YTD - 8 OF THE 9 BILLION-DOLLAR EVENTS ARE SCS RELATED

U.S. 2022 Billion-Dollar Weather and Climate Disasters

This map denotes the approximate location for each of the 9 separate billion-dollar weather and climate disasters that impacted the United States January – June of 2022.

https://www.ncei.noaa.gov/access/billions/
LEARNING OBJECTIVES – APPLY WHAT YOU SEE & LEARN HERE BACK AT YOUR DEPARTMENT

- Understand SCS and Wildfire property loss drivers

- Identify and begin to develop solutions to key regulatory issues on these perils – complaints, fraud, property coverage, policyholder communication, resilience

- Identify options for property mitigation, integrating the latest science
AGENDA

Day 1 – SCS Focused
- Classroom – Peril science
- Classroom – Regulatory issues baseline
- Lab
  - Break for lunch
- Classroom – Peril & Mitigation science
- Lab
- Classroom – Regulatory Issues Discussion

Day 2 – Wildfire Focused
- Lab (*early start to our day)
  - Break for breakfast
- Classroom – Peril Science
- Classroom – Communication & Risk Awareness tools
LOCATE RESOURCES FOR RISK AWARENESS, MITIGATION, & ENGAGEMENT WITH POLICYHOLDERS ON RISK REDUCTION

LEVERAGING CIPR
CIPR STATE RESILIENCY MAP

For more information, please visit our [NAIC and Federal Resources on Resiliency, Disaster Preparedness, and Response](https://content.naic.org/cipr_resiliency_map.htm)

Click on a state or territory below to learn what disaster resilience information is available on their insurance department website.
SCS Data collected from 19 states

- Hail
  - Insurance Coverage – 13 of 19
  - Mitigation Information & Programs – 2 of 19
  - Roof Information – 3 of 19

- Wind/Tornadoes
  - Insurance Coverage – 16 of 19
  - Mitigation Information & Programs – 4 of 19
  - Roof Information – 4 of 19
## SUMMARY OF EXISTING STATE DOI RISK AWARENESS & OUTREACH/MESSAGING - WILDFIRE

### I. Alaska - Oregon

<table>
<thead>
<tr>
<th>WILDFIRE PREPAREDNESS</th>
<th>Alaska</th>
<th>Arizona</th>
<th>California</th>
<th>Colorado</th>
<th>Idaho</th>
<th>Montana</th>
<th>Nevada</th>
<th>New Mexico</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Inventory</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>“Go bag”/Emergency Kit</td>
<td></td>
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<tr>
<td>Mitigation: Wildfire Prevention/Defensible Space</td>
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<td></td>
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<tr>
<td>Checking Insurance Coverage</td>
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<td>X</td>
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<tr>
<td>Flooding After a Wildfire</td>
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<tr>
<td>Evacuation Planning</td>
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<table>
<thead>
<tr>
<th>POST-WILDFIRE</th>
<th>Alaska</th>
<th>Arizona</th>
<th>California</th>
<th>Colorado</th>
<th>Idaho</th>
<th>Montana</th>
<th>Nevada</th>
<th>New Mexico</th>
<th>Oregon</th>
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<tr>
<td>Filing Insurance Claims</td>
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<tr>
<td>Home Repairs/Avoiding Home Repair Scams</td>
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<tr>
<td>Post-Disaster Claims Guide for consumers (NAIC Publication)</td>
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STATE DOI DISCUSSION

HOW DO STATE DOI’S THINK ABOUT MESSAGING TO POLICYHOLDERS?
MOVING THE NEEDLE ON CLOSING THE PROTECTION GAP
ADDRESSING THROUGH RESEARCH
Demonstrate ability of CAT models to reflect structure-specific and community level mitigation.

- Summary of IBHS & NFPA Firewise USA recommendations
- These mitigation benefits modeled for 3 sites in California, Oregon, Colorado
- A simple cost-benefit analysis of these mitigation features is examined and documented.
Modeled wildfire risk in 4 of 6 CA & OR communities is significant – i.e., a substantial portion or existing HO3 premiums

In California sites, the estimated cat model wildfire risk is 20% to 300% of 2017 average premium of $1643

Opportunity to significantly reduce this risk exists through structural and vegetation mitigation efforts

Moving from a poorly built wildfire resistant structure to a well-built one:

- Structural modifications reduce wildfire average annual loss up to $3,307 /Yr.
- Structural PLUS vegetation modifications reduce average annual loss up to $4,529 /Yr.

Risk reduction is shown to be economically effective in CA & OR over various timeframes given cost assumptions => How to encourage adoption?
IDENTIFYING PROMISING MESSAGES TO INCREASE HURRICANE MITIGATION AMONG COASTAL HOMEOWNERS IN THE UNITED STATES

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²NAIC Center for Insurance Policy and Research, Kansas City, MO, USA
³University of Pennsylvania, Philadelphia, PA, USA
MITIGATION CAN HELP PREVENT LOSSES
The returns to mitigation investment have consistently shown to be economically effective – yet a protection gap persists.

