



Photo: NJ ENSP

## ENDANGERED SPECIES SPOTLIGHT

### Indiana Bat

The Indiana bat, *Myotis sodalis*, is one of nine bat species found in New Jersey. It is our state's only endangered bat and was among the first animals to be listed under the US Endangered and Nongame Species Act (1973). Because of steep population declines over many decades, this sensitive species is considered endangered throughout its entire midwest-to-eastern US range.

The Indiana bat measures just two inches from head to rump, has a ten-inch wingspan, and at eight grams, weighs a little more than a quarter. The Indiana bat closely resembles its relatives in the *Myotis* genus, especially the little brown bat (*M. lucifugus*). Biologists look for key features as subtle as toe hair length and the hue of a bat's fur in order to tell these species apart.

Like all NJ bats, Indiana bats are eager insect-eaters that can consume more than

half their body weight in moths, beetles, flies, mosquitoes, and other flying bugs each night from spring through fall. They have fine vision (probably as good as ours) but rely on echolocation to navigate and catch prey in the darkness of night, typically along floodplains and above the tree canopy.

In the daytime, while male Indiana bats roost alone or in loose bachelor colonies, females group together in maternity colonies of up to one hundred or more adults. What they're after is not companionship — so far as we know — but rather a safe, dry, and warm environment for raising their young. Each female will give birth to just one pup per year and will nurse it for a month. Indiana bats tend to choose dead or dying trees in sunny locations, roosting snugly under sheets of flaking bark.

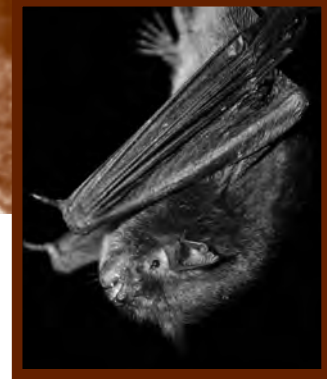


Photo: Justin Boyles

Indiana bats don't stay put, though. Radio-telemetry studies, including one within Great Swamp National Wildlife Refuge, have found that maternity colonies switch roosts often, sometimes nightly, even when the pups are young and flightless. This strategy probably deters parasites and predators, allows for thermoregulation, and keeps the bats on their toes, since dead trees do not stand forever. It also underscores the value of balanced, multi-aged forests.

In early fall, all of NJ's bats make some kind of move to prepare for winter. Three species — the red, silver-haired, and hoary bats — migrate to southern states, while six "resident" species make a shorter jaunt to their familiar cave, mine, or other hibernation spot. Indiana bats use only caves that meet their preferences for temperature (3-6°C), humidity (87%), dimension, and air flow. Very few caves

*continued on page 3*



## Why do we keep messing with our waters?

*Thales of Miletus, a Greek philosopher, who lived around 600 BC is famous for saying that "all things are water" and that "water is the principle, or the element, of things."*

*2,700 years later, we need to resurrect Thales' wisdom and spotlight the continued degradation of water in our state and beyond.*

*This summer was a bad one for water in our state and beyond. Lack of rain created near drought conditions across the state in mid-August. High levels of oxygen in the water from high summer temperatures created fish-kills in the Delaware Bay at the height of the summer. Barnegat Bay and its associated ecosystems were generally agreed to be at the precipice of failure and the state's seafood industry, which is entirely reliant on water, was found to be out of compliance with federal regulations.*

*In the region, water quality in the Delaware River and its tributaries, as well as in the aquifers underneath it, are threatened by proposed gas drilling in the Marcellus Shale while the Gulf of Mexico, winter home for many of our rare and threatened species, is reeling from the worst oil spill in history.*

*Given that "all things are water," why do we still keep messing with it?*

*One of the most frustrating water related issues to come into the firm light of day this year is the state of Barnegat Bay and the reluctance of our leaders to address the problem in any coherent manner.*

*Barnegat Bay is home to a plethora of rare and endangered species of wildlife including ospreys, piping plovers, diamondback terrapins and American oystercatchers. It is a riot of bird and marine life during the season and a wonderful place to recreate. Yet, the bay is dying thanks to overdevelopment in the area and an unceasing flow of fertilizer run-off from maintenance of lawns and landscapes unsuited to this part of our state.*

