Applying Social Science Findings and Visualization Tools to Communicate Risk

Heidi Stiller
NOAA Office for Coastal Management
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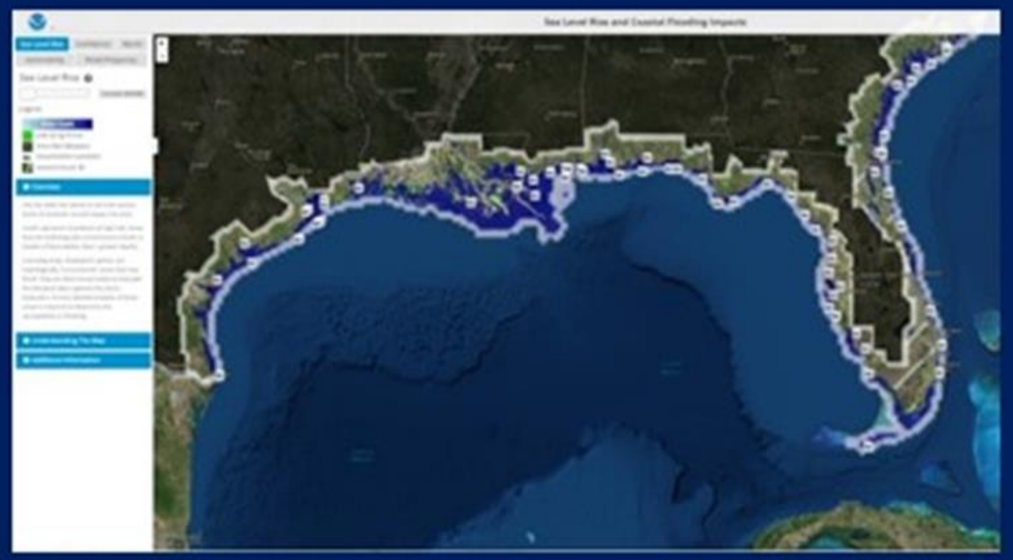
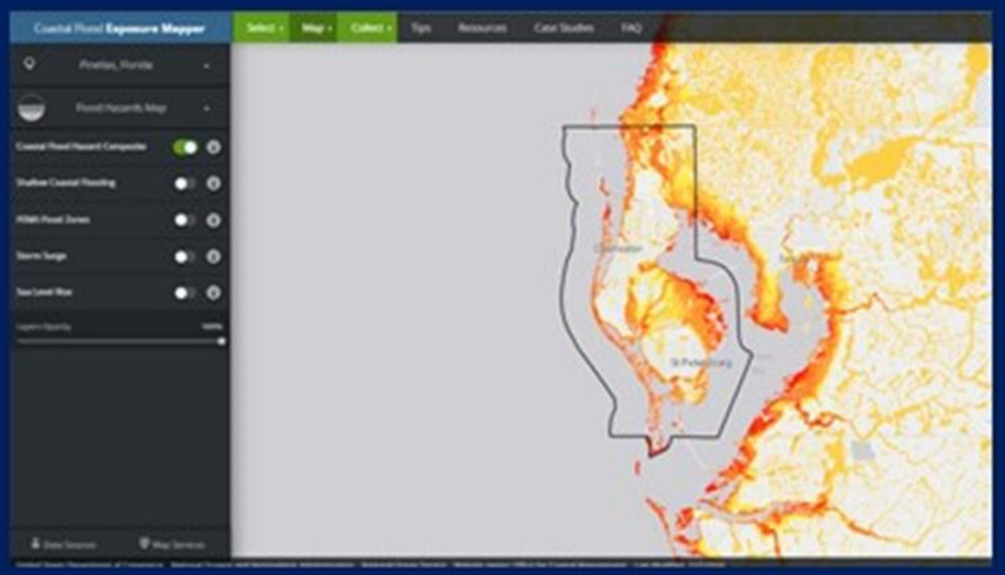
Topics

- Social science findings and theoretical models
- Best practices
- The Digital Coast
- Sea Level Rise Viewer
- Coastal Flood Exposure Mapper





Communicating Risk

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Why Do We Care About Communicating Risk?

- Foster personal preparedness and resilience behaviors

- Foster support for community action and investments

Photo Credit: http://keysnews.com/node/42973

Why is Communicating Risk Complex?

"The crux of risk communication is understanding how risk is perceived."

