



Photo: Allen Barlow

## ENDANGERED SPECIES SPOTLIGHT

### Tidewater Mucket

It was a blustery winter morning when my brother and I donned our hip waders in search of tidewater muckets. I don't often go looking for freshwater mussels in January, but sighting reports for muckets are somewhat rare, and I needed to confirm what Ben (a WCC volunteer and mussel enthusiast) had found while retrieving his muskrat traps.

As the name implies, the tidewater mucket (*Leptodea ochracea*) is often associated with tidewaters. In North America, the species ranges from the Savannah River drainage in Georgia, north to Nova Scotia. In New Jersey, the mussel is reported in the Delaware River from Trenton south to its lower tributaries, including Rancocas, Alloway and Menantico creeks. Until receiving Ben's text message and photograph of what appeared to be a live mucket, I had never known the species to occur in NJ lakes.

The tidewater mucket is one of our state's 12 native mussel species. Freshwater mussels are bivalves that inhabit rivers, creeks, lakes, and ponds. They spend much of their lives partially embedded in the substrate, filtering food (mostly plankton and bacteria) out of the water column. The water is pumped into the mussel by a siphon. As cilia move food towards the mouth, pollutants are also strained out, thus improving water quality and earning mussels the nickname "nature's vacuum cleaners." Because of their sensitivity to contaminants, they are excellent water quality indicators. Mussels also provide food for muskrats, raccoons, and other wildlife.

The water is higher and more turbid than we expected due to steady wind and previous day's rain. Ben points out places near the sandy shore where he had discovered mucket shells. It isn't long before our work pays off; after

retrieving a dozen shells of a common species (Eastern floater) from the frigid water, we locate five of the heavier, more ovate shells of the tidewater mucket.

The tidewater mucket can be found in sand/silt and small gravel substrates. It has a yellowish to greenish-brown shell that usually doesn't exceed three inches. The nacre, or inner mother-of-pearl shell layer, is iridescent pink or salmon-colored. The species can be confused with the yellow lampmussel, another Delaware River resident.

I am encouraged that Ben has found small shells, a sign that reproduction is occurring. Tidewater muckets spawn in late summer and release their larvae the following spring. Like most freshwater mussels, muckets require a host fish to complete their life cycle. The larvae, known as glochidia, are ejected from

*continued on page 3*

## From Our Executive Director

### *Listing Towards Recovery*

*In 1973, Governor Cahill of New Jersey signed the New Jersey Endangered Species Conservation Act into law. Since then, the Endangered and Threatened Species list in New Jersey has changed eight times, reflecting conservation successes and escalating challenges.*

*This year a new list sees the addition of the golden-winged warbler as an endangered species, due to its continued decline from loss of the shrublands it needs for breeding. The red knot's status has been changed from threatened to endangered, highlighting a serious concern for its future as its numbers remain startlingly low. The grey petaltail, a dragonfly, is also added to the Endangered Species list while the cattle egret, American kestrel, horned lark and six species of dragonfly including the superb jewelwing make their debut on the list of threatened species.*

*An endangered species is one whose numbers are so small that the species is at risk of extinction. Threatened species are any species vulnerable to endangerment in the near future. By adding species to the list as threatened, we hope to halt their decline*

*towards endangerment and prioritize investment in their protection. By elevating a species status to endangered, we sound an alarm call that this species is in serious trouble and we need to allocate as many resources as possible to its recovery.*

*Recovery is achievable. In 1979, the great blue heron was listed as threatened, today it is considered of "Special Concern" and is a common sight for anyone wandering around New Jersey's wetlands. Over the years, recovery of osprey, Pine Barrens treefrog and now Cooper's hawk, has allowed movement from endangered to threatened and, finally off the list.*

*These species did not decline overnight, nor will they recover in a short time. Biology dictates the maximum possible speed of recovery but many other factors, including ecosystem health, habitat protection, climate and weather, have an impact. While there are many unknown factors that affect a species' chances of survival, one indisputable fact is that without New Jersey's Endangered and Nongame Species Conservation Act, and the hard working biologists across our state, we would lose many more species to extinction and we would be a lot poorer because of it.*



Margaret O'Gorman  
Executive Director



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## ENDANGERED SPECIES SPOTLIGHT – Tidewater Mucket

the female mussel's excurrent siphon after developing from eggs held in the gills. Glochidia are microscopic and free-floating, and must attach to a particular fish species to survive. After several weeks of consuming vital nutrients, the newly transformed juvenile mussel drops off the fish. With any luck, this occurs over suitable habitat. The mussel burrows into the sediment, spending its first year of life hidden below the substrate. Although the mucket's host fish in NJ is unknown, it is thought to be anadromous, migrating from the sea up rivers during certain times of the year.

