



James Clayton

Susan L. Shafer

# Discover... CITIZEN SCIENCE

By Bernadette LaManna

*Have you ever watched birds at a birdfeeder? Heard a chorus of spring peepers in April or bullfrogs in June? Enjoyed the blooming of a magnolia or a dogwood tree? Been fascinated by the sight of a horseshoe crab on the shore, or simply seen a ladybug and tried to remember the words to the nursery rhyme? Perhaps you've observed these things, and maybe even stopped momentarily to look or listen a bit more closely, but haven't given it much more thought. Well an entire world of scientific discovery awaits the casual observer interested in taking their sightings to the next level. But observers beware—you stand to learn a lot by becoming a citizen scientist!*

Citizen scientists are people who volunteer to survey, measure, monitor or observe the natural world around them, and record and share their findings. It's rewarding work that provides valuable assistance to professional scientists and researchers who may have limited means for collecting data. By participating in these projects, citizen scientists become more engaged with their natural surroundings, and better environmental stewards in the process.

In New York, numerous citizen science opportunities exist for both adults and children. Some projects are seasonal, while others can be conducted year-round. Electronic devices make many projects easier to do, and several programs—such

as the Citizen Science Alliance's "Zooniverse"—rely solely on using the internet (and sometimes a camera).

Whether it's counting wildlife, observing the effects of climate change, or even monitoring weather trends, there's likely a project that suits your interests. Take a look at the following list and see what project calls to YOUR inner scientist. Keep in mind, though, that this is only a sample; there are many others.

You can also search the web where you'll find a number of other interesting projects, including an ongoing "roadkill" project, but you'll have to visit Ireland to participate in that one!

### Wild Turkey: Winter Flock Survey and Summer Brood Survey

The winter survey monitors trends in turkey abundance across the state. Volunteers record the number of wild turkeys they see from January through March. This information helps DEC assess the size of the wild turkey population prior to the spring breeding season. Visit [www.dec.ny.gov/animals/48756.html](http://www.dec.ny.gov/animals/48756.html). The summer survey estimates the average number of wild turkey poults (young of the year) per hen. During August, DEC staff and volunteers record the sex and age composition of all flocks of wild turkeys observed during normal travel. Visit [www.dec.ny.gov/animals/48732.html](http://www.dec.ny.gov/animals/48732.html).

### Project FeederWatch (and Project NestWatch): Winter and Spring/Summer

If you like watching birds, you can help the Cornell Lab of Ornithology collect information to monitor the state's bird populations. In Project FeederWatch, volunteers make note of the kinds and numbers of birds that visit their feeders. In NestWatch, volunteers record a variety of information including species, nest location and the number of eggs and young. Visit [www.birds.cornell.edu/pfw](http://www.birds.cornell.edu/pfw) (FeederWatch) and <http://watch.birds.cornell.edu/nest> (NestWatch).



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### New England Cottontail Survey: October through February

Rabbit hunters in Rensselaer, Columbia, Dutchess, Putnam and Westchester counties are needed to help DEC gather information about the distribution of New England cottontails. New England cottontails look nearly identical to eastern cottontails and can only be reliably identified by genetic testing

of tissue, by fecal samples, or by examining the shape and structure of the skull. Hunters can help by providing DEC with the skulls of the rabbits they harvest. Visit [www.dec.ny.gov/animals/67017.html](http://www.dec.ny.gov/animals/67017.html).



Bill Banaszewski

### Bobcat Observation: Year-round

DEC needs more information on bobcat populations in most of central and western New York. If you spend a considerable amount of time outdoors in these areas, you can help by keeping track of any bobcat sightings and reporting your findings. For information, e-mail or call DEC at [fwwildlf@gw.dec.state.ny.us](mailto:fwwildlf@gw.dec.state.ny.us) or 518-402-8920.

### Christmas Bird Count: December/January

Perhaps the largest, and longest-running citizen science project, National Audubon Society's Christmas Bird Count is conducted throughout North America. For more than 110 years, volunteers have braved winter weather to take part in the count. Data collected allows researchers, conservation biologists and other interested individuals to study the long-term health and status of bird populations, including the impacts of environmental threats like climate change and habitat loss. In 2010, more than 61 million birds were counted! Visit Audubon's website at <http://birds.audubon.org/christmas-bird-count>.

### FrogWatch USA™: Late January through August

Managed by the U.S. Geological Survey and the National Wildlife Federation, FrogWatch USA allows volunteers to help herpetologists (biologists who study amphibians and reptiles) track frog and toad populations. Anyone can be a frog-watcher, you just need to live near a frog breeding site (i.e. marsh, swamp or pond) that you can easily visit several times a week, including at night. See April 2008 *Conservationist* ([www.dec.ny.gov/pubs/43775.html](http://www.dec.ny.gov/pubs/43775.html)) or visit [www.nwf.org/frogwatchUSA](http://www.nwf.org/frogwatchUSA).



