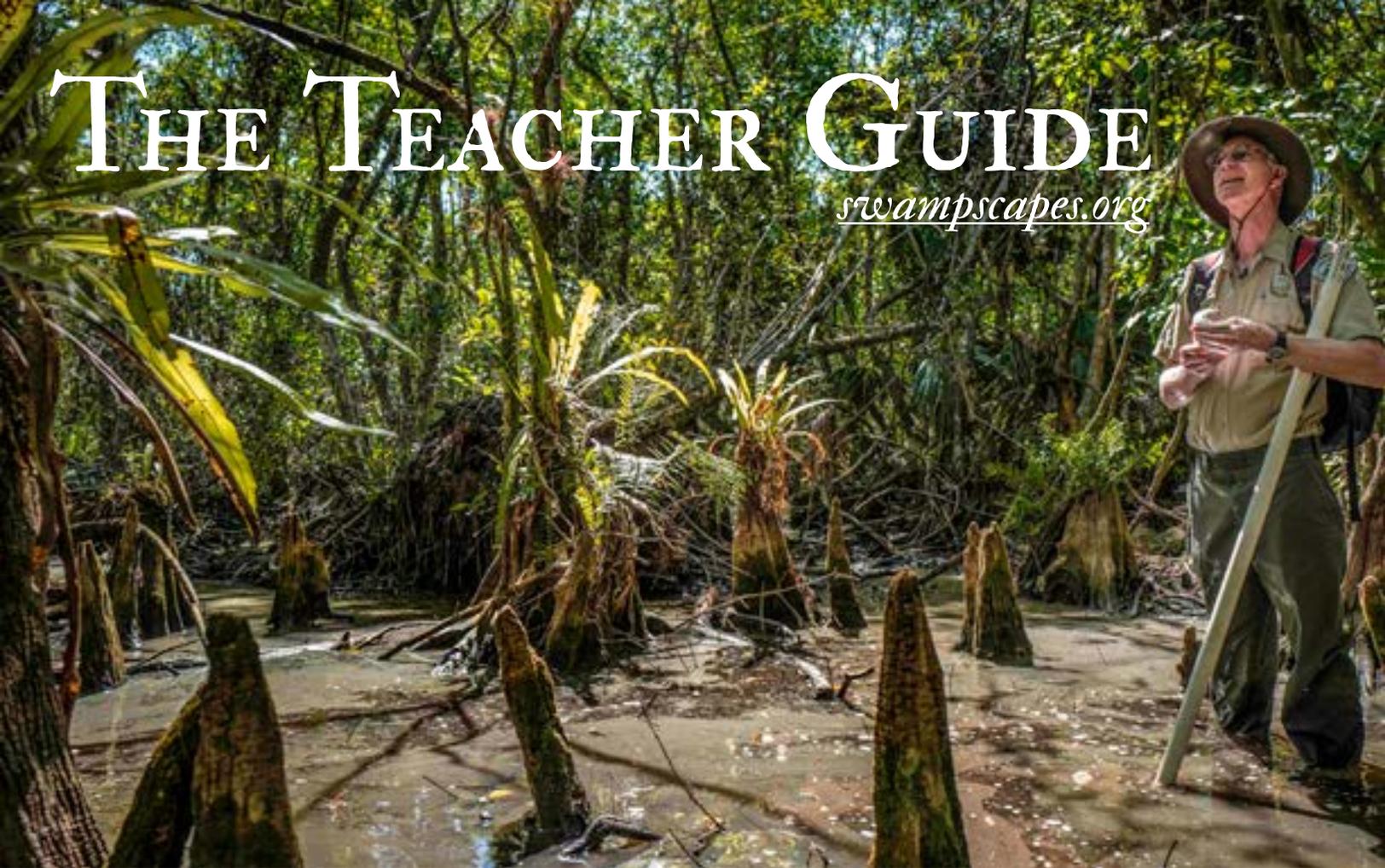


# THE TEACHER GUIDE

[swampscapes.org](http://swampscapes.org)



## SwampScapes Teacher Guide

This lesson can be presented in class with the teacher acting as a guide or it can be a student-guided lesson assigned online.