– Dr. Betty Morrow

Risk = Hazard x Exposure x Probability

Interpretive Frames

Risk = Hazard x Exposure x Probability

PLUS…

- Experiences
- Circumstances
- Social and cultural norms

Feelings Influence Risk Perception and Risk Behavior

Analytic Processing

Experiential Processing

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What Has Research Revealed?

- Theoretical perspectives on risk perception
- Theories and models of behavior change

Theoretical Perspectives on Risk Perception

- Psychometric paradigm
- Cultural risk theory
- Social amplification of risk framework
- Mental models approach

Mental Models

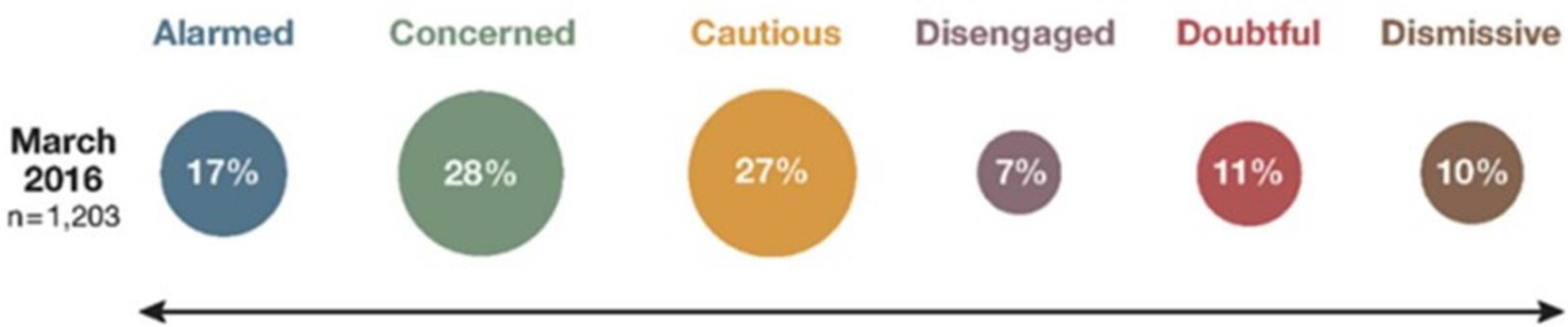
- Built over time based on experiences and social interactions
- Used as a “lens” when we get new information or are faced with a new situation
- Help us apply memory to new tasks
- BUT we tend to ignore new data that does not fit, and seek out data that confirms our model

Theories and Models of Belief and Behavior Change

- Transtheoretical model (stages of change)
- Global warming's six Americas
- Social marketing and community-based social marketing

Transtheoretical Model (Stages of Change)

Global Warming's Six Americas



Proportion represented by area

Source: Yale / George Mason University

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Social Marketing

"The planning and implementation of programs designed to bring about social change using concepts from commercial marketing."

- The Social Marketing Institute

- Influence behaviors and actions
- Information alone rarely changes behaviors
- Focus on decreasing barriers and increasing benefits

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Community Based Social Marketing

Modified from
Fostering Sustainable Behavior, 1999,
McKenzie-Mohr and Smith

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Research Findings

- Worry is a finite resource
- Confirmation bias
- Uncertainty can be hard to communicate; emphasize what is known
- Fear-based communication alone does not lead to action

Research Findings

- Optimism bias
- Refuting false statements can serve to reinforce them
- Social norms are powerful

Message on Placard	Conversion Rate
Help the hotel save energy.	16%
Partner with us to help the environment.	31%
Almost 75% of guests reuse towels.	44%
75% of the guests who stayed in this room reused towels.	49%

Research Findings

Dr. Dennis Mileti

- Department of Homeland Security study on public preparedness
- 3300 respondents

Dr. Mileti's Research

Two Factors Drive Public Preparedness

1. INFORMATION "Received" IF:
   - FROM: multiple sources
   - OVER: multiple communication channels
   - ABOUT: what preparedness actions to take
   - EXPLAINS: how actions cut losses
   - THAT IS: consistent across messages

2. INFORMATION "Observed":
   - CUES: seeing others take actions

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Best Practices

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1. Consider Your Goal

- Information and education
- Behavior change and protective action
- Disaster warnings and emergency information
- Joint problem solving and conflict resolution

2. Know Your Audiences

- Values, interests, attitudes, and beliefs
- Current perception of risk, past experiences
- Preferred information sources
- Barriers and benefits to taking action

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3. Speak to Your Audiences' Interests

4. *Engage* Your Audiences, Start a Dialog

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5. Use Trusted Sources

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