Quantifying the Benefit of Hazard Services in Communicating Hazardous Environmental Information

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Research Objectives

How do we support the people we are trying to serve?

- How do we improve overall decision support?
- Can we optimize value chains to remove barriers to service equity?
- Can we create systems that get ahead of recovery efforts?
- How do we measure the impact of our decision support tools?

Initial Results

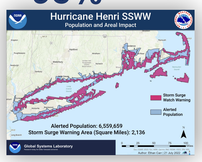
Hurricane Henri

Population

- Difference of 5,792,769 People
- Alerted population decreased by **88%**

Area

- Difference of 2,088 mi^2
- Alerted Area decreased by **98%**



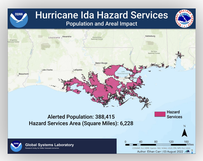
Hurricane Ida

Population

- Difference of 1,770,011 People
- Alerted population decreased by **64%**

Area

- Difference of 1,820 mi^2
- Alerted area decreased by **23%**



Model Development and Modification

Hazard Services

Targeted Community Centric Alerts for Evolving Hazards

- Common Alerting Protocol (CAP) Messaging

Polygons for all Hazards

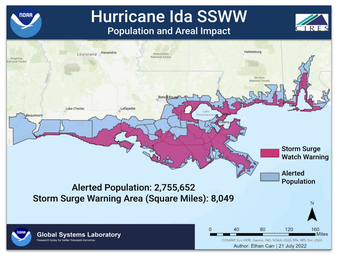
Removes Zone Based Alerts

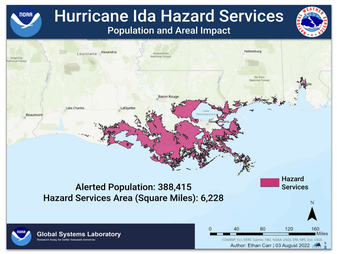
- Minimizes Over-Warning

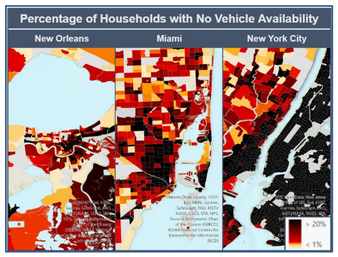
SVI in Hazards Services

Identify Areas for Specialized Messaging

- Unique for different Communities







What We Know

1. Our new model works
   a. Minimizes Over-Warning
   b. Maximizes Coverage
   c. Improved Functionality
2. A perfect model is only as good its perceived utility for is audience
3. Mitigation and preparation can only do so much

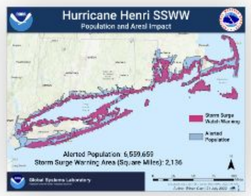
What We Don't Know

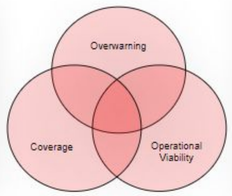
1. The most effective communication practices for each hazard, locality, and population
2. How does HS change operational forecasting and decision-making?
3. Does improved forecasting influence public trust in forecasts?

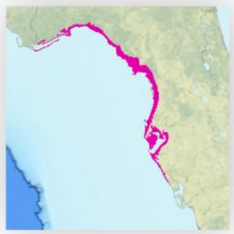
Weather Informatics and Decision Support Division (WIDS)

National Hurricane Center

Proof of Concept → Research and Development → Testing and Evaluation → SVI Implications → Resilience







Future Work

Fully Incorporate SVI Data into HS Products to create more equitable alerting procedures across NOAA/NWS

Proposed Path Forward:

- Work with Operational Forecasters to Identify best practices for SVI Incorporation
- Identify the Roll SVI will take
  - SVI Specific Forecasters?
- Pre-Establish vulnerability factors for different hazards
- Test Method on Storm Surge then expand to other Hazards

Feedback

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