

**National Park Service
U.S. Department of Interior**

Northeast Temperate Network

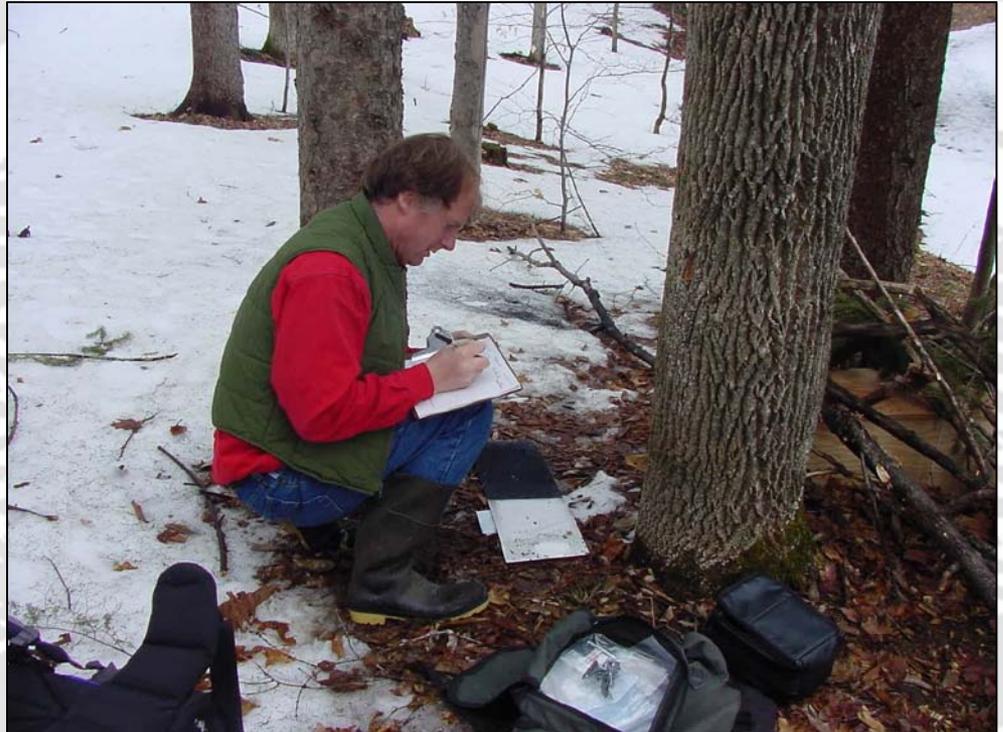
Why Monitoring Matters

Opportunities for Every Classroom

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Inventory & Monitoring Program

Pop Quiz!

- What is monitoring?



What is Monitoring?

"The collection and analysis of repeated observations or measurements to evaluate changes in condition and progress toward meeting management goals."

- Measurements are repeated to determine trend
- Monitoring is done for a specific purpose
- Results will effect an action of some kind

Why Monitor?

- Better understanding of ecological systems.
- Improve management and preservation of natural resources
- Share knowledge to engage, educate, and involve decision makers, stakeholders, and the public in managing and protecting parks
- Lots of data can be collected at a low cost
- Builds awareness and appreciation for science and nature
- Authentic learning experience

Opportunities for Every Classroom

Monitoring Programs	Ready, Set, Go?	Curriculum?
BudBurst/National Phenology Network	😊	😊 Anticipated for 2010
World Water Quality Monitoring Day	😊	😊 Fact sheets, puzzles, & handouts
Forest Salamanders	😊	😊
eBird	😊	😞

- **Outdoor Laboratories:**
 - National Parks, local open space, your own back yard

Phenology:

What does climate change look like?

- Study of periodic biological events correlated with seasonal change.
 - Animal migrations
 - Flower budding





1. Select and identify your plant using the plant list or by geographic area.
2. Describe the site where your plant is located. This includes finding the latitude and longitude of your site.
3. Determine the phenophases (phenological stage) you are looking for (i.e., First Leaf, First Flower, First Fruit Ripe).
4. Begin observations (before expected time of leafing or flowering)!
5. Report your observations online.





- Classroom activities and an assortment of curricula
 - Grades K-12
 - Plant Parts
 - Plant Observation
 - Links to other resources on phenology and climate change



Water Quality Monitoring:

- We all need clean water.
 - Build awareness of a crucial resource
 - Practice science skills
 - Learn about local conditions and what impacts them.





Ready, Set, Go? Curriculum?



- WWMD is an international education and outreach program that builds public awareness and involvement in protecting water resources around the world by engaging citizens to conduct basic monitoring of their local water bodies.
- September 18, or host your World Water Monitoring Day anytime from **March 22 until December 31.**



Ready, Set, Go? Curriculum?



- Register your site
- Prepare your equipment
- Monitor your site
- Report your data online
- Fact sheets, puzzles, and worksheets available now.
- Water Quality unit for students ages 9-13 “coming soon.”
- Lots of web-based resources.





Forest Salamanders

- Monitoring changes in populations of forest salamanders.
- Curriculum for middle and high-school students.
- Looking for teachers to implement at parks in VT, NY, CT, MA, and NH.





