



Incorporating FrogWatch into the classroom

Welcome to Frogwatch! As the certified Frog Watcher for your classroom, your students can help collect important data on frogs around Rhode Island. You will be responsible for validating and inputting the data they collect and help your students become important citizen scientists!"

Each classroom is different, and we encourage you to use what works best for your classroom and students. To get an idea of how other classrooms have managed FrogWatch, use the step-by-step guide below:

Where to start?

Once you have completed your virtual FrogWatch training, all resources and training PowerPoints will become available starting March 12th. We encourage all FrogWatchers to use these resources as needed throughout the season. → [FrogWatch Resource Library](#)

Examples of NGSS met through participating in FrogWatch:

- K-LS1-1 From Molecules to Organisms: Structure and Processes:
 - Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations.
 - <https://www.nextgenscience.org/pe/k-ls1-1-molecules-organisms-structures-and-processes>
- 1-LS1 From Molecules to Organisms: Structures and Processes
 - LS1.B: Growth and Development of Organisms
 - Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)
 - <https://www.nextgenscience.org/dci-arrangement/1-ls1-molecules-organisms-structures-and-processes>
- 2-LS4-1. Biological Evolution: Unity & Diversity
 - Make observations of plants and animals to compare the diversity of life in different habitats
 - <https://www.nextgenscience.org/pe/2-ls4-1-biological-evolution-unity-and-diversity>
- 3-LS4 Biological Evolution: Unity and Diversity
 - 3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
 - <https://www.nextgenscience.org/pe/3-ls4-2-biological-evolution-unity-and-diversity>
- 4-LS1 From Molecules to Organisms: Structures and Processes

- 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- <https://www.nextgenscience.org/pe/4-ls1-1-molecules-organisms-structures-and-processes>
- 4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways
- <https://www.nextgenscience.org/pe/4-ls1-2-molecules-organisms-structures-and-processes>
- 5-LS2-1 Ecosystems: Interactions, Energy, and Dynamics
 - 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
 - <https://www.nextgenscience.org/pe/5-ls2-1-ecosystems-interactions-energy-and-dynamics>
- MS-LS2 Ecosystems: Interactions, Energy, and Dynamics
 - MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
 - <https://www.nextgenscience.org/pe/ms-ls2-1-ecosystems-interactions-energy-and-dynamics>
 - MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
 - <https://www.nextgenscience.org/pe/ms-ls2-4-ecosystems-interactions-energy-and-dynamics>
- HS-LS4 Biological Evolution: Unity and Diversity
 - HS-LS4-5. Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.
 - <https://www.nextgenscience.org/pe/hs-ls4-5-biological-evolution-unity-and-diversity>

Step 1: Student Training

Because students will not be officially inputting the data, teachers can tailor training for what works best for students.

Typical lesson topics:

1. Wetlands – What they are, what lives there, and why they are important?
 - a. Wetland biodiversity, what is needed to have a good habitat for frogs to thrive.
 - b. Human impact in wetlands and how that affects species survival and growth.
2. Learning the frogs and toads – With only 10 species of anurans native to Rhode Island, learning their 10 calls and their descriptions can be a lot of fun!
 - a. Check out the online resource library for some added fun activities for the classroom. → [FrogWatch Resource Library](#)

- b. Frog life cycle – Metamorphosis
- 3. Selecting an appropriate FrogWatch site – we highly suggest utilizing our *Survey Site-Station Registration Form* found in the online resource library.
 - a. What are the habitat needs for frogs?
 - b. Population dynamics and how predators, weather events, and humans influence frog populations in certain FrogWatch sites.
 - c. Cross curriculum connection for literacy and/or social studies. Using the data to draw conclusions from the history of the area the FrogWatch site is in and presenting that in a written report.
- 4. How to collect data – we suggest using the *FrogWatch Data Collection form* or setting up a digital survey via Google forms to collect data information.
 - a. Students can also create their own field notebooks
 - b. Cross curriculum connection with mathematics, using the data to find the density of a frog population and the potential change over time.

