ASSOCIATION OF ZOOS & AQUARIUMS

Welcome to FrogWatch USA

Coastal Georgia Chapter

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UNIVERSITY OF GEORGIA EXTENSION
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Coastal WildScapes

FROG WATCH USA™

What is FrogWatch?

FrogWatch USA volunteers generate valuable science-based information on frog and toad populations, distribution, and seasonal timing (phenology). Data are collected nationwide and can be used by land managers, researchers, educators, and decision makers, or anybody else with an interest in frogs and toads.

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“The Puddle”

by FrogWatch Volunteer Rob Tiffin, Sandy Creek FrogWatchers Chapter

https://vimeo.com/320554384

Volunteer Training Session Topics

- Citizen science and FrogWatch USA
- Amphibians and wetlands
- Site registration and data collection

Next Week: Local frogs and toads

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Citizen Science/Community Science

- A research collaboration between scientists and volunteers
- Expands opportunities for scientific data collection, while providing access to scientific information to community members
- Appropriate for large-scale, long-term data

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Why be a Citizen Scientist?

- Learn about and explore the nature of science
- Collect scientific data on frogs and toads
- Learn more about wetlands and local amphibian diversity
- Spend time in community wetlands

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Benefits of the Data

- Describe local species diversity
- Detect rare and invasive species
- Suggest shifts in species diversity, range, and phenology over time
- Serve as an indicator of wetland health
- Inform the development of land management strategies

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FrogWatch USA

- The Association of Zoos and Aquariums' (AZA) flagship citizen science program
- Hosted by local Chapters
- Began in 1998 – over 20 years of data!
- Collects data on frog and toad breeding calls
- FieldScope - hosts FrogWatch data

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FrogWatch USA's Appeal

- Focuses on animals that indicate changes in the environment
- Uses a straightforward protocol
- Helps people engage in sound science
- Has nationwide coverage

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Amphibians

- Appeared on Earth ~350 million years ago and are one of the oldest vertebrate classes alive
- Three Orders: salamanders, frogs & toads, and caecilians
- Have gills during at least one stage of their life cycle*
- Live part of their lives in the water, part on land*

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Order Anura: Frogs and Toads

- Distinguished from other amphibians by being tail-less
- General differentiations between frogs and toads:

Frogs

Smooth or slimy skin*

Lay eggs in clusters or individually

Usually live in or near water

Relatively long hind legs

Move in leaps and jumps


Matt Moore

Toads

Warty, dry skin

Lay eggs in long strands

Usually live on dry land

Fat bodies with short legs

Move in short hops

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Frogs and Toads are Important

- Benefit the natural world and humans:
  - Predators and prey in the ecosystem
  - Pest control
  - Food
  - Medicine
  - Education and research
  - Culturally significant
- Serve as indicators of environmental health

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Sensitive to the Environment

- Permeable skin transfers oxygen and moisture, but also allows chemicals to enter their bodies
- Life cycle includes time both in the water and on land, increasing exposure to all types of pollutants

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Canary in the Coal Mine

Like the canaries miners sent down mine shafts, amphibians may indicate environmental changes that may be otherwise difficult to detect.

- Deformities
- Mass die-offs
- Population declines
- Shifts in ranges or timing

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Amphibian Declines

- Over past 30 years, scientists have reported dramatic declines in amphibian populations around the world
- Globally, almost one out of every third amphibian species is threatened with extinction
- In the United States, 38 amphibians are listed under the Endangered Species Act *(Jan 2022)*

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Primary Causes of Declines

- Habitat loss and fragmentation
- Pollutants
- Introduction of non-native, invasive species
- Climate disruption
- Parasites and disease

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Wetlands

- Frogs and toads need water to breed, so FrogWatch USA data is collected at wetlands
- Wetlands are defined by three characteristics:
  - The presence of plants that are known to grow in saturated conditions
  - Soils that lack oxygen
  - Water at or near the surface during some part of the growing season

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Types of Wetlands

- Seasonal ponds
  - Fill in winter/early spring; often dry in summer
  - Depressional wetlands, Carolina bays, Grady ponds, cypress-gum ponds
- Swamps
  - Saturated soil, sometimes with standing water; plant life dominated by woody plants
- Marshes
  - Frequently covered in water; emergent soft-stemmed vegetation
  - Freshwater vs saltwater (rice plantations)

