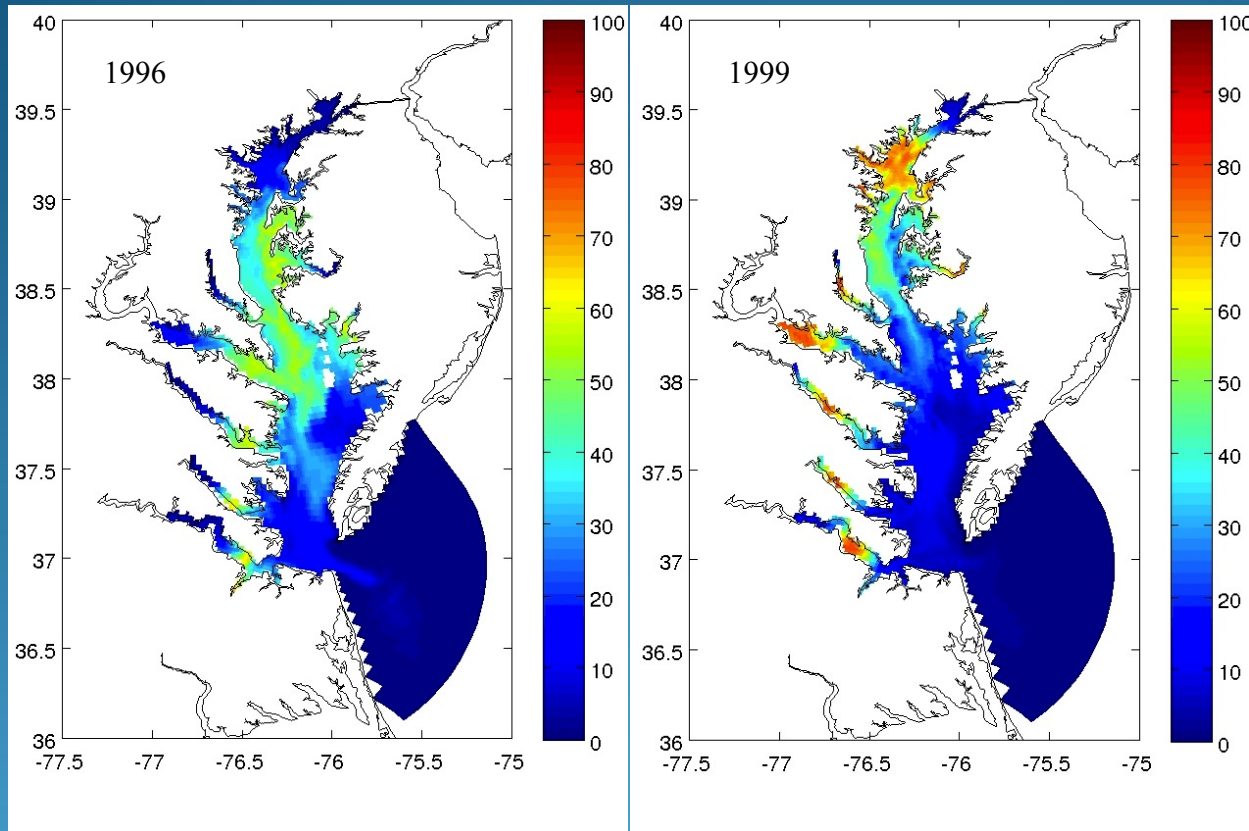
Tampa Bay



- V_v in surface waters (probability of occurrence, Chesapeake and DE Bays)
- V_p in oysters (FDA risk assessment models, Gulf, Tampa, Chesapeake, DE)
- 5 previous days and 48 hr predictions

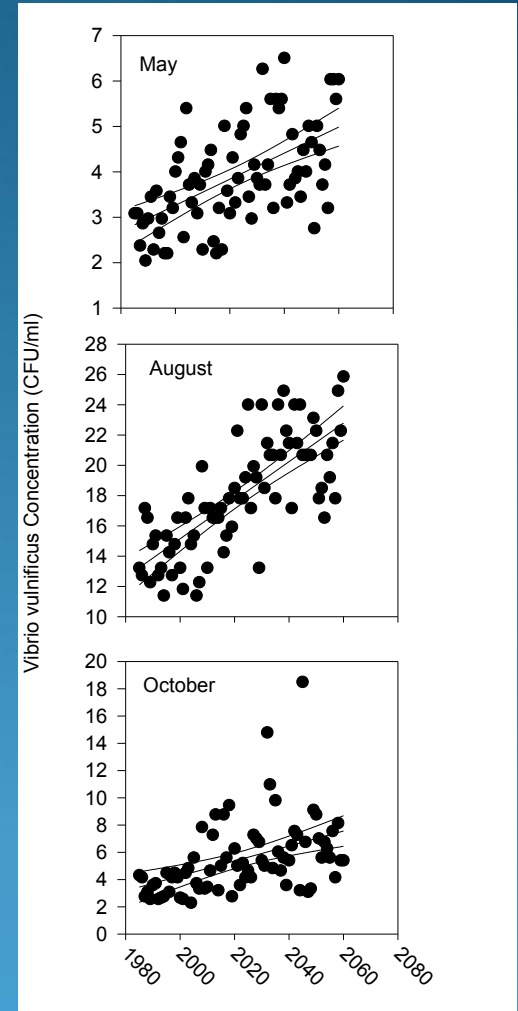
Climate Variability

August 1st



Wet Year

Dry Year



FY 15 Activities

- Stakeholder engagement
 - Refine and prioritize needs and work plans regionally
 - Transition to new regions (Puget Sound, Northeast Atl.)
- Transition to operations
 - Conops plan, skill assessment, user defined products
 - Chesapeake Bay Pilot
- FDA/NOAA Collaborative Activities
 - Implementation of risk assessment models (harvest and time –temp)
 - Validation and improvement where needed (observations)