Step 2: Preliminary Questions

Now that you have trained your students, what will observations look like? Here are some questions to help you guide your students in making the best observations, collect accurate data, and make the best decision in choosing a FrogWatch site.


- Do you want to have your students out in the field?
 - Getting out in the field and listening to calls firsthand is a great learning experience.
 - If getting outside and listening to calls after-dark is not viable for your students, you can still participate with the use of videos and audio recordings. Are you as a teacher able to collect video observations to bring back to the classroom?
 - Do you have school permission to send students out into the field outside of school hours?
 - Does your school require students' guardians' permission on this assignment?
- Do you want to listen for frogs and toads as a group? Or as individual assignments?
 - Observe as a class - If you want to listen as a class group, keep in mind you will need to have your class meet together 30 minutes after sunset at a designated site a minimum of 4 times throughout the season.
 - Observe as a small group – If you want to split students up to listen as a small group, this helps students who are less confident in identifying calls. This also means less data to input for the teacher compared to individual assignments.
 - Observe as an individual – For students confident enough, having students record observations as individuals will provide a lot of great data! Students can set their site up right in their backyard! Depending on class size, this will have the most amount of data for teachers to input.


Step 3: Getting Students Out in the Field

If you are set up to be able to get students out into the field to record their own data that is fantastic! What will you need to do?

First: choose a site. Using what was learned during the FrogWatch training, students and/or teachers will need to choose an appropriate observation site.

- Students can set up individual observation sites or group observations sites keeping the following things in mind:
 - Volunteers do not need to find a pristine habitat to monitor; valuable data is generated from roadside ditches and stormwater ponds. The student's backyard is potentially the perfect site!
 - Make sure it is convenient to access.
 - Quiet! The less traffic and other noises the more likely you will hear breeding calls.
 - Choose a safe site – Observations will be made after-dark; the site should be safe to maneuver in the dark! Sites should be teacher and guardian approved.
 - Legally accessible. Remind students that a site located in a park or preserve might be inaccessible after dark. Be sure to check park hours before committing to a site. If the site is located on private property, the student will need to obtain permission from the landowner to use that site.





Survey Site Registration

Volunteer Information:

Observer Name:	Address:
Chapter/Organization:	City, State, Postal Code:
Email Address:	Phone Number:

Survey Site Information:

Site Name: _____
Site City, County, State: _____

Characterize Your Site (select one):

<input type="checkbox"/> Suburban	<input type="checkbox"/> Urban	<input type="checkbox"/> Rural	<input type="checkbox"/> Other (describe): _____
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Site Habitat (check one)	Water Presence (check one)
<input type="checkbox"/> Swamp or Woodland Swamp	<input type="checkbox"/> Permanent
<input type="checkbox"/> Freshwater Marsh	<input type="checkbox"/> Temporary Some Years
<input type="checkbox"/> Bog or Fen	<input type="checkbox"/> Temporary Every Year
<input type="checkbox"/> Vernal Pool	<input type="checkbox"/> Not Known
<input type="checkbox"/> Wet Meadow	
<input type="checkbox"/> Pond	Water Source (check one)
<input type="checkbox"/> Prairie Pothole	<input type="checkbox"/> Pond
<input type="checkbox"/> Ditch	<input type="checkbox"/> Lake
<input type="checkbox"/> Other: _____	<input type="checkbox"/> Stream or River
	<input type="checkbox"/> Precipitation or Runoff
	<input type="checkbox"/> Groundwater
	<input type="checkbox"/> Not Known

Wetland Origin (check one)

<input type="checkbox"/> Natural
<input type="checkbox"/> Formed by a Beaver Dam
<input type="checkbox"/> Human-made
<input type="checkbox"/> Artificially Altered
<input type="checkbox"/> Not Known

Describe Additional Survey Site Characteristics:

Latitude/Longitude: Latitude: _____ Longitude: _____
Enter in Decimal Degrees to four (4) decimal places. All longitudes in the United States must include a negative (-) or Westing (W) symbol. If you do not have a GPS unit, use an online mapping tool and search by address.