*This summer, NJDEP held a series of stakeholder meetings about the state of the bay, the threats to it and the actions needed to restore it with the promise of a plan for the bay in the near future. The Asbury Park Press published a series entitled "Barnegat Bay Under Stress." The state's Assembly and Senate environmental committees held a 6-hour joint session on the issue passing four bills out of committee designed to reduce fertilizer run-off, provide for better storm water management and address soil erosion.*

*While these conversations represent really great and good news, our friendly Greek philosopher Thales reminds us that "a multitude of words is no proof of a prudent mind." So, let's hope that the multitude of words expended this summer on the topic of a failing ecosystem can translate into action to restore the waters for the wild and human life that depend on a healthy Barnegat Bay.*

## ENDANGERED SPECIES SPOTLIGHT – *Indiana Bat*

and mines fit the bill, so those that do contain nearly all of the Indiana bats in existence.

It is this selectivity that makes the Indiana bat most vulnerable. During hibernation, bats drop into a low metabolic state and won't eat again until spring. They awaken on their own periodically, but unscheduled arousals can cost them weeks or even months worth of stored energy. Disturbances during hibernation can literally cost the bats their lives. In the late 1960s, for instance, repeated cave exploration in Virginia's Rocky Hollow Cave may have

reduced an Indiana bat population from more than one million bats to mere thousands in a single year. New Jersey's own Hibernia Mine — the largest known bat hibernaculum in the state — was under similar threat until it was gated and preserved in 1994.

The latest threat to Indiana bats and other cave species is quickly unraveling years of conservation work. White-nose Syndrome (WNS) has spread to at least a dozen states and two Canadian provinces in the past four winters. WNS upsets the bats' hibernation

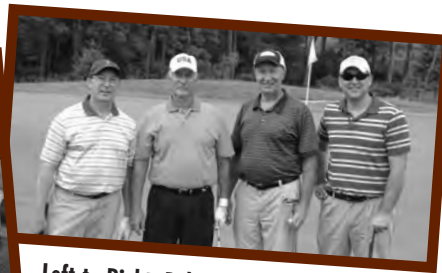
cycle, depleting their energy stores and causing starvation. Nearly all bats have died at many affected sites.

We are participating in several research projects looking into the causes of WNS, its means of spreading, and possible treatments or solutions. Please visit our website to learn more about WNS and related research. ✈

### ENDANGERED OR THREATENED

**What's the difference?**  
*An endangered species is in danger of becoming extinct throughout all or most of its range. A threatened species is likely to become endangered in the foreseeable future.*

Left to Right: Steve Weiman, Tony Sidoti, Ravi Samaroo, Rick Weiman



Left to Right: Bob Coleman, Richard Roig, Bill Coleman, Andrew Hurdman

## Golfers Come Out to Play A Round for Wildlife

The tenth annual Conserve Wildlife Foundation Golf Classic was held on June 1st at the Stanton Ridge Golf and Country Club in Hunterdon County. Afternoon showers could not dampen the enthusiasm of the over twenty foursomes that had come out to *Play A Round for Wildlife*. The new shamble format and added contests contributed to the fun on the course. Once players

returned to the clubhouse, they enjoyed bidding on a great variety of silent auction items before sitting down to enjoy dinner and receive prizes. Proceeds from the event support rare wildlife conservation. We are pleased to acknowledge two board members, Rick Weiman and Bob Coleman, for their dedication to ensuring the event's success. ✈

## Thank you to all our 2010 Golf Sponsors!

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# Bats Emerge to Join Guests at Windfall Farm

When Rob and Diana Garrett invited friends and neighbors to Windfall Farm to talk about Conserve Wildlife Foundation's important work, they knew their regular house guests would not emerge until dusk. The more than seventy five big brown bats visiting the Garretts this summer could be considered the evening's honorees, given that the state's declining bat population was the concern shared by those who gathered. Our efforts to study the devastating impact of White Nose Syndrome were of particular interest. Guests also heard about our broader mission to protect New Jersey's rare and endangered wildlife.