### Amphibian Monitoring: Spring through Summer

Help the Hudson River Estuary Program and the Cornell University Department of Natural Resources identify and map places where salamanders and frogs cross roads by reporting when and where you see migrations of these amphibians. This one is really pretty easy—all you need to conduct a “road survey” is to look through your car’s windshield on a rainy night. Visit [www.dec.ny.gov/lands/51925.html](http://www.dec.ny.gov/lands/51925.html). Through the North American Amphibian Monitoring Program, you can lend an ear to help biologists monitor populations of vocal amphibians such as frogs and toads. In New York, the program is coordinated by the Hudson River Estuary Biodiversity Monitoring Program, which helps train volunteers to identify the unique calls of local frog species. Visit [www.dec.ny.gov/animals/50247.html](http://www.dec.ny.gov/animals/50247.html) or [www.pwrc.usgs.gov/naamp/](http://www.pwrc.usgs.gov/naamp/).

### Ruffed Grouse and Woodcock Hunting Log: Fall through Late Winter

Hunters can help biologists monitor populations of these two game species by keeping a log of the number of hours spent hunting grouse and/or woodcock, the number of birds flushed, the number of birds taken, and whether a dog was used to hunt. The log’s primary purpose is to monitor the number of birds flushed per hour. Visit [www.dec.ny.gov/animals/9351.html](http://www.dec.ny.gov/animals/9351.html). DEC also runs a Ruffed Grouse Drumming Survey in



DEC photo

which hunters record the number of drumming male grouse they hear while turkey hunting in spring. See October 2010 *Conservationist* ([www.dec.ny.gov/pubs/69004.html](http://www.dec.ny.gov/pubs/69004.html)) or visit [www.dec.ny.gov/animals/48169.html](http://www.dec.ny.gov/animals/48169.html).

### Horseshoe Crab Survey: May through July

Help collect data and acquire biological information about horseshoe crabs in New York's marine district. The data—spawning abundance, size, sex and whether or not the animal sports an identifying “button tag”—is used to assess the status of horseshoe crabs and assist with the management and conservation of this significant species. See June 2011 *Conservationist* ([www.dec.ny.gov/pubs/74680.html](http://www.dec.ny.gov/pubs/74680.html)) or visit [www.dec.ny.gov/animals/36195.html](http://www.dec.ny.gov/animals/36195.html) or Cornell's NY Horseshoe Crab Monitoring Network site [www.nyhorseshoecrab.org](http://www.nyhorseshoecrab.org).

### American Eel Project: Late March through Mid-April

Join scientists, students and community volunteers in collecting juvenile American eels (glass eels or elvers) on several Hudson River tributaries. Volunteers check nets one or more days per week for these juvenile fish which are then counted, weighed and released. Other environmental data is also recorded. Visit [www.dec.ny.gov/lands/49580.html](http://www.dec.ny.gov/lands/49580.html). To see a video, visit [www.dec.ny.gov/dectv/dectv151.html](http://www.dec.ny.gov/dectv/dectv151.html).

### River Herring Monitoring Program: April and May

Volunteer to visit designated Hudson River tributaries twice a week during the spring and observe them for the presence or absence of river herring. Participants are also asked to record the date, time, location, tide stage, weather conditions, and stream conditions for each site. Data is collected for 65 Hudson River tributaries that span more than 150 miles. Visit [www.dec.ny.gov/animals/41545.html](http://www.dec.ny.gov/animals/41545.html).

### Project Budburst: Spring

By reporting the first leafing, first flower and first fruit ripening of targeted native trees, shrubs, flowers and grasses in their local area, volunteers can help scientists learn about the prevailing climatic characteristics in a region over time. BudBurst Buddies, a “spinoff” of Project Budburst and which runs year-round, is specifically designed to get children involved. Kids pick a tree or shrub to watch and make multiple observations about how it changes within a year's time. (Just think how much they can learn by doing that!) Visit <http://neoninc.org/budburst/citizenscientists>.



Susan L. Shafer



### Lost Ladybug Project: Early Summer

Help scientists keep tabs on our ladybug populations. Ladybugs feed on plant-eating insect pests, and during the past 20 years, several native ladybug populations have declined drastically, while others have increased both in numbers and range. Volunteers in the project locate and photograph ladybugs, and the information they provide helps scientists monitor the various ladybug populations. The nine-spotted ladybug (New York's state insect) was thought to be gone from the eastern U.S. until two children discovered one in Virginia in 2006 and reported it to the Lost Ladybug project. More recently, one was found on a sunflower at the Quail Hill Organic Farm in Amagansett, Suffolk County during a Lost Ladybug event this past summer. Since then, at least 20 more have been found at Quail Hill! Visit [www.lostladybug.org](http://www.lostladybug.org).

