

Science Communication Portfolio

An example portfolio on Sea Level Rise



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Introduction to your Science Communication Portfolio: Sea Level Rise

Step 1: What are your communication goals?

To inform and educate the general public about the science surrounding Sea Level Rise (SLR) and the consequences behind SLR, and provide them with actions toward adaptation.

Step 2: Understanding your audience

- **Who are they?**

General public with some knowledge that SLR is occurring, but likely aren't familiar with the science and research in this area or what the major consequences might be.

- **Why are they here?**

They are active on social media, curious to hear what we have to say, and like to be informed regarding important science issues that might affect their everyday lives.

- **Why should they care?**

They live near the coast, have friends and family that do, and/or just like to vacation in coastal areas.

- **What will you send them away with?**

Sea level rise is an important issue that we can and need to start adapting to, as a nation and as a global community. They can begin to enact change by informing their local government and city council officials about SLR.

- **How can you best reach them?**

Using the modules in this communication training portfolio, our audience will be exposed the same information through a variety of communication mechanisms.

- **What might they be hesitant to hear?**

Large, global issues are difficult to comprehend from a personal action level. We want to make sure they understand that these messages are about raising awareness so changes can be made within their communities.

Step 3: Defining your “take-home” messages

1. Describe the problem:

Sea level is rising – and at an accelerating rate – especially along the U.S. East Coast and Gulf of Mexico.

2. Talk about an overall solution (“We found that...”):

Cities and towns can integrate the latest information about sea-level rise into coastal planning and take new steps to prepare for rising seas.

3. Offer specific actions that could be taken:

Cities can create incentives for flood-proofing homes and local governments can invest in key infrastructure to deal with higher seas.

4. Relay the benefits from taking action:

Increased tidal flooding is essentially guaranteed; however, communities that prepare can make themselves more resilient in the face of rising tides.

Step 4: Establishing your “And, But, Therefore” statement

Sea level rise is occurring around the globe as the result of increasing temperatures **AND** many island countries and cities along the East Coast of the U.S. and Mexico are already experiencing increased flooding. **BUT**, there are ways we can to begin adapting to sea level right now. **THEREFORE**, we need more public awareness surrounding this issue in order for coastal communities prepare for a sustainable future.

Verbal Module: Sound Bites – Sea Level Rise

Adam Markham, from Wilton, Conn., is co-author of “National Landmarks at Risk and director of climate impacts for the Union of Concerned Scientists.



“There are a lot of threats from climate change and people really know very little about it,” Markham said in an interview Tuesday afternoon.

Even those who contest the science evidence will have to face the consequences of climate change, he said. “It is still going to flood your basement,” he said. “Disbelief doesn’t get in the way of climate change.”

Verbal Module: Elevator Pitch – Sea Level Rise

Can you picture the long beaches of Waikiki, gently dotted with tourists holding tropical cocktails with slices of pineapple on the rim and twirling umbrellas?

Sea level rise is a major concern for the residents of Hawai'i. Just like Florida and the Carolinas, we risk losing our beautiful (and valuable) coastal communities to the ocean.

Sea level rise is a direct consequence of global warming. It is causing the water in the oceans to expand, which is being joined by water from melting landlocked glaciers.

Unless we prepare for sea level rise now, Hawai'i and other coastal communities, as well as island nations around the world, will lose their land, their identity, and a large part of their economic viability.

As a state surrounded by seawater, we need to start working closely with our local government and civil engineers to develop ways to help our island communities adapt to sea level rise.



Verbal Module: 3-Minute Talk – Sea Level Rise

An educational [video](#) on SLR by Phil Thompson, Ph.D. (Associate Director, University of Hawai'i Sea Level Center).

Verbal Module: Formal Presentation – Sea Level Rise

Excerpt from a Union of Concerned Scientists [webinar](#) on SLR hosted by Erika Spanger-Siegfried, M.S. (Senior Analyst at UCS) and Melanie Fitzpatrick, Ph.D. (Climate Scientist at UCS).

