

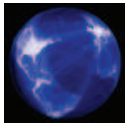


Annotated Script: Sea Level Rise

Show	Say	Notes and Rationale
<p>Image 1: Earth with Vegetation</p> 	<p>Welcome. My name is _____ and I'm an educator here at _____. This is our planet.</p>	<p>Before launching the prepared interpretation, allow time for visitors to understand and inquire about the information shown with this image. Point out where you live to orient the audience.</p> <p>The visual helps to establish the interpretation as a matter of global scale and importance.</p> <p>Introducing yourself as an educator at your institution establishes you, the presenter, as an effective messenger of this information and a trusted resource (Why Zoos and Aquariums Matter, Falk, et. al. 2007 AZA).</p>
<p>Image 2: People around the world working on solutions</p> 	<p>I'm here to talk with you about how people like you and me are coming together in their communities to address an important challenge of our time. The issue is rising sea levels. Increasingly, people are recognizing our shared responsibility to take action to protect our ocean and coastal habitats. To safeguard these places that we all depend on, we need to address the cause of the rising sea.</p>	<p>The talking point here cues the Value of <i>Protection</i>, which research has shown to be an effective way of productively orienting people to ocean conservation as a social issue.</p> <p>The images foreshadow the frame element of Solutions, so that stating the problem doesn't cue up fatalistic thinking.</p>
<p>Image 3: Facebook Friendships</p> 	<p>And if we want to think for just a moment about the ways we can come together to protect our planet, here is a representation of just 1% of pairs of friends on Facebook. It's amazing to think about how this kind of interconnection can allow people to work together on big issues and the big solutions that address them.</p> <p>But first, it's important for us to understand those big issues. So let's talk about what sea level rise is and why it is happening.</p>	<p>The talking point here cues the Value of <i>Interconnection</i>, which research has shown to be an effective way of productively orienting people to a range of environmental issues, and which also helps to continue the focus on the possibility of change.</p>

Show

Say

Notes and Rationale

Image 4:
Earth at
Night



Take a look at this photograph. In this image, we see our planet from space at night. This view reveals places around the world that are using electric lighting.

To generate electricity, we usually burn fossil fuels, including coal, oil and natural gas. For example, most of the electricity used in the United States is generated by burning coal.

Burning fossil fuels releases carbon dioxide into the atmosphere. And while “regular” levels of CO₂ are a necessary part of life on earth, here, we are talking about “rampant” levels of CO₂ – excessive amounts of the gas.

When this rampant CO₂ goes into the atmosphere, it builds up and acts like a heat-trapping blanket. In the same way that a blanket traps the heat from a person’s body, the “blanket effect” of rampant CO₂ traps Earth’s heat and warms the the atmosphere and the ocean. *{Use hand gestures to model a blanket covering the globe.}*

As the ocean warms, it expands and takes up more space. This process is called thermal expansion - warmer water expanding. That’s a major reason why the ocean is rising.

And, of course, another reason that the ocean is rising is that warmer global temperature is causing ice caps and glaciers to melt.

Rising seas affect people all around the world. We are all familiar with the images of beach homes destroyed and streets flooded near the coast. But it’s not just people who live on the coast who are affected. Because coasts are such an important resource for transportation, what affects the coasts affects us all. Let me show you an example.

Offering explicit cues to orient to new images helps visitors track the narrative more effectively.

When introducing the cause of ocean and climate change, always start the Explanatory Chain with fossil fuels (rather than ‘carbon dioxide’ or ‘human activity.’ The way people understand the cause of a problem has a major influence on the way they think about solutions, so effectively framing the role of fossil fuels is essential.

Two tested explanatory techniques are used here to help the public understand the basic mechanism of climate change:

- The distinction between *Regular and Rampant* CO₂, helps visitors add to the knowledge they probably already hold about carbon dioxide – that it plays a role in human respiration and photosynthesis. The taxonomy allows them to hold the newer, counter-intuitive information (that CO₂ can also play a harmful role) alongside existing concepts.
- The second Explanatory Metaphor is *Heat Trapping Blanket*. This easy-to-grasp analogy focuses the public on the key characteristic of carbon dioxide: it traps heat. Use a hand gesture to mimic the blanket covering the globe when you introduce this metaphor.