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Types of Wetlands

- Ponds
  - Typically permanent, primarily open, water body that is smaller than a lake; sunlight can penetrate to allow plants to grow throughout and is often bordered by vegetation (natural or artificial)
- Bogs
  - Include spongy peat, derive water from precipitation; highly acidic waters *often* support low plant diversity (but not pitcher plant bogs)
- Borrow pits and ditches
  - Manmade reservoirs which may hold water for a few days or semipermanently

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Site Selection

Choose a site that is:

- Convenient to access weekly
- Quiet
- Safe for data collection in the evening
- Legally accessible

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Site Registration

- Collect the following information about the site:
  - Type of habitat
  - Origin of wetland
  - Source or origin of water
  - Permanence of water
  - Use of land adjacent to wetland
  - Use of land within wetland
  - Latitude and longitude
- Submit the FrogWatch USA Site Registration form

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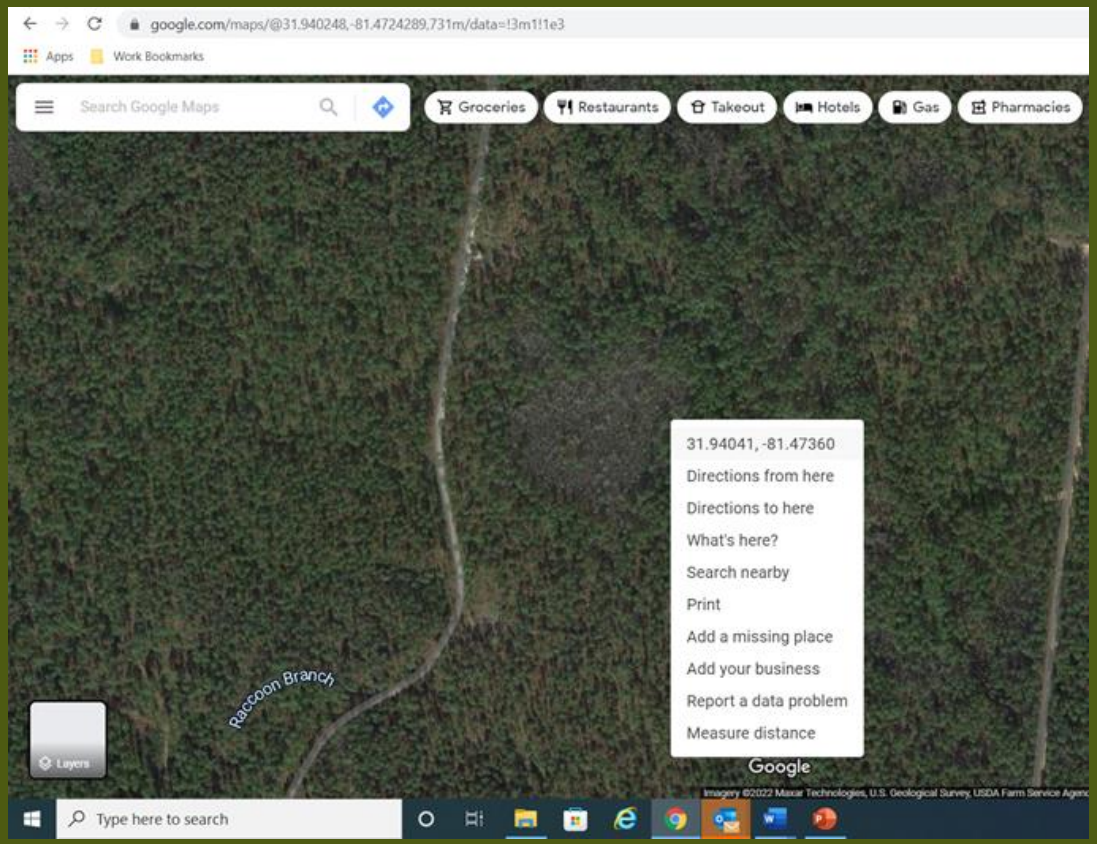
Find Latitude and Longitude

