

OCEAN CLASSROOM LIVE!

Hurricanes and Rising Seas (Episode 12)

EDUCATOR SUPPORT MATERIALS

THE
UNIVERSITY
OF RHODE ISLAND
GRADUATE SCHOOL
OF OCEANOGRAPHY

With rising sea levels, coastal environments and communities are increasingly vulnerable to flooding from strong storms, including hurricanes. Join Teresa Crean from Rhode Island Sea Grant and URI's Coastal Resources Center and host Holly Morin of the Inner Space Center for a discussion about climate change, coastal storms and the tools to help us prepare for flooding in an uncertain future.

Discussion Questions

- What is erosion?
- What natural barriers protect shorelines from storms?
- How can coastal communities prepare for rising sea levels and storms?

Resources

Graduate School of Oceanography

As one of the nation's premier academic oceanographic institutions, the University of Rhode Island's Graduate School of Oceanography (GSO) educates marine scientists, students, policymakers, business leaders and citizens and helps develop the knowledge and skills necessary to address present and future marine challenges.

- GSO: <https://web.uri.edu/gso/>
- Inner Space Center: <http://innerspacecenter.org/>
- Rhode Island Teachers At Sea:
<https://web.uri.edu/gso/research/outreach/rhode-island-teachers-at-sea-program/>
- Narragansett Bay Classroom: <https://web.uri.edu/gso/research/outreach/narragansett-bay-classroom/>
- GSO Facebook: <https://www.facebook.com/URIGSO/>
- GSO YouTube: <https://www.youtube.com/c/URIGraduateSchoolofOceanography>
- Hurricanes: Science and Society- <http://www.hurricanescience.org/>
- Meet Teresa- https://www.crc.uri.edu/contacts_page/teresa-crean/

Other Resources

- RI Shoreline change maps: http://www.crmc.ri.gov/maps/maps_shorechange.html
- Ninigret Pond salt marsh restoration and enhancement project: <http://www.crmc.ri.gov/habitatrestoration/npsaltmarsh.html>
 - YouTube video showing restoration: <https://youtu.be/Eov6ra9q4hQ>
- Take a Tour- Green Infrastructure projects in RI: <https://uri.maps.arcgis.com/apps/Shortlist/index.html?appid=cbd9d6ae7a9d40b0b648432e95e66aec>
- Rhode Island Coastal Property Guide <http://www.beachsamp.org/coastalpropertyguide>
- My Coast: <https://mycoast.org>
- NOAA Ocean Service, high tide flooding: <https://oceanservice.noaa.gov/facts/nuisance-flooding.html>
- FEMA, Flood Map Service Center: <https://msc.fema.gov/portal/home>
- FEMA, Ready.gov, emergency supply kit: https://www.ready.gov/sites/default/files/2020-03/ready_emergency-supply-kit-checklist.pdf
 - Hurricane preparedness geared for kids/families/seniors: <https://www.ready.gov/kids>
- National Hurricane Center FAQ: <https://www.nhc.noaa.gov/faq.shtml>
- Know your Zone (evacuation zone): <https://flash.org/2017EvacuationZones.pdf>
- FloodSmart: <https://www.floodsmart.gov/flood-map-zone/find-yours>
- Beach SAMP coastal erosion maps: <http://www.beachsamp.org/coastal-erosion-maps/>

Suggested Standards

[*Next Generation Science Standards*](#) K-12 Performance Expectations relating to collecting data, ecosystems/animals.

Elementary School

K: Earth's Systems

- K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.

K: Earth and Human Activity

- K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

Grade 2: Earth's Systems

- 2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

Grade 3: Earth's Systems

- 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
- 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.

Grade 3: Earth and Human Activity

- 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

Grade 5: Earth and Human Activity

- 5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Middle School

MS: Earth & Human Activity

- MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects

High School

HS: Earth and Human Activity

- HS-ESS3-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

Ocean Literacy Principles

OLP3: The Ocean is a major influence on weather and climate