Written Module: Twitter – Sea Level Rise



Carina Barnett-Loro
@carinablora

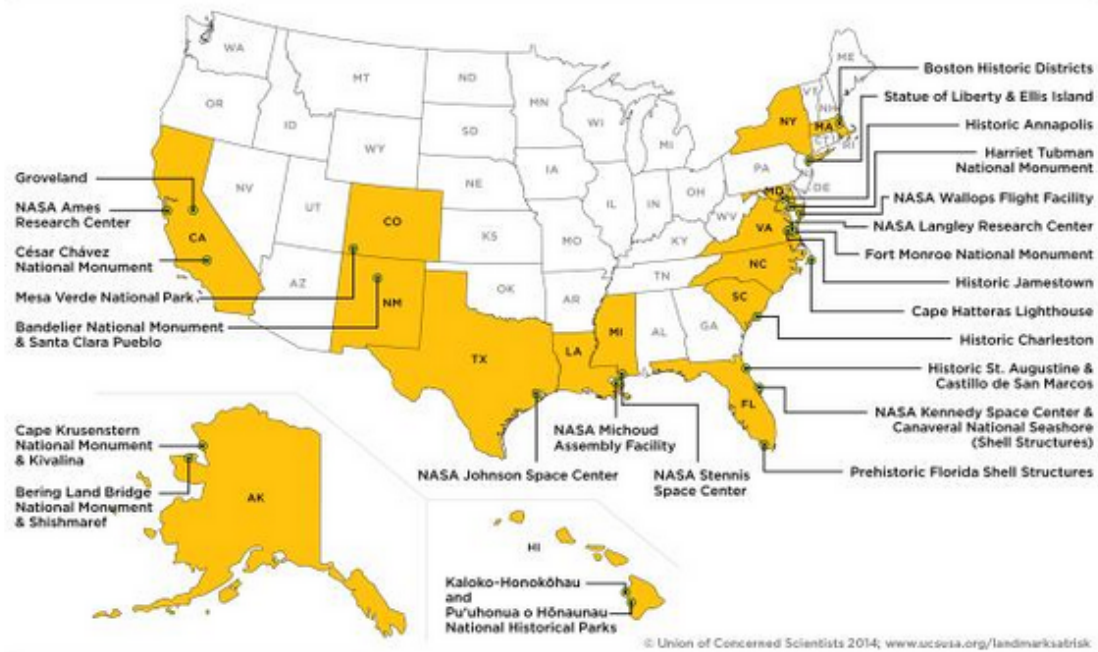


Following

From sea to rising sea: j.mp/1qRRnYd
Historic US sites threatened by
[#climatechange](#). [#LandmarksAtRisk](#)



National Landmarks at Risk: Case Study Sites



RETWEETS

32

FAVORITES

10



10:10 AM - 20 May 2014

Written Module: Facebook – Sea Level Rise



Union of Concerned Scientists

Non-Profit Organization · 80,805 Likes · May 20, 2014 · Edited ·



The growing consequences of climate change are putting many of the country's most iconic and historic sites at risk.

From Ellis Island to the Everglades, Cape Canaveral to California's César Chávez National Monument, these sites symbolize values that unite all Americans — patriotism, freedom, democracy, and more — and together help weave the very fabric of our shared history:

<http://j.mp/landmarksatrisk>

Written Module: Memo for Policymakers – Sea Level Rise

Climate Change and Health Risks

Sample Policymaker Memo to Inform on H.R. 12345

H.R. 12345, the “Sea Level Rise Resiliency Act¹,” would reduce the health risks from flooding caused by sea level rise that millions of Americans face every year. I urge you to support H.R. 12345.

Flooding creates serious health risks.²

Heavy and prolonged precipitation can lead to a major flooding event and a dangerous cascade of health risks that can linger for months or even years.

In the days following a flood, drivers can drown as they attempt to navigate submerged roadways. Sewage systems can back up. Water sources may become contaminated. Even after the waters recede, the health risks continue as mold proliferates inside wet and damaged structures and flood victims struggle with the emotional toll of the disaster.

Flooding events are becoming more common in a warming world.

Temperatures in the United States have already risen more than two degrees Fahrenheit (2°F) over the past 50 years, largely because of heat-trapping emissions³, and are expected to keep rising throughout the next few decades and likely much longer.

Measurements have shown that the number of heavy precipitation events has increased by more than 30 percent since 1900 in the United States—and the problem will likely grow worse in the coming years, leaving more Americans vulnerable to the immediate and lingering health impacts of flood events.