### Angler Diary Programs: Mid-June through September

Anglers can help DEC monitor various fish populations by participating in angler diary programs, which are conducted across the state. Anglers record trip, catch information, and biological characteristics of the species they

catch. Data from these programs provide valuable information which helps guide DEC's management efforts. Angler diary programs are currently being conducted for: smallmouth and largemouth bass on Lake Ontario (visit [www.dec.ny.gov/outdoor/27875.html](http://www.dec.ny.gov/outdoor/27875.html)); smelt, trout or salmon on Lake Champlain (visit [www.dec.ny.gov/outdoor/38381.html](http://www.dec.ny.gov/outdoor/38381.html)); walleye in Lake Ronkonkoma and Fort Pond on Long Island (contact the DEC regional office at 631-444-0280); and on four eastern Finger Lakes (Cayuga, Owasco, Skaneateles and Otisco; visit [www.dec.ny.gov/outdoor/27875.html](http://www.dec.ny.gov/outdoor/27875.html)); and seven western Finger Lakes (Canadice, Canandaigua, Conesus, Hemlock, Honeoye, Keuka and Seneca; visit [www.dec.ny.gov/outdoor/73518.html](http://www.dec.ny.gov/outdoor/73518.html)).

### Firefly Watch: June/Summer

Help the Museum of Science in Boston and researchers from Tufts University and Fitchburg State College conduct a firefly census to track fireflies. Firefly populations appear to be declining throughout the U.S. Volunteer firefly watchers observe and report on firefly activity in or near their backyards. Scientists hope the census will shed light on the geographic



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## WHAT IS IT?

If you think the photo on the Table of Contents page is a close-up of a spruce cone—you're right! In this case, it's a seed cone from the Norway spruce (*Picea abies*), a European tree that has been planted widely in North America near homes and in conifer plantations. Mature Norway spruce are easily identified by their heavily drooping branches, and are the only species of spruce that have long (4-6") cones. Red squirrels often nip the cones to feed on the seed at the base of each scale, and sometimes leave large piles of stripped cones and scales at the base of trees. The cones are green at first and then turn brown as they mature and dry out.



Greg Miller

distribution of fireflies and their activity during the summer season. See June 2010 *Conservationist* ([www.dec.ny.gov/pubs/65630.html](http://www.dec.ny.gov/pubs/65630.html)) or visit the Museum of Science's website [www.mos.org/fireflywatch/](http://www.mos.org/fireflywatch/).

### Quake-Catcher Network: Year-round

Citizen scientists can even help monitor earthquakes! The Quake-Catcher Network is a collaborative effort in which participants link their networked laptops and desktops for the purpose of forming the world's largest and densest earthquake monitoring system. The goal of the network is to provide a better understanding of earthquakes and to give early warnings to schools, emergency responders and others. Participants need to install a small, low-maintenance motion sensor. Visit <http://qcn.stanford.edu/>.

### Hudson River Almanac: Year-round

The Hudson River Almanac is a natural history journal that presents the observations of many individuals (more than 1,700 contributors to date), who range from elementary school students to professional biologists. The almanac contains valuable information on the entire river (from the High Peaks of the Adirondacks to New York Harbor), and encourages others to look more closely at the Hudson. From 1994 to 2001, the almanac was published as a bound book; today it is a free electronic newsletter delivered weekly via e-mail. To learn more, visit [www.dec.ny.gov/lands/25608.html](http://www.dec.ny.gov/lands/25608.html). To subscribe, e-mail [hrep@gw.dec.state.ny.us](mailto:hrep@gw.dec.state.ny.us) (write E-Almanac in the subject line).

**Bernadette LaManna** is a contributing editor of *Conservationist*.



For more information about becoming a citizen scientist, visit DEC's website at [www.dec.ny.gov/animals/1155.html](http://www.dec.ny.gov/animals/1155.html) and [www.dec.ny.gov/about/1151.html](http://www.dec.ny.gov/about/1151.html), or check out Science for Citizens at <http://scienceforcitizens.net/>, National Wildlife Federation's (NWF) Wildlife Watch at [www.nwf.org/WildlifeWatch](http://www.nwf.org/WildlifeWatch), or Cornell's citizen science webpage at [www.birds.cornell.edu/citscitoolkit](http://www.birds.cornell.edu/citscitoolkit).