When the bats emerged from their barn roost, we demonstrated our new AnaBat acoustic detector, which picks up the frequency sounds that bats make as they fly and search for insects. As darkness fell, we recorded two unexpected species from the forest nearby — the eastern red bat and the hoary bat — as they passed invisibly overhead.

A special thank you goes to our hosts for helping to engage new people in supporting our critical programs to strengthen and protect imperiled wildlife populations. If you are interested in hosting a party at your house, please contact Liz Silvernail, Director of Development, at [liz.silvernail@conservewildlifenj.org](mailto:liz.silvernail@conservewildlifenj.org).

**Hella McVay and Staff Biologist MacKenzie Hall discuss creating more roosting opportunities for the endangered Indiana bat.**



**MacKenzie Hall demonstrates the AnaBat acoustic detector for Diana Garrett, Holly Bauer and Carol Lipson.**



**Rob Garrett and Board Member Marty McHugh enjoy the beautiful evening.**



**Executive Director Margaret O'Gorman shares one of the organization's many success stories.**



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# Looking to infuse some wildness into your classroom?

Enter our very popular Species on the Edge Art & Essay Contest! It's open to all 5th graders throughout New Jersey and encourages students to think about rare wildlife in New Jersey, not just on television.

To enter the contest, students research a species of wildlife that is rare or endangered in New Jersey. They write an essay detailing the needs of the species and the challenges to its future existence. They then create artwork — a painting or collage — depicting their chosen animal in its natural habitat.

Over the past 8 years, almost 20,000 students have entered the contest and have expanded their knowledge about New Jersey's imperiled wildlife. Hundreds of teachers throughout the state have participated in the contest and have praised its interdisciplinary approach and its ability to create a deep appreciation for nature:

“My students love the Species on the Edge Contest because they enjoy learning about the many endangered animals in New Jersey, which fits into our curriculum. The contest helps raise their awareness about how humans interact with the natural world. My students take ownership of one species, and through artwork and

research, they express their concerns about the environment and how to protect it.”

--Mary Keyser, Maple Road School, West Milford, NJ

A winner is chosen from each county in NJ, 21 winners in all. The winning artwork and essays become part of a statewide traveling exhibit, helping to raise awareness for New Jersey's endangered wildlife. Finally, the winning entries are published in a beautiful, colorful calendar to help inspire people to conserve wildlife throughout the year!

**It's free and easy to participate!** Download your contest kit beginning October 1st from [www.conservewildlifenj.org](http://www.conservewildlifenj.org). The kit contains everything you need to participate — lesson plans, entry forms, and a list of approved resources for research.. ✨

**Cindy Song of the Village School in Mercer County chose the Silver bordered fritillary butterfly**



## Immersed in Barnegat Bay

“The days are so long, but they go by so quickly.” These words of wisdom were spoken by one of the wonderful kids that participated in the first annual Sedge Island Summer Field Experience in early August. This program, a partnership between Conserve Wildlife Foundation and Sedge Island Natural Resources Education Center, brought 14 children from across the state to live “off the grid” and experience the wonders of Barnegat Bay and the Sedge Island Marine Conservation Zone.

For 5 days this group of enthusiastic environmental explorers experienced clamming, kayaking, bird watching, fishing, fish tagging and even terrapin hatching. Each day a different activity was organized by our friends and partners in the conservation community and each night, the group reflected on their activities by writing in journals provided especially for this experience. These kids were privileged to learn from the experts — biologists and environmental specialists who work on various topics like shellfish restoration, bird and terrapin conservation, to oceanography.

On the last day of the Field Experience, the kids welcomed parents and visitors to discover all the wonderful things that they had learned about during the week. The kids taught their parents about the Barnegat Bay ecosystem and its natural wonders. All involved considered this pilot program to be a great success that will be duplicated in future years.

In today's world, kids don't spend enough time exploring and discovering the natural environment. This summer field experience allowed these kids to reawaken their innate curiosities about the world around them (something that EO Wilson calls “biophilia”). It enabled them the time to think about how their actions impact the environment and ultimately, how they can have a positive impact on their environment at home, in their school, or in their community. ✨



**The first group of kids to participate in the Sedge Island Summer Field Experience**

## CWF and our Urban Partnerships

Conserve Wildlife Foundation of New Jersey has forged an interesting and unique partnership with New Jersey City University (NJCU), one of our state's public universities and a leader in urban public higher education.