Directions to site:


Submit your Site Registration electronically to the FrogWatch USA database.
Go to www.aza.org/volunteer-frogwatch-volunteers/ to get started.
Email frogwatch@aza.org if additional support is needed.
FrogWatch USA™ is a program of the Association of Zoos and Aquariums.


Still having challenges finding a good site? Reach out to frogwatch@rwpzoo.org and we will be happy to help!

Step 4: Start FrogWatching!

Now that your students have chosen their observation sites, they should start collecting their data! They will need to observe a minimum of 4 times at the same site following the FrogWatch procedures.

- Any data collected needs to be verified by you to ensure accuracy. We suggest having students record their 3 minute observation period via video or audio recording for you to double check before submitting.
- Collecting data can be done via paper or digitally using an online survey.
 - For paper, the *FrogWatch Data Collection* form can be found in the online resource library.
 - For digital, we suggest using Google forms to collect all data information needed. There is an option of including a video recording of the students observations in digital survey submissions.
- All data needs to be input into Fieldscope before the end of the FrogWatch season (September 2022).





Observation Datasheet

Volunteer and Site Information Observer Name: _____ Site Name: _____ State: _____ Chapter: _____ <small>(if applicable)</small>	Visit Information Date: _____ Start Time: _____ End Time: _____ <small>Begin monitoring at least 30 minutes after sunset. End time should be exactly three minutes after start time!</small>
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Weather Conditions <small>(Write in temperature during observation and make one selection per weather category)</small>	
Air Temperature (Indicate °C or °F): _____ Wind Speed using Beaufort Wind Scale: <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	Beaufort Wind Scale 0 Calm: smoke rises vertically. 1 Light Air: rising smoke drift; 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. <small>Too windy for monitoring!</small> 4 Moderate Breeze: moves small branches; raises dust and loose paper. 6 Fresh Breeze: small trees in leaf begin to sway.
Precipitation during visit: <input type="checkbox"/> None <input type="checkbox"/> Fog/Mist <input type="checkbox"/> Light Rain/Drizzle <input type="checkbox"/> Medium Rain <input type="checkbox"/> Hard Rain <input type="checkbox"/> Hail <input type="checkbox"/> Snow	
Precipitation in the past 48 hours: <input type="checkbox"/> No Precipitation <input type="checkbox"/> Some Precipitation <input type="checkbox"/> Much Precipitation	
The temperature during the past 48 hours has primarily been: <input type="checkbox"/> Above Freezing <input type="checkbox"/> Below Freezing	

Frog & Toad Observations																			
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Species Name</th> <th style="text-align: center; border-bottom: 1px solid black;">Calling Intensity</th> </tr> </thead> <tbody> <tr><td style="border-bottom: 1px solid black;"> </td><td style="text-align: center;"> <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 </td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="text-align: center;"> <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 </td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="text-align: center;"> <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 </td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="text-align: center;"> <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 </td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="text-align: center;"> <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 </td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="text-align: center;"> <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 </td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="text-align: center;"> <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 </td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="text-align: center;"> <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 </td></tr> </tbody> </table>	Species Name	Calling Intensity		<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 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.
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All classroom and no fieldwork:

If getting outside and listening to calls after-dark is not viable for your students, it is possible to participate with the use of videos and audio recordings. The certified FrogWatcher for the classroom would need to go into the field during after-dark observations to collect these recordings.

Choosing a site: As the teacher, you can choose as many or as few sites as you want following the FrogWatch protocols.

Collecting data: Once site(s) are established, observations will need to be recorded following the FrogWatch procedures.

- At least 30 minutes after sunset, record 3 minutes via video after acclimation period to bring back to the classroom.
- Although you cannot do multiple observations for one site on a single night, you can do multiple sites on a given night.
- Recordings can be brought back to the classroom. Students can help identify calls from the recordings! Any data collected needs to be verified by the certified FrogWatcher to ensure accuracy and entered into Fieldscope.