Top five hidden health risks of extreme precipitation and flooding:

1. **Drowning while driving:** Almost half of 2010 flood fatalities involved people who drowned while attempting to drive through floodwaters.
2. **Waterborne diseases contaminating drinking water:** Extreme precipitation and flooding can sometimes overwhelm drinking water infrastructure and wells, which reduces or prevents water purification.
3. **Sewage back-up in plumbing or basements.**
4. **Bacteria, sewage, and other contaminants in waterways:** During flooding, untreated sewage, pesticides, and street contaminants (motor oil, dog excrement, etc.) can flow into local rivers, lakes, ponds, and even ocean beaches.
5. **Mold and dangerous indoor air quality:** Water intrusion anywhere in a building can cause toxic mold to grow in ceilings, walls, or insulation.

I urge you to support H.R. 12345 to help communities reduce the health risks of sea level rise-caused flooding.

¹ This is an imaginary bill made up for the purpose of this exercise.

² http://www.ucsusa.org/global_warming/science_and_impacts/impacts/global-warming-and-flooding.html#.VRLLi_nF9d8

³ http://www.ucsusa.org/global_warming/global_warming_101/

Written Module: Op-Ed – Sea Level Rise



News Video TV Opinions More...

Political Op-Eds Social Commentary iReport

East Coast, Gulf Coast should get used to tidal floods

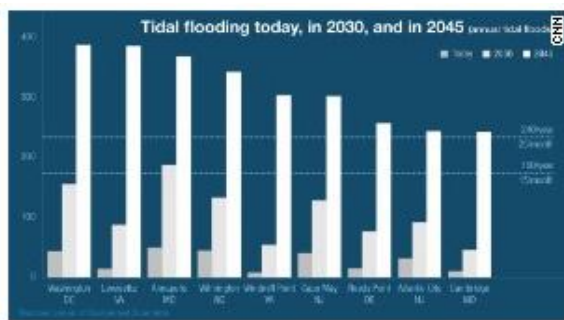
By **Melanie Fitzpatrick** and **Erika Spanger-Siegfried**

updated 12:00 PM EDT, Tue October 21, 2014

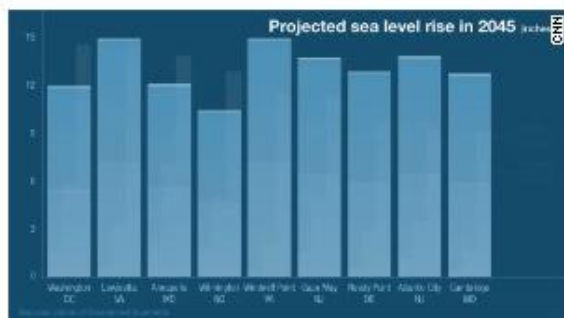
Two years ago next week, Superstorm Sandy barreled through parts of the United States, causing \$65 billion worth of damage to communities up and down the Eastern seaboard.

Sandy, which brought extensive flooding to New York and Atlantic City, was described by many as a once in a generation storm.

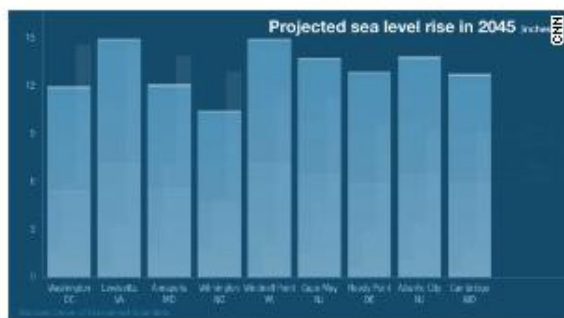
But in the coming years, thanks to global warming, it won't take superstorms like Sandy to bring regular and potentially dangerous flooding to parts of the United States.



Tidal flooding in 2030 and 2045



Projected sea level rise in 2045



Projected sea level rise in 2045

Tidal flooding used to be a relatively rare occurrence along the East Coast and the Gulf of Mexico, generally happening only occasionally at high tide or king tide, when the sun and the moon are aligned. But based on what scientists already know about climate change, it is clear that sea levels are going to rise over the next few decades. Coastal flooding is expected to occur even more often and cause more disruption. This will redefine how and where coastal residents live, work, and go about their daily routines.

High tides are having a greater impact now for two reasons. First, our coasts are more heavily developed, so higher tides affect more people and infrastructure. Second, these tides are now occurring along with elevated -- and rising -- sea levels.