In 2008, we worked with NJCU to secure a grant from the US Department of Agriculture's Hispanic Serving Institution grants program that promotes the enrollment of Hispanic youth in higher education and access to careers in agriculture, food science and natural resources conservation.

Our grant is to support the development of an urban ecology program focused on natural resources protection and engagement of NJCU undergraduates as interns in entities in New Jersey working on protecting our environment.

Through this grant, we are working with NJCU's biology, chemistry and geology/geosciences departments to develop urban ecology courses that will become part of an environmental science major with a focus on STEM (Science, Technology, Engineering and Math) subjects.

We are very excited about engaging students in natural resources protection in an urban setting, especially given the rare and endangered wildlife that live in our cities. In New Jersey, our urban environments are complex and challenging places to work because of the myriad of threats to water quality, air quality, open space and biodiversity.

The peregrine falcon is a great example of a creature adapted to urban living. Once nesting on natural cliffs in New Jersey, it now makes its home on skyscrapers and bridges in urban centers like Jersey City and Elizabeth. While it can thrive in this setting, it also faces challenges from the toxins in its diet and the infrastructure of the city, a virtual obstacle course that can prove fatal to young birds learning to fly. Its recovery in New Jersey is, in part, thanks to the habitat provided by our cities but also to the biologists who have made the city habitat part of their work.

The most interesting part of our partnership with NJCU is the annual internships available through this grant. This past summer, we placed seven students in full paid internships in organizations across the state. Students were able to experience life working at the Natural Resources Conservation Service, a federal agency within USDA; at Liberty State Park working as seasonal staff supporting their interpretive efforts; at Future City in Elizabeth working on the Elizabeth River/Arthur Kill Watershed Association and at Conserve Wildlife Foundation learning about the state's biodiversity and our work to stop species loss in New Jersey.



**CWF intern Agata Kaczowski holds one of the Jersey City peregrine falcon chicks**

This summer, we had the pleasure to work with Agata Kaczowski, a biology major from NJCU. Agata joined us in late May and jumped in with both feet and tremendous enthusiasm, helping us with a broad range of programs from our golf fundraiser to our bat monitoring program. For Agata it was a summer of firsts — first time to see a peregrine falcon, first time to hold an osprey chick, first time to work with a non-profit organization and first time to visit Barnegat Bay. For us it was a pleasure to introduce someone to New Jersey's natural world and the fascinating biodiversity contained in our small state.

Our partnership with NJCU will continue to provide these experiences to students over the next two years and will also leave a lasting legacy of an urban-focused environmental science course at a leading urban public university. ✈

## 2010 New Jersey Wild Outdoor Expo

September 25-26, 2010

10 AM – 4 PM Daily

Assunpink Wildlife Management Area

Upper Freehold Township, Monmouth County

**FREE Family Fun!** Come celebrate New Jersey's outdoor recreational opportunities and bountiful natural resources! The event, hosted by the NJ Department of Environmental Protection's Division of Fish and Wildlife and the Conserve Wildlife Foundation of New Jersey, will combine conservation

education with hands-on, outdoor experiences. Visitors will enjoy a wide array of activities, including fishing, hiking, kayaking, rock climbing, orienteering, camping, wildlife watching and much more.

Volunteers are needed! Please sign up to help with event activities, parking, set up/break down, and participant survey. Please contact Liz Silvernail at 609-292-3707 or [liz.silvernail@conservewildlifenj.org](mailto:liz.silvernail@conservewildlifenj.org) for more information. ✈





## BEHIND THE SCENES

Ben Wurst, Habitat Program Manager

### What is the best thing you get to do?

The best thing I get to do is to help manage the osprey population in New Jersey. I survey osprey nests and band nestlings in late June/early July. I've raised private donations to help repair old platforms and build new ones to help the population recover to historic numbers (over 500 pairs).

### What has been your biggest success in your current job?

Besides installing over 50 osprey platforms in 3 years, I'd have to say lobbying for a new website for our organization. Moving from one of the most non-user friendly websites to one of the best non-profit websites is awesome! We have an online field guide that describes all 73 species listed in New Jersey, the threats wildlife face, and our work to protect them. It's a great resource and tool for anyone interested in wildlife conservation in New Jersey.