Freshwater mussels are one of the most rapidly declining animal groups in the country, with 55% of species extinct or imperiled. Mussels are threatened by water quality and habitat degradation, dams (which can block host fish passage), and expansion of exotic mollusks. Since freshwater mussels are among the longest-lived animal groups on

Earth (some species can live 100+ years!), declines are often overlooked. A population can be functionally extinct, with individuals surviving without reproducing. In NJ, nine species are listed as Endangered, Threatened or Special Concern. The tidewater mucket's status is threatened.

On our next visit, the water temperature had dropped, and I suspect the muckets have buried under the substrate. We search for live individuals, and although Ben finds a filtering floater, muckets are nowhere to be seen. We walk to where he had spotted a large, live mucket days earlier. My fingers and toes are numb, and I make a mental note to buy a cheap pair of insulated hip waders. Then we see it, at first just a glint of gold; a fresh shell where the live mucket had been – apparently our mussel had become food for a hungry muskrat. As if on cue, glistening snowflakes cascade over the lake and dust the surrounding vegetation.

It is time to go. But I'll be back in spring, when muckets release their glochidia and can be easily spotted on the substrate. The work at this site, now confirmed tidewater mucket habitat, has only just begun. ↗

*Written by: Jeanette Bowers-Altman, Principal Zoologist, NJ Endangered & Nongame Species Program*



### 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.*



## SAVE THE DATE

### *Women & Wildlife* Awards

**Sunday, April 15, 2012**  
**Prallsville Mills in Stockton, New Jersey**

For the 7th year, we will honor two outstanding women for Leadership and Inspiration in the fields of wildlife science and natural resource protection. This year we are excited to add a third category – Education – to recognize a woman who has successfully increased awareness, interest and knowledge of rare species and their habitats.

Please make your reservations at [www.conservewildlifenj.org](http://www.conservewildlifenj.org), or call Liz Silvernail at 609-292-3707. Tickets are \$50 per person. All proceeds are used to advance the protection of rare wildlife.



## Become a Monthly Supporter – Help Stop Species Loss 12 Times a Year



Photo: © Eric Sambol

It's easy to join our monthly giving club and support wildlife protection a dozen times a year.

As a monthly member, you will stop species loss in a real and tangible way:

- For \$10.00 per month you will help us to build and install an osprey platform
- For \$20.00 per month you will buy 24 feet of fencing to protect terrapins
- For a dollar a day, or \$30.00 a month, you will allow us to deploy a steward on Delaware Bay beaches to protect shorebirds from dangerous disturbances.

And, as a thank you, we will send you a Conserve Wildlife Foundation of NJ baseball hat to wear and show your support for rare wildlife in New Jersey.

### Please go to:

[www.conservewildlifenj.org/getinvolved/donate/monthlygivingclub](http://www.conservewildlifenj.org/getinvolved/donate/monthlygivingclub)  
to sign up securely using PayPal, or call Liz Silvernail at 609-292-3707. ✈

# Species On The Edge



Bob Coleman, CWF board member, and Nicole Nguyen, (at left) both members of Church & Dwight's Employee Giving Fund, present Margaret O'Gorman, Executive Director of CWF (2nd from left), and Maria Grace, CWF's Education & Outreach Manager, with a generous donation to support the *Species on the Edge Art & Essay Contest*.



Maria Grace uses "Petey" the peregrine falcon as an educational tool to talk about the reasons for raptor population declines and their subsequent return from the brink of extinction.

# Species on the Edge Continues to Expand Across New Jersey

Sponsors Subaru of America Foundation and Church & Dwight help make it possible

The Species on the Edge Art & Essay Contest is celebrating 10 years in 2012! The contest continues to inspire and educate 5th graders across the state about NJ's rare and imperiled wildlife. New sponsors, Subaru of America Foundation and Church & Dwight, have helped CWF to expand promotion of the contest thus reaching hundreds more 5th grade students.

