

Stalking the Rare Painted Rocksnail

Calhoun County, Alabama — Biologists Nathan Whelan and Paul Johnson weren't sure what they'd find when they launched their boat on that balmy Alabama morning. Whelan, a biologist currently serving as the U.S. Fish and Wildlife Service's regional geneticist for the Southeast Region, was updating a scientific manuscript on the [painted rocksnail](#), and needed the most recent information on its current range.

The painted rocksnail is a rather cryptic-looking small-to-medium sized freshwater snail with yellowish-brown coloring. The shell is oval-shaped with four dark bands on the exterior. Found only in Alabama, the snail needs clean, flowing water to survive. Historically, you could find it throughout much of the Mobile River Basin in the Alabama and Coosa Rivers, as well as the Cahaba River. Unfortunately, the painted rocksnail has disappeared from 90 percent of its range and was listed as threatened under the Endangered Species Act in 1998. Biologists say the species faces multiple threats.

"The biggest historical threats are dams. That's why the range is so restricted," explained Whelan. "Current threats include the continued impoundment of the reservoirs on the Coosa River, agricultural run-off, and barriers between populations, which restrict gene flow."

"The large dams ended-up submerged and fragmented the best available habitats within the entire Coosa River basin," added Johnson, director of the Alabama Aquatic Biodiversity Center with the Alabama Department of Conservation and Natural Resources. "As a result, the largest population of the rocksnail was essentially 'removed' from the Coosa River all together;

only leaving behind smaller, more fragmented populations in only a few of its tributaries."

In an effort to improve communication and conservation efforts for the species, biologists launched a massive effort to reassess the identity and historical range of the painted rocksnail. The study took time, but validating the species' true identification was vital to its management and conservation efforts.

"These studies and efforts can be rather intense, requiring a combination of biological (laboratory research) and an investigation of historical museum collections to help determine the historical distribution," explained Johnson.

Mistaken identity

Now, the species faced another problem.

While reassessing the species, biologists discovered the painted rocksnail was actually misidentified when it was first discovered by Timothy A. Conrad in 1834. This meant the species' range was even *smaller* than originally thought.

"It looks like the original author [Conrad] had mistakenly described a juvenile spotted rocksnail, which looks very similar, as the painted rocksnail," explained Johnson. "It's only taken us now 183 years to correct the mistake, and rename the species Conrad originally described in 1834, as **Leptoxis coosaensis**... a new scientific name!"



painted rocksnail (*Leptoxis coosaensis*) photo: Paul Johnson, ADCNR

It was imperative that Whelan and Johnson do everything possible to see if more populations were out there. Both believed Ohatchee Creek, a tributary of the Coosa River, would be a good place to start.

"We weren't aware of anyone who had collected the species there for more than 20 years. But we were also not sure if anyone had really looked," explained Whelan.

According to local and museum records, Ohatchee Creek hasn't seen a painted rocksnail since October of 1992. Could there possibly be a new population?

The two scientists launched just below Neely Dam and motored up to the first big shoal. This wasn't Johnson's first rodeo. As director of the Alabama Aquatic Biodiversity Center, he's arguably one of the state's, if not the nation's, most respected authorities in aquatic species and their habitats. "I've been doing this for so long, I know where to look!" said Johnson.

It didn't take long for the biologists to strike gold.

"I found them within five seconds of putting my hands in the water," explained Johnson. "They were attached to the first rocks I picked up!"

"Pretty much as soon as we got out of the boat, we were picking up rocks with painted rocksnails on them," said Whelan. "To be honest, I was rather surprised. We found a lot in the small stretch of river we sampled."

What does the discovery mean?

Although the newly discovered population is some much-needed good news, the painted rocksnail still has to overcome many obstacles before coming off the Endangered Species list.

"Whenever the existence of an overlooked population of a threatened [or endangered] species is confirmed, it's good news for the species," said Whelan. "Now that we know the snails are in Ohatchee Creek, we can take that into consideration when making management decisions. This population may also serve as an ideal broodstock population for captive propagation and reintroduction efforts. But we have to remember the species is still gone from

more than 90% of its range, and still faces many threats to its survival."

"The rediscovered population is small and rather perilous. There's no immediate, specific threat. There's just not many snails over a very large area, which makes that population more vulnerable to extirpation," said Johnson.

Lessons learned

Alabama Field Office Deputy Supervisor Jeff Powell says the discovery teaches biologists to keep an open mind when looking for a species. He says it's important for researchers to consider all possibilities before ruling out a site.

"Just because a species once occurred in a particular location doesn't necessarily mean it will remain there, and likewise, just because a species was not known from a particular location twenty years ago doesn't mean it's not there now," said Powell. "We've seen this over and over with rare aquatic species that we thought we understood. We also have to consider conducting surveys during multiple times of the year. Some species like the Alabama pearlshell and trispot darter are only

detectable when they're spawning, which might only be a few weeks out of the year. If you're not there in this sometimes very short window, you could easily miss them all together."