Google Earth

Google Maps



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Monitoring Protocol: Prior to Arrival at Site

- Practice identifying the calls
- Ensure appropriate weather conditions for monitoring:
  - Above 35 degrees Fahrenheit
  - Not raining too hard, nor too windy
- Plan to monitor at least 30 minutes after sunset

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Monitoring Protocol: Prior to Arrival at Site

Prepare a monitoring equipment kit, to include:

- Copy of Monitoring Protocol, datasheet for each visit
- Clipboard
- Pencil or indelible ink pen
- Thermometer
- Stopwatch or wristwatch
- One flashlight or headlamp per person
- Cell phone
- *Optional:* Extra flashlight, field guide, recorder, camera, rain gear

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Monitoring Protocol: Upon Arrival

- Enter volunteer and site information on the FrogWatch USA Datasheet
- Record weather information required on the FrogWatch USA Datasheet

Observation Datasheet

Volunteer and Site Information

Observer Name:
Site Name:
State:
Chapter:
(If applicable)

Visit Information

Date:
Start Time:
End Time:
Begin monitoring at least 30 minutes after sunset. End time should be exactly three minutes after start time!

Weather Conditions

(Write in temperature during observation and make one selection per weather category)

Air Temperature (Indicate °C or °F):

Wind Speed using Beaufort Wind Scale:

☐ 0 ☐ 1 ☐ 2 ☐ 3
☐ 4 ☐ 5

Precipitation during visit:

☐ None ☐ Fog/Mist ☐ Light Rain/Drizzle ☐ Medium Rain
☐ Hard Rain ☐ Hail ☐ Snow

Precipitation in the past 48 hours:

☐ No Precipitation ☐ Some Precipitation ☐ Much Precipitation

The temperature during the past 48 hours has primarily been:

☐ Above Freezing ☐ Below Freezing

Beaufort Wind Scale

0 **Calm**: *smoke rises vertically.*
1 **Light Air**: *rising smoke drifts; weather vane inactive.*
2 **Light Breeze**: *leaves rustle; can feel wind on face.*
3 **Gentle Breeze**: *leaves and twigs in constant motion; small flags extend.*

Too windy for monitoring:

4 **Moderate Breeze**: *moves small branches; raises dust and loose paper.*
5 **Fresh Breeze**: *small trees in leaf begin to sway.*

Frog & Toad Observations

Species Name	Calling Intensity
	☐ 0 ☐ 1 ☐ 2 ☐ 3
	☐ 0 ☐ 1 ☐ 2 ☐ 3
	☐ 0 ☐ 1 ☐ 2 ☐ 3
	☐ 0 ☐ 1 ☐ 2 ☐ 3
	☐ 0 ☐ 1 ☐ 2 ☐ 3
	☐ 0 ☐ 1 ☐ 2 ☐ 3
	☐ 0 ☐ 1 ☐ 2 ☐ 3
	☐ 0 ☐ 1 ☐ 2 ☐ 3

Calling Intensity Index

0 No frogs or toads heard calling.
1 Individuals could be counted; there was space between calls.
2 Calls of individuals could be distinguished, some overlapping of calls.
3 Full chorus, calls were constant, continuous and overlapping.

Required Weather Information

- Air temperature
- Wind speed (Beaufort Wind Scale)
  - **0** – *Calm*: smoke rises vertically
  - **1** – *Light air*: rising smoke drifts; slight movement of air
  - **2** – *Light breeze*: leaves rustle; wind felt on face
  - **3** – *Gentle breeze:* leaves and twigs in constant motion
  - **Too windy to monitor:**
  - **4** – *Moderate breeze:* moves small branches, dust, loose paper
  - **5** – *Fresh breeze:* small trees begin swaying
- Current precipitation
- 48-hour weather history

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Monitoring Protocol

- Be quiet for at least 2 minutes before initiating the monitoring session so frogs and toads acclimate to your presence.
- Cup hands around your ears and listen quietly for *precisely* 3 minutes. Use a watch to time this duration accurately.
- Listen to, identify, and remember all breeding calls occurring in the session.
- If the monitoring session is interrupted by noise, restart it, including the 2-minute acclimation period.

