Ocean Expert Exchange - Educator Resources

TOPIC - ***Seeing Red: Florida's Harmful Algal Bloom***

FEATURED EXPERT - ***Dr. Lisa Krimsky of UF IFAS Extension & Florida Sea Grant***

TARGETED LEARNING STANDARDS:

ELEMENTARY SCHOOL NGSSS:

SC.4.L.17.4: Recognize ways plants and animals, including humans, can impact the environment.

SC.5.L.15.1: Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

MIDDLE SCHOOL NGSSS:

SC.7.L.17.3: Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

SS.8.G.5.2: Describe the impact of human modifications on the physical environment and ecosystems of the United States throughout history.

HIGH SCHOOL NGSSS:

SC.912.N.1.1: Define a problem based on a specific body of knowledge; pose questions, conduct systematic observations, examine books and other sources of information to see what is already known, review what is known in light of empirical evidence, plan investigations...

SC.912.L.17.4: Describe changes in ecosystems resulting from seasonal variations, climate change and succession.

SC.912.L.17.6: Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.

SC.912.L.17.8: Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

SUPPLEMENTAL RESOURCES:

- Lessons - U.S. National Office for Harmful Algal Blooms Resources for Educators (Grades 6-12)
- Resource Library - Florida Sea Grant Harmful Algal Blooms in Florida (Middle-High School)
- Resource Library - NOAA NOS Gulf of Mexico/Florida: Harmful Algal Blooms (Middle-High School)
- Resource Library - Florida Dept. of Environmental Protection Harmful Algal Blooms & Red Tide (Grades 4-12)
- Resource Library - Florida Fish and Wildlife Conservation Commission FWRI Red Tide (Middle- High School)
- Resource Library - NOAA NCCOS Gulf of Mexico Harmful Algal Bloom Forecast (Middle-High School)
- Video Short - American Chemical Society The Terrifying (but Awesome) Science Behind Red Tides (Grades 4-12)
- Video Short - SciShow News Why Florida's Red Tide Is Killing So Many Animals (Grades 4-12)
- Video Short - DOST Philippine Nuclear Research Institute Harmful Algal Blooms (HAB) (Grades 4-12)
- Video & Supporting Content - South Florida PBS *Changing Seas*: Toxic Waters (Middle-High School)
- Reading - Frontiers for Young Minds Why Were the Water and Beaches in West Florida So Gross... (Grades 4-8)
- Reading - Xylem Inc. *Mission:* Magazine - From Cells to Satellites (Middle-High School)
- Reading - Florida Sea Grant State of the Science for *Karenia brevis* (Red Tide) in Florida (Middle-High School)
- Reading - UF IFAS How Red Tides Impact Manatees (Middle-High School)
- Reading - AAAS Science in the Classroom Algal toxin's effect on oysters (High School)
- Reading - Tampa Bay Times Is it safe to eat seafood in the Tampa Bay area during Red Tide? (Grades 6-12)
- Reading - UF IFAS Quantifying the Socio-Economic Impacts of HABs in Southwest Florida in 2018 (Grades 8-12)