Subaru of America Foundation generously provided funding to support expansion of the contest in Camden County. In the past, Camden County has had low participation, with only a couple dozen entries at best each year. With Subaru of America Foundation's support, CWF was able to reach out to Camden County school districts and offer free outreach programs and resources to help teachers and students learn more about NJ's rare wildlife and the need to protect it.

On a cold winter day, CWF's Education & Outreach Manager, Maria Grace, visited the ECO Charter School in Camden. With plenty of wildlife specimens and an endless supply of enthusiasm and knowledge, Maria talked to the students about NJ's rare wildlife and

why it was important to protect it. Maria gave them a homework assignment - to share their newly discovered knowledge with their friends and family members, one of the most important things in protecting wildlife. An easy lift, since each of these students participated in the contest and learned about one of NJ's rarest wildlife residents.

With the support of CWF board member and Church & Dwight employee, Bob Coleman, CWF was selected to receive Species on the Edge funding from Church & Dwight's Employee Giving Fund. Church & Dwight's contribution was instrumental in CWF's broadening its statewide educational outreach to more schools as well as the general public, fostering stewardship for the environment.

Through their generous sponsorship of the Species on the Edge Art & Essay Contest, Subaru of America Foundation and Church & Dwight's Employee Giving Fund join our partners in sending the message that they value academic environmental programs and encourage responsible stewardship of the natural world. ✈

## Thank you to the 2012 Species on the Edge Art & Essay Contest Partners.



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**Maria Grace, Education & Outreach Manager, talks to a student from ECO Charter School in Camden about NJ's rare wildlife.**



**Students from Camden's ECO Charter School show off their artwork for the Species on the Edge Art & Essay Contest.**



## Searching the Treetops

At this time of the year, bald eagles across New Jersey are nesting in earnest. But just a few short months ago, CWF staff (in partnership with the NJ Endangered and Nongame Species Program) took advantage of the eagles' time away from their nests to visit and collect GPS locations on some of the newer nesting locations.

Bald eagles were removed from the federal Endangered Species List in 2007 but they are still listed as endangered in New Jersey and are also protected under the Bald and Golden Eagle Protection Act. Since there are stricter regulations for building and development around eagle nests, accurate mapping is critical. So, each fall we head into the field to map as many of the new nest trees as we can.

In 2011, a record 103 pairs of eagles nested throughout the state, fledging 119 young. Most of the nesting pairs are located in the southern portion of the state, especially along the Delaware River. But more pairs are starting to nest around small lakes and reservoirs in northern New Jersey. In 2011, Hudson, Essex and Union were the only counties in New Jersey without an active nest.

Because bald eagles are large and easily identifiable, people tend to notice when a pair stays in the same area day after day. Many times we find out about new nest locations in the spring when people in the area contact us by e-mail or by submitting a Rare Wildlife Sighting Report Form (<http://www.conservewildlifenj.org/protecting/mapping/>). Since we won't visit while the birds are nesting we wait until fall, after the young have fledged, to make our visits. In this way, we don't disturb the eagles and by visiting in the fall, it becomes easier to find the nests thanks to the absence of leaves.

When we visit a reported nest for the first time, we only have a general idea of where the nest is located. After going to enough

nests, you begin to get a sense of the type of location they prefer. Eagles often build their nests in the tallest, largest tree in the area, which makes sense since the nests themselves are so large. A typical nest is about five feet in diameter and eight feet deep. Well established nests can grow much larger. If the nest is built on the edge of the tree line, it will be fairly easy to find once the leaves are down; the dense collection of branches that make up the nest shows as a dark spot from a surprising distance away.

However if the nest is more than a few yards into the forest, it can be very difficult to locate until you are near it, and entire afternoons can go by searching for a nest built in a large stretch of forest. Eagles prefer to nest near water where they can forage for food, so in addition to dealing with briars we also spend a lot of time walking through mud and stands of phragmites. Once we locate the nest tree, we collect the GPS location along with some basic information about the tree such as the species, the dbh (diameter at breast height), height of the nest and overall height of the tree. As the number of nesting bald eagles has increased, we've begun seeing nests in less traditional locations, including osprey platforms and even a cell phone tower.