Here we explain two different mechanisms that are contributing to rising oceans, without getting bogged down in details.

Show

Say

Notes and Rationale

Image 5:
Air Traffic



This representation shows air traffic around the world. You can see the number of airports that are located on the coast. Businesses around the world use these airports to transport supplies – the things we all use everyday. These airports are used by our friends, neighbors and family. As the ocean rises, it will cover some of these airports, disrupting the entire system. And of course, it’s not just airports that are on the coast. Shipping, railroads, and other infrastructure that we all depend upon are there too. Because we are all affected, we all have a stake in protecting the world’s coastlines, wherever they may be.

By emphasizing the global, and human, impacts of sea level rise, this “beat” in the narrative communicates that we all have a stake in this issue.

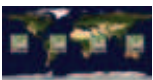
Image 6:
Flooded
Wetland



This representation shows air traffic around the world. You can see the number of airports that are located on the coast. Businesses around the world use these airports to transport supplies – the things we all use everyday. These airports are used by our friends, neighbors and family. As the ocean rises, it will cover some of these airports, disrupting the entire system. And of course, it’s not just airports that are on the coast. Shipping, railroads, and other infrastructure that we all depend upon are there too. Because we are all affected, we all have a stake in protecting the world’s coastlines, wherever they may be.

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Image 7:
Marsh
Wildlife

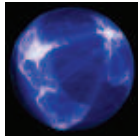


Sea level rise is already affecting many local ecosystems - and the human systems that depend on them. For example, tide gauges show that sea level rise in Baltimore has been nearly double the global average during the 20th century. In fact, experts predict that by 2050, the sea level will rise in Maryland by over 2 feet. Let me show you the impact that sea level rise has already had in Maryland. 13 Chesapeake Bay islands have disappeared in recent memory. And, each year, there are over 500 acres of shoreline lost to erosion. If sea level continues to rise, tidal wetlands along the coasts would be flooded.

This beat in the narrative specifies negative effects on marine life using a concrete local/regional example. When selecting examples tailored to your region, seek out scientific research to support the evidence of impacts being observed. Avoid including speculative findings. In pilot testing, this example was particularly memorable and compelling for visitors. Balancing this startling fact with a reasonable, even tone is an important framing technique here.

Show

Image 8:
Facebook
Friends



Say

Now that we understand the problem – rising sea levels – we can talk about something more hopeful: the fact that people like us are already working together to tackle the underlying cause of the problem. People are finding a variety of ways to reduce the use of fossil fuels, so that we can slow down, and eventually stop, the “blanket effect” caused by rampant carbon dioxide.

For example, in Baltimore, with funding from the state of Maryland, the city launched the Baltimore Energy Initiative to streamline and expand the city’s energy conservation programs, build awareness, and help rally communities around the issue. The Initiative is helping businesses make their buildings more energy efficient. And, it is training neighborhood leaders to be “Energy Captains.” Energy Captains help their neighbors access free energy-saving equipment for their homes and lead by example for how to conserve energy. So far over 15,000 Baltimore residents and business owners have participated, and this is helping the city use 15% less energy by 2020.

And of course, it’s not just Baltimore. There are similar programs in Chicago (Neighborhood Energy Challenge) and Oregon (Neighborhood Sustainability Stewards) and in Europe (Energy Neighborhood). In cities, towns, and rural communities around the world, people are taking action to address sea level rise – and climate change, one of the greatest challenges of our time.

In an interconnected global society like ours, we can work together more easily than ever before. And we can also spread the word about important problems, and sensible solutions, quickly and easily. Let’s talk about what we can do together to protect the places we depend on, and protect the habitats of the other species we share the planet with. Let’s talk about what we all can do in our communities to help decrease the release of rampant carbon! What ideas do you have to reduce energy use? *{Discuss ideas with visitors.}*

Notes and Rationale

This section makes use of several important framing techniques. It evokes the Values of *Responsible Management* and *Protection*, restates *Rampant CO2*, and offers a concrete example of a collective Solution. The visual reinforces the idea that the topic is about a big picture issue that includes all of us.

To customize the presentation, find a similar Solution that is happening in your region, or substitute another example. Make sure that the example chosen is at a systems-scale.

Invite your audience to keep the conversation going with specific questions that keep the conversation productive. Offer additional resources and information about the solutions mentioned during the presentation.