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Monitoring Protocol: Data Reporting

- Immediately following the 3-minute monitoring session, enter the start and stop times on the Datasheet.
- List all species heard during the monitoring session and rate their calling intensity. If uncertain about a species identification, do not report it.
- If no calls were heard during the monitoring session, enter “No Calls Heard” on the Datasheet. Good data documents both the presence *and absence* of breeding calls.

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Calling Intensity

0 – No frogs or toads heard calling

1 – Individuals can be counted; there is space between calls

2 – Calls of individuals can be distinguished, but there is some overlapping of calls

3 – Full chorus, calls are constant, continuous, and overlapping

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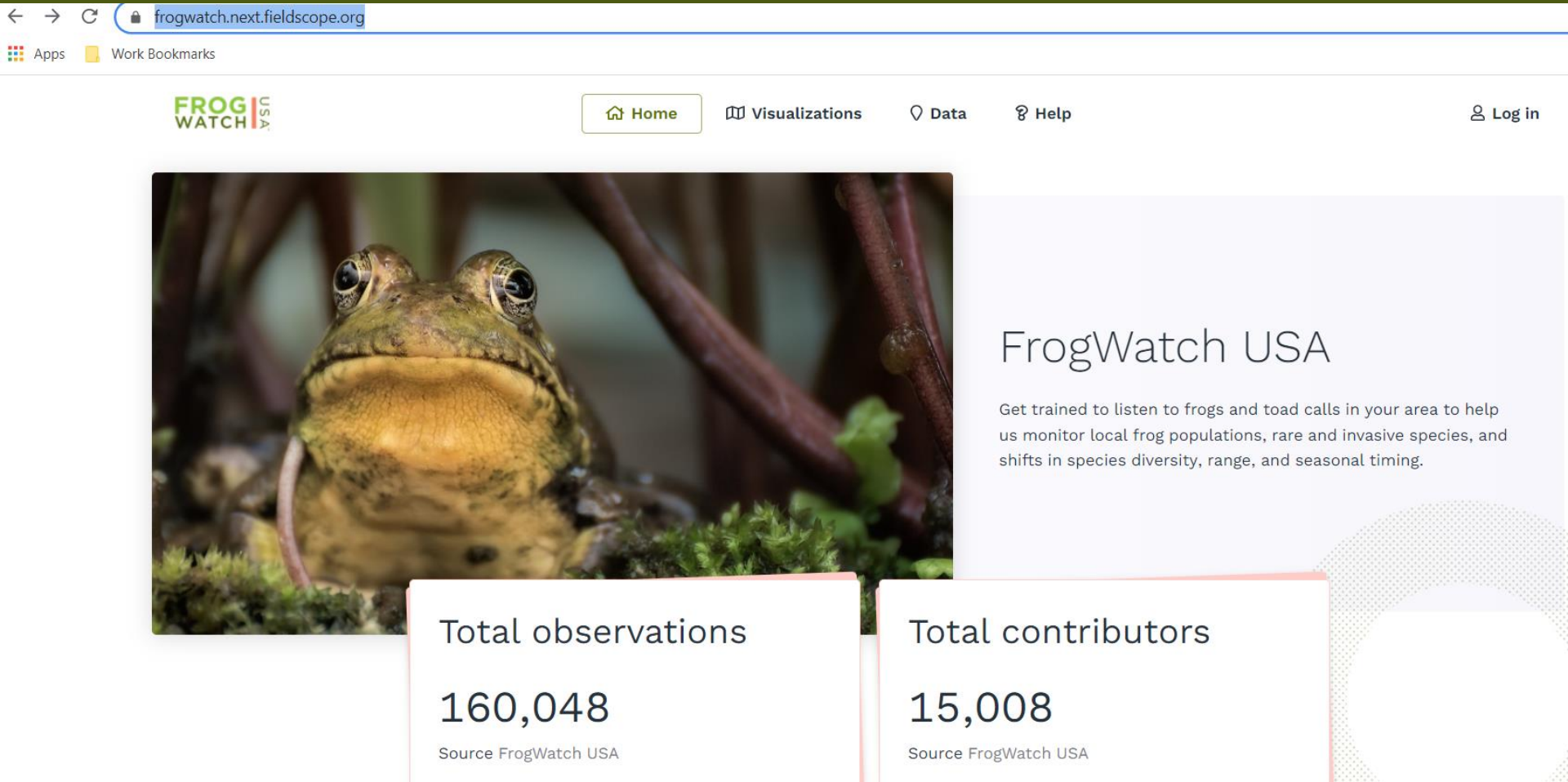
Monitoring Protocol: Data Submission