Teachers and/or students should download 2 things:

1. [The Lesson Guide](#)
2. [The Student Response Sheet](#)

In addition, teachers can request the Answer Key for the Student Response sheet. Verification is required to gain access to the Answer Key. Complete [this form](#) to request the document. (And, do not worry, you will not be added to any email lists).

The SwampScapes project emerged from a collaboration between students, professors and community partners. We are invested in the method of co-creation and the need to work across disciplines. As educators ourselves we know that classrooms are a powerful portal to social transformation especially when students and teachers tackle complex social problems and engage with community partners.

Many of us are disconnected from the beauty of swamps and the vital role they play in filtering water, fostering life, and buffering storms. Today, coastal development, pollution, and sea-level rise are threatening these invaluable landscapes. One of the biggest threats to swamps is a human disconnect from the environment and a lack of understanding of the role that swamps play in human survival. In a time of accelerated change and unpredictable weather, it has never been more important to look, listen, and learn from the swamps around us.

This is especially true for South Florida, home to the Everglades, one of the largest swamps in the world. Up until 1900, all of South Florida was one big swamp. To make way for development, the city drained the swamp and diverted the natural water flow, changing its essential water filtering and supply system forever. A rapid expansion of urbanization and agricultural growth has led to a host of environmental problems, making the Everglades a skeleton of what it once was. We can't turn back the clock, but we can learn to co-exist with our disappearing swamps and find ways to negotiate a fast-changing future.

Through passionate local guides, immersive landscapes, and an interactive Swamp Symphony, this documentary project leads users into the depths of Florida's swamps and to the people who care about them. This website is a companion to our VR project.

## The SwampScapes Lesson is divided into 2 parts.

### **PART 1**

The Sights and Sounds of the Swamp introduces students to ecosystems, biotic and abiotic factors, Food chains, Human impact on the environment, and careers in science.

### **PART 2**

Evolution and Climate Change addresses two of the most stubborn misconceptions teachers encounter when teaching climate change. First, what makes the climate change crisis we are facing today different from the climate changes that the Earth has experienced in the past. Second, if there has always been carbon dioxide in the atmosphere, and we ourselves breathe it out all of the time, what's the big deal?

## Curriculum Standards Addressed in the lesson

Different US States have their own science standards but the following are addressed in virtually every US States' Middle School Science Standards:

### **Big Idea: Interdependence**

- > Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.
- > Both human activities and natural events can have major impacts on the environment.
- > 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.
- > Identify the impact that humans have had on Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, changing the flow of water.

### **Big Idea: Diversity and Evolution of Living Organisms**

- > The scientific theory of evolution is the organizing principle of life science.
- > Natural Selection is a primary mechanism leading to change over time in organisms.
- > Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.
- > Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.

For the NGSS connections, [click here](#).

from cPALMS.org  
"Browse and Search Standards."  
Search Standards | CPALMS.org  
[www.cpalms.org/Public/search/Standard](http://www.cpalms.org/Public/search/Standard)



These lessons were created with the help of the Teacher Institute for Evolutionary Science.

# Lesson Extensions

## 1. Virtual Reality ideas for your classes:

SwampScapes offers VR “field trips” with experts and scientists in the field. The VR version is free for educators. You can request a copy in English, French or Spanish on our website under “VR”. Students can experience Swampscapes VR on a computer, on their phone or with an Oculus headset for a fully immersive experience. Ask students to compare the 2D and the 3D experiences and to imagine how scientists might use this technology in the future.

## 2. The Shoreline Project

<http://theshorelineproject.org>

An engaging, interactive website where students can learn much more about the coastal regions and the threats of climate change, The Shoreline Project features over forty profiles of people making a difference along our global coast.

There are several features that teachers might find particularly relevant.  
Click below to access them.

Students can [explore profiles by country](#)

Students can [explore the site through the interactive map](#)

Students can [learn more about biologists and their work](#)

Students can [encounter youth leaders](#)