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</thead>
<tbody>
<tr>
<td>Riverine Flood</td>
<td>6:1</td>
<td>5:1</td>
<td>4:1</td>
<td>6:1</td>
<td>8:1</td>
<td>7:1</td>
</tr>
<tr>
<td>Hurricane Surge</td>
<td>not applicable</td>
<td>7:1</td>
<td>not applicable</td>
<td>not applicable</td>
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<td>5:1</td>
<td>6:1</td>
<td>7:1</td>
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<tr>
<td>Earthquake</td>
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<td>13:1</td>
<td>3:1</td>
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</tr>
<tr>
<td>Wildland-Urban Interface Fire</td>
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<td>4:1</td>
<td>2:1</td>
<td>not applicable</td>
<td></td>
<td>3:1</td>
</tr>
</tbody>
</table>

**TABLE 1.** Nationwide average benefit-cost ratio by hazard and mitigation measure. BCRs can vary geographically and can be much higher in some places. Find more details in the report. [nibs.org/mitigationsaves](nibs.org/mitigationsaves)
How can we persuade homeowners to mitigate by retrofitting their homes?
RESEARCH AGENDA

Study 1: Elicitation survey

What are homeowners’ beliefs about retrofitting their homes?

Study 2: Main survey

What beliefs about retrofitting are promising for targeted persuasive messages?

Study 3: Experimental study

Do messages with promising beliefs influence intentions to retrofit?
THEORY OF PLANNED BEHAVIOR

- Behavioral beliefs
- Normative beliefs
- Control beliefs
- Attitudes
- Subjective norms
- Perceived self-efficacy
- Intentions
- Behavior
One way to protect your home against severe weather is by replacing your roof with a roofing system that resists high wind weather events, like hurricanes and tropical storms. A high wind resistant roof may use heavier shingles, metal roof panels, or concrete tiles.
STUDY 1: ELICITATION SURVEY

- 10-minute online survey
- Coastal homeowners in Alabama and Florida
- Open-ended beliefs about retrofitting
  - Behavioral
  - Normative
  - Control
SOME FINDINGS

ADVANTAGES
Protection

BARRIERS
Expense

REFERENTS
Types of people
STUDY 2: MAIN SURVEY

- 15-minute online survey
- Coastal homeowners in Alabama and Florida
- Belief statements about retrofitting
- Intention to retrofit in the next year
**BELIEFS AND INTENTION**

- **My family is likely to install a high wind resistant roof.**
  - Strongly disagree
  - Strongly agree

- **If I install a high wind resistant roof, my family will be protected.**
  - 1
  - 5

- **How likely is it that you will install a high wind resistant roof in the next 12 months?**
  - Definite will not
  - Definitely will
SOME PROMISING BELIEFS

- **Family**
  - My parents are likely to install a high wind resistant roof

- **Community**
  - My neighbors are likely to install a high wind resistant roof

- **Protection – family**
  - If I install a high wind resistant roof, my family will be protected

- **Protection – property**
  - If I install a high wind resistant roof, my belongings will be protected
STUDY 3A: PILOT EXPERIMENT

- 10-minute online experiment
- Coastal homeowners in Alabama and Florida
- Random assignment to treatment (targeted messages) or control
- Belief endorsement
My family is likely to install a high wind resistant roof.

Susan, 68, installed a high wind resistant roof

A lot of residents in coastal areas say that their family wants to install a high wind resistant roof. After a few years of living in her home, Susan decided to install a high wind resistant roof. “I understood how important it was to my family that we have a stronger roof. After learning this, it became clear that I had to make this modification to my house.”
Most people who live on the coast think their neighbors will install a high wind resistant roof. Roberto agrees, which is what led him to replace his old roof with a high wind resistant roof. “I heard that my neighbors were planning to install a high wind resistant roof. After learning this, I knew I had to install a high wind resistant roof.”
MESSAGES INFLUENCE BELIEFS

Belief endorsement (1-5)

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td><strong>2.9</strong></td>
<td>2.5</td>
</tr>
<tr>
<td>Community</td>
<td>2.8</td>
<td><strong>2.7</strong></td>
</tr>
</tbody>
</table>

* **Significant difference**
STUDY 3B: MAIN EXPERIMENT

How likely is it that you will install a high wind resistant roof in the next 12 months?

1
Definitely will not

4
Definitely will

Susan, 68, installed a high wind resistant roof
A lot of residents in coastal areas say they want to install a high wind resistant roof. Susan decided to do so after years of living in her home. "I understood the importance of having a strong roof and that we have a strong family that we love. Without learning this, it became clear that I have to make a modification to my house."

Roberto, 63, installed a high wind resistant roof
Most people who live on the coast think their neighbors will install a high wind resistant roof. Roberto agrees, which is what led him to replace his old roof with a high wind resistant roof. "I heard that my neighbors were planning to install a high wind resistant roof. After learning this, I knew I had to install a high wind resistant roof."
ANTICIPATED EFFECTS: MESSAGE EXPOSURE WILL INCREASE INTENTION TO RETROFIT

![Bar chart showing intention to install high wind roof for Family and Community, with bars for Treatment and Control groups.](image-url)
MESSAGES WILL INCREASE TARGETED BELIEFS, THEREBY INFLUENCING INTENTION TO RETROFIT

How likely is it that you will install a high wind resistant roof in the next 12 months?

My family is likely to install a high wind resistant roof.

MESSAGE EXPOSURE

TARGETED BELIEF

INTENTION TO RETROFIT
QUESTIONS?

We gratefully acknowledge funding for this research from the University of Alabama and the Florida Division of Emergency Management.