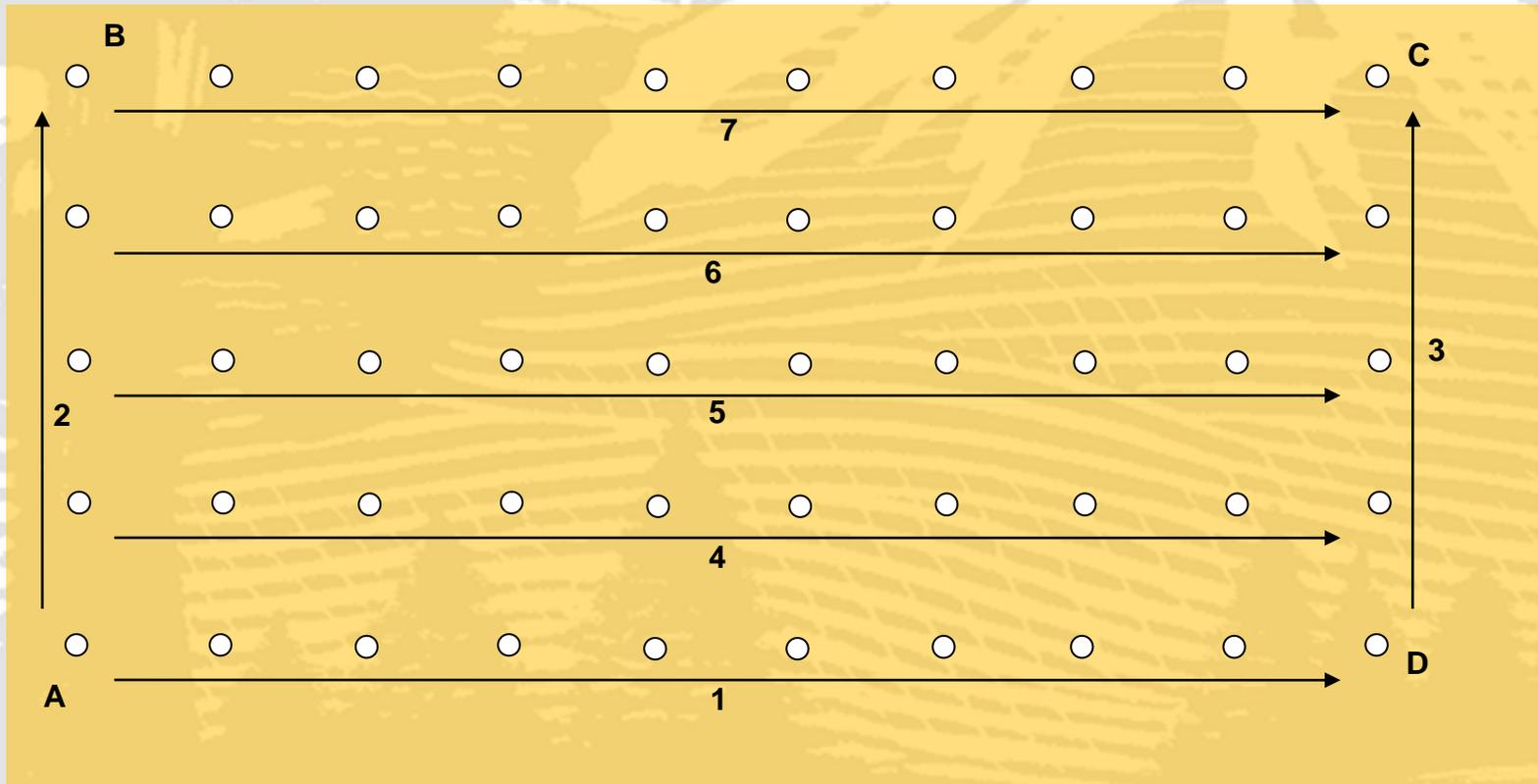
Forest Salamanders

- Is forest/water health correlated to trends in amphibian populations?
- Do resource issues like deer populations, visitor use, and invasive species affect amphibian populations?
- Are amphibian communities sustainable?



Forest Salamanders

Typical salamander coverboard array



Pop Quiz!

- What kind of salamander?
 - Common name?
 - Scientific name?

A = Red-backed salamander
Plethodon cinereus
B = Red-backed salamander
Plethodon cinereus





Citizen Science Central

- Clearinghouse of citizen-science projects:
 - Ideas
 - Inspiration
 - Resources
 - Contacts

The screenshot shows the website header with the Cornell Lab of Ornithology logo and a search bar. Below the header is a navigation menu with links for Home, About, Project Gateway, References, Toolkit, Conference Proceedings, and Discussion Forum. The Project Gateway link is highlighted. To the right of the navigation menu is a large red heading 'Project Gateway' and a central graphic area containing the text 'Find projects of interest to you.' and an illustration of a bird perched on a branch with a butterfly. To the right of this graphic are four stacked buttons: 'About', 'Using', 'Find Project', and 'Add Project'. At the bottom left of the page is the 'Citizen Science' logo.

Hit the Trail!

- Walk to Pogue Pond
- Pace check
- Small teams will check the salamander grid, record data.
 - Think about how this might work with your students.



- Salamander Monitoring
 - #1 Goal: Familiarize you with the site setup and data collection
 - Practice salamander ID skills