For more details about all the active nesting pairs, including a map of nest locations throughout the state, maps of the movement of a fledgling equipped with radio transmitters and details of the 2011 Wintering Eagle Survey, check out the 2011 Bald Eagle Report which can be viewed or downloaded at [www.conservewildlifenj.org/downloads/cwnj\\_121.pdf](http://www.conservewildlifenj.org/downloads/cwnj_121.pdf). ✍

**And don't forget about the Duke Farms EagleCam!**

<http://www.conservewildlifenj.org/education/eaglecam/>



**Left:** One of the biggest challenges of the season was locating this nest in Stow Creek Township. Although it was easy to spot we had to take a circuitous route to approach it because it was almost surrounded by water. This was a new nest in 2011 and fledged one young. **Center:** This nest was found in an oak tree near the edge of a farm field in Stow Creek Township. **Right:** An example of an unusual (yet easy to see) nesting location, this eagle pair used a powerline in the middle of a farm field in Lower Alloways Creek Township. This pair fledged one young in 2011.





## BEHIND THE SCENES – *Karena DiLeo*

### What is the worst thing you have to do for your job?

Driving, it's great having the opportunity to work all over the state but some days I feel like I spend more time in the car than outside.

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

Recently I have been surveying bog turtle habitat and there is nothing like hiking through the forest and coming upon a beautiful hidden swamp--it can feel almost prehistoric with giant ferns up to my waist and tall tussock sedges in-between old-growth maples. It's amazing-- you forget you are in New Jersey.

### What delights you in your daily work?

The hope that in some small way our work is having a long-term positive impact on the species we work so hard to protect.

### What is one thing you learned working here that surprised you?

New Jersey is incredibly ecologically diverse.

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

I think I would like to have a small organic orchard and maybe keep bees too.

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

My gazetteer, I have a terrible sense of direction and some days I'm not sure I would be able to find my way out of Trenton without it.

### What is the best thing anyone ever taught you?

That sometimes the best way to learn is just by listening and watching.

### What wildlife "lives" in your office?

Unfortunately none, but Petey our Peregrine Falcon is perched on top of my cube.

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

I think a long-tail salamander. They live in these beautiful secluded outcrops and seeps in the Highlands. Although, being a treefrog sounds pretty good too.

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

It feels like we have lost touch with nature and there is still so much we don't understand. If we don't start paying attention soon we will have lost our opportunity. ✈



*Karena DiLeo*

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## 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 bald eagles, diamondback terrapins, and Eastern tiger salamanders.*

*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.



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# TRACKS TRACKS

CONSERVE WILDLIFE FOUNDATION OF NEW JERSEY • VOL. 05 NO. 01

## 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 indicate 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. What natural wonders have you discovered today?*

### March

*Second week:* Bald eagle chicks begin to hatch. Hatching will continue throughout March and April depending on when the eggs were laid. Check out the EagleCam at [www.conservewildlifenj.org/education/eaglecam/](http://www.conservewildlifenj.org/education/eaglecam/).

*Third week:* Ospreys begin to return to their nesting territories throughout New Jersey. We estimate the NJ population to be above 500 nesting pairs.

*Fourth week:* Barred owls begin their mating rituals and can be heard calling throughout their wetland territory.

### April

*First week:* Peregrine falcons begin laying and incubating eggs. Incubation lasts about 32 days. Check out the PeregrineCam at [www.conservewildlifenj.org/education/peregrinecam/](http://www.conservewildlifenj.org/education/peregrinecam/).

Depending on the water temperature, female mussels eject larvae, called glochidia, into the water column.

*Fourth week:* Deep within the Pinelands, warmer temperatures cause corn snakes to awaken from hibernation.

### May

*First week:* After migrating from their wintering grounds at the tip of South America, red knots begin to arrive on Delaware Bay beaches to feast on horseshoe crabs eggs.

*Fourth week:* Timber rattlesnakes emerge from hibernation. Much of their time is spent foraging and basking. They may also molt their skins.

Bobolink females prepare their grassland ground nests for laying a clutch of five to six eggs. The eggs will hatch in 11 to 13 days.

### June

*First week:* Bats begin to form maternity roosts throughout New Jersey. Females will give birth to one (rarely two) pups. *Do you know the location of a summer bat roost? Participate in CWF's Summer Bat Count!*

Shorebirds begin to leave Delaware Bay for their breeding grounds in the Arctic.

*Second week:* Peregrine falcon chicks start to fledge, or fly for the first time.