- Share first four Datasheets with your Chapter Coordinator for review
- Once certified, submit data online using Fieldscope platform



FrogWatch USA Online Resources

- Home page: www.frogwatch.org or www.aza.org/frogwatch
- Data entry: www.frogwatch.fieldscope.org
- Datasheets, protocol available for download
- Coastal Georgia FrogWatch Chapter Manual

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Become a Certified FrogWatch USA Volunteer

Data from certified FrogWatch USA volunteers are coded separately from that of non-certified volunteers in the FrogWatch USA database.

Become certified by scoring a minimum of 80% on the following two assessments administered by local FrogWatch USA Chapters:

- Volunteer Training Assessment
- Frog and Toad Call Identification Assessment.

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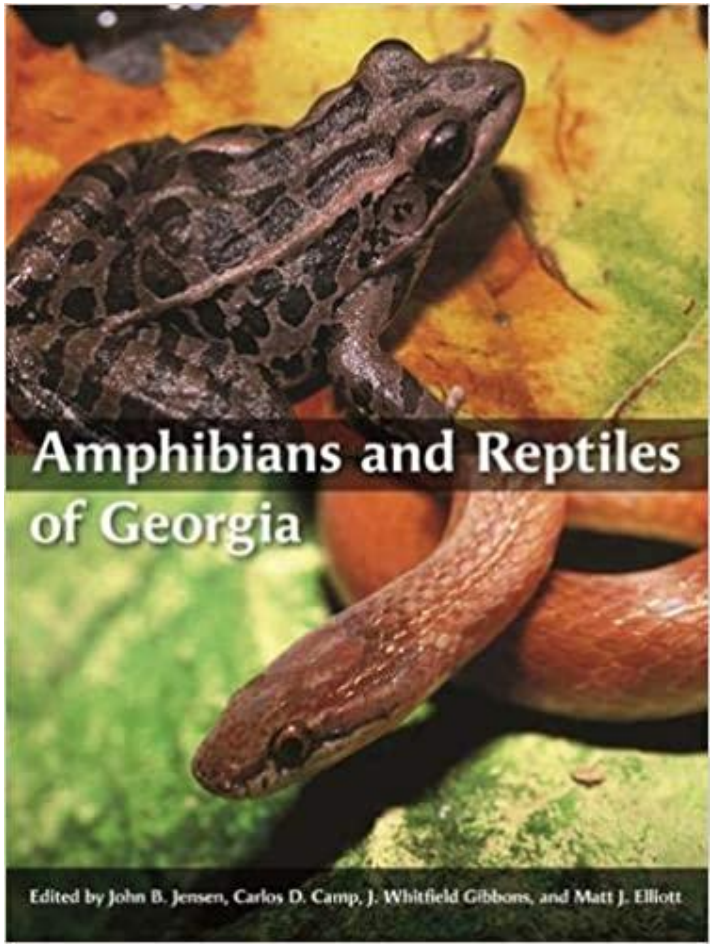
Frog Identification Resources

Online frog calls of GA and SC:
https://srelherp.uga.edu

CD of frog calls:
https://georgiawildlife.com/frogcd

USGS Frog Call Look Up and Quiz:
https://www.pwrc.usgs.gov/frogquiz

Cornell Lab of Ornithology, Macaulay Library (of Natural Sound):
https://macaulaylibrary.org



Up Next

Part 2: Local Frog Calls with FrogWatch Coastal Georgia Chapter

Questions?

Contact: erin.cork@gmail.com

Join us on Facebook: Search “FrogWatch Coastal Georgia”

Thank you to our host organization Coastal WildScapes!

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