### What is the one tool or resource that makes your job easier?

I started out using paper maps to locate ospreys several years ago. Now I use a GPS to navigate coastal waters and locate osprey nests. In some areas, like Sedge Island Marine Conservation Zone, where you're surrounded by osprey platforms, it makes the job a lot easier!

### If you couldn't do what you are doing now, what profession would you attempt?

If I could choose a different career I think I'd like to be a small business owner. I've contemplated starting my own business

to recycle, reuse, and reclaim building materials. I currently collect old salvaged wood to make picture frames and other items. I do everything and anything to reduce my impact on the environment.

### If you could be one animal (that lives in NJ of course!) what would you be and why?

I would have to be an osprey. I love fresh fish and visiting the Caribbean, just like ospreys. They winter in northern South America and the Caribbean and breed in New Jersey. They hunt while on the wing and can hover. I think I'd spend time on St. John in the winter if I were an osprey!

### Why did you decide to become a biologist?

I always wanted to work outdoors. I decided to pursue a career in wildlife conservation after working for my Dad as a Veterinary Technician for several years. He cared for injured wildlife, especially birds of prey. I got to handle these magnificent birds. He inspired me to follow his footsteps and care for the animals he loved to help. 🦅



## Explorations

In addition to *TRACKS*, we also produce an electronic magazine called *Explorations*. This e-magazine tells stories about New Jersey's wildlife, enabling us to take advantage of electronic communications to present full-color photographs and links to more information. The most recent edition of *Explorations* featured reports about Nesting Platforms for Peregrine Falcons, Results from the 2009 Summer Bat Count, and an article about being a Bald Eagle Nest Monitor Volunteer.

If you would like to subscribe to *Explorations*, please send your email address to [info@conservewildlifenj.org](mailto:info@conservewildlifenj.org) and put "Explorations" in the subject line.

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Our mission is to protect and preserve the rare and imperiled species of wildlife that live, breed, and migrate through our state by restoring habitat, managing species, educating and engaging citizens, and conducting research.

# TRACKS TRACKS

CONSERVE WILDLIFE FOUNDATION OF NEW JERSEY • VOL. 03 NO. 03



## PHENOLOGY FUN

*Phenology is the study of the timing of natural events. The word comes from a Greek word that means "coming into view." Events like the first openings of leaf and flower buds and the first calls of frogs and toads are all considered phenological events. The timing of these events indicates local and global weather and climate changes, as well as other changes to the landscape and habitat. These events are also fun for you and your family to discover and record.*

### September

*First week:* Bats begin returning to their hibernaculum. Of the nine bats species in New Jersey, 6 of them, including the federally endangered Indiana bat, will remain here, hibernating in abandoned mines and caves. The remaining 3 species migrate south for the winter.

Southbound songbird migration peaks in New Jersey. Some songbirds, like the bobolink, will travel over 12,000 miles in one year from its wintering grounds in Brazil and Argentina to its breeding grounds here in New Jersey and back again.

*Third week:* Timber rattlesnakes begin entering their dens to begin hibernation. Timing varies among individuals and occurs between mid-September and late October.

Broad-winged hawk numbers peak during their southbound migration.

### October

*First week:* Indiana bat mating reaches its peak. They mate during evening swarming. Females will begin hibernation almost immediately after mating, while most males stay active into November and December.

The fall migration of Cooper's hawks occurs in New Jersey from September to November, but peaks this week.

*Third week:* Triggered by cooling temperatures, corn snakes begin to retreat to their wintering sites. This will continue through November. Underground burrows, stump holes, or hollow railroad ties located beneath the frost line serve as hibernacula.

### November

*Second week:* Red-shouldered hawk migration peaks in New Jersey. Visit one of NJ's hawk watching sites. Go to [www.hawkcount.org](http://www.hawkcount.org) to find one near you

*Third week:* Snow geese migration peaks in New Jersey. Other waterfowl such as brant, black duck, buffleheads, and green winged teal can also be found. A great place to witness waterfowl migration is at the Edwin B. Forsythe National Wildlife Refuge in Atlantic County.