(Excerpt, read full article [here](#))

The Carbon Brief

Blog

Worst case scenarios of sea level rise, and why scientists and policymakers consider them

21 Oct 2014, 17:52 | Robert McSweeney



Thames Barrier | Shutterstock

Sea levels could rise by a maximum of 190 centimetres by the end of the century, according to a new study, which examines a worst case scenario for sea level rise.

In reality, the amount of sea level rise we get is likely to be less than that. But scientists and policymakers examine such 'worst case' scenarios to safeguard against climate risks.

Upper limit

With 10 per cent of the world's population living less than 10 metres above sea level, the threat of coastal flooding is significant. The Intergovernmental Panel on Climate Change (IPCC) expects sea level rise to cause a 'significant increase' in sea levels extremes and the risk of coastal flooding.

The new study, published in *Environmental Research Letters*, considers the assessment of 13 ice sheet experts. They conclude that the contribution from ice sheets is likely to be greater than projected by the IPCC. The paper suggests that sea levels could rise by as much as 190 cm this century.

(Excerpt, read full article [here](#))

Appendix I: Understanding Your Audience

Print this page and post for quick reference

Understanding Your Audience

1 Who are they?

Who are you trying to engage? Teachers? Doctors? Relatives? A broader, more general audience? *What prior knowledge (if any) might they have regarding your topic?*

2 Why are they here?

What do they hope to learn from you, as an expert? How will this impact their lives or inspire their curiosity? Are they coming with an open mind, preconceptions, or an agenda?

3 Why should they care?

What does your audience value? What keeps them awake at night? *How is your work important to them?* Remind them that we are all in this together, and demonstrate that you empathize with their needs, both as a scientist and as a person.

4 What will you send them away with?

Can you leave them with a good dinner conversation topic? An action item they can share with friends? Word-of-mouth is still an effective communication strategy.

5 How can you best reach them?

People vary in how they receive information. How might you best connect with your audience? Are there images or stories they might identify with?

6 What might they be resistant to hear?

Remember, everyone has opinions. Be aware of concepts, ideas, and action items that may cause your audience to dismiss or downplay your take-home messages.

Appendix II: Ground Rules for Presentations

- Font: ≥ 24 point, san serif (Calibri, Ariel). For a dark room, use light text on dark background.
- Colors: Many people are red/green color blind, so convert to greyscale to see contrast.
- Text: No more than 3-4 points per slide, 40 words max.
- Visuals: A picture is still worth 1000 words, but they should communicate your message quickly. *Don't* use complex figures with axes in small font that you have to explain point by point. *Do* use your take-home message to think about how to visualize your point. Try to take up as much space as possible with your figures.
- Move labels and keys onto the graphic itself. Use a graphic editing program or tools in your presentation software to label and animate parts of the graphic you want to highlight for your audience. This allows you to guide your audience through a graphic in a more engaging way than relying on a graphic and bullet-pointed text.
- Titles: Think “news headline”, not a label like “this slide shows...”. Action will engage your audience. In many cases, you can introduce a topic with a single slide and then drop title text from subsequent slides; this gives you more space to focus on graphics.
- *You are part of the presentation!* Practicing will get you away from relying too heavily on notes or on-screen text, giving you more confidence to move around. Imbibe your energy into the presentation and make eye contact with your audience. If humor comes naturally to you, embrace it. If not, try just pausing for effect – it allows more time for your audience to process what you were saying and the pause adds significance.
- Do not go over time (practice). Everyone, including non-scientists, hates that.

Appendix III: Sources and Resources

Sound Bites

stamford.dailyvoice.com/news/wilton-scientist-warns-climate-change-threatens-us-landmarks

3MT

Video: vimeo.com/118953306

University of Hawai'i Sea Level Center: uhslc.soest.hawaii.edu/

Formal Presentation

Video: [^ \[ˇ c Ě^ B&ç* \ PæÖ \[,](#)

Twitter

[@carinablora](https://twitter.com/carinablora)

Facebook

facebook.com/unionofconcernedscientists?ref=br_tf

Op-Ed

cnn.com/2014/10/21/opinion/fitzpatrick-east-coast-flooding/index.html

Blog

carbonbrief.org/blog/2014/10/worst-case-scenarios-of-sea-level-rise-and-why-scientists-and-policy-makers-consider-them/