Biologists have high hopes for the future of aquatic species. Although Alabama has the most imperiled water species in the nation, multiple partnerships continue to break new ground in conservation. Through the Alabama Rivers and Streams Network, several stakeholders are forming strategies to reduce environmental threats to aquatic species. At the same time, biologists are always looking for suitable habitats and willing landowners to reintroduce imperiled species that are being grown by Johnson at the Alabama Aquatic Biodiversity Center.

"In Alabama, we are blessed with an abundance of biodiversity ... particularly aquatic species. With the help of our partners, including private landowners, foresters, and industries, we have big plans in store for 2018 and beyond," said Powell. "The discovery of this population is only the beginning of great things to come."

O'Neil Receives 2017 Recovery Champion Award

The U.S. Fish and Wildlife Service has recognized Dr. Patrick E. O'Neil, an aquatic biologist with the Geological Survey of Alabama (GSA), as a 2017 Recovery Champion.

In his distinguished career with the GSA, O'Neil has been an integral part of the development of conservation coalitions, listing and down/de-listing decisions, and served as a technical repository for at least 80 listed species. He helped improve passage for the goldline darter, Cahaba shiner, and slackwater darter, and provided critical telemetry research that has become the foundation for working with the U.S. Army Corps of Engineers to implement dam locks for migratory species like the Gulf sturgeon and American eel in the Alabama and Tombigbee rivers. O'Neil has successfully built strong conservation partnerships in the State



Jeff Powell, Alabama Deputy Supervisor; Dr. Pat O'Neil, 2017 Recovery Champion; Bill Pearson, Alabama Field Supervisor; photo: Geological Survey of Alabama

of Alabama and has spent an entire career bringing various stakeholders together and educating them on the importance of clean water, the role of healthy aquatic ecosystems, and how environmental improvements can help with economic development.

Eastern Indigo Snakes Celebrated in Alabama

Multiple staff and biologists throughout the Southeast Region gathered at Conecuh National Forest in Andalusia, Alabama for the Eastern Indigo Snake release and festival. The Alabama Wildlife and Freshwater Fisheries Division in partnership with the U.S. Fish and Wildlife Service (Service), U.S. Forest Service, and other partner conservation groups hosted the big event. Twenty captive-bred snakes were released in gopher tortoise burrows throughout the forest. After the release, organizers kicked off the first inaugural Indigo Snake and Wildlife Festival, where hundreds of students learned about the threatened Eastern indigo snake, the local longleaf pine ecosystem, gopher tortoises and the many species that benefit from their burrows. School groups also interacted with animals and met with wildlife biologists and foresters from



*The Eastern indigo snake (*Drymarchon corais couperi*) (Inset photo) ADCNR Wildlife and Freshwater Fisheries Director Chuck Sykes releases an Eastern indigo snake near a gopher tortoise burrow in the Conecuh National Forest in south Alabama. photos: Alabama Department of Conservation and Natural Resources.*

various state, federal, and private conservation organizations. Service Participants included Michele Elmore with the Georgia Field Office, Matt Laschet and Denise Rowell from the Alabama Field Office, Tony Brady and Ken Blick with Welaka National Fish Hatchery; Drew Becker, Alex Coley and Dan Chapman with the Southeast Regional Office.

AFO Biologists and Partners Save Mussels After Lake Drawdown

Alabama Field Office biologist Andy Ford showed exemplary leadership by forming a wildlife team to assist with the relocation of hundreds of threatened and endangered mussels for a major dewatering event. Every ten years, PowerSouth utility company must lower the water levels in their lakes to make repairs to a hydroelectric dam. The lake is habitat to many protected mussels, including the Choctaw bean, narrow pigtoe and fuzzy pigtoe just to name a few. Andy led a team of state and federal biologists as they retrieved the protected mussels, and relocated them to another body of water. The massive effort took months of planning with several partners, including on-the-ground drills and extensive outreach. Well done, Andy!



*(Top photo) Aquatic biologist Evan Collins holds a narrow pigtoe (*Fusconaia escambia*) mussel. (Bottom photo) Biologists take inventory of mussels found in the lake. photo: USFWS*

Students Learn About Longleaf Pines in Alabama



AFO biologist Shannon Holbrook teaches fifth graders about the "Skins and Skulls" of wildlife, photo: Dr. Salem Saloom, Tree Farmer and Conservationist

Alabama Field Office biologist Shannon Holbrook taught students about the importance of the longleaf pine ecosystem during the annual Forest Field Day celebration in Evergreen, Alabama. This interactive event allowed more than 130 fifth graders to get a hands-on look at wildlife within the forest. The outdoor event featured six stations; Holbrook's station was entitled Skins and Skulls. Curious children were able to touch a gopher tortoise shell, put their hands on a bear skull, and feel the softness of ocelot fur. Multiple foresters throughout the state help to coordinate the event each year. This is the Alabama Field Office's seventh time to participate.

A Conservation Celebration!

Alabama Field Office Deputy Supervisor Jeff Powell, Northern Gulf Coastal Program Coordinator Patric Harper and Public Affairs Specialist Denise Rowell were special guests at the Nature Conservancy's "Conservation Celebration." Biologists and conservationists from across the state of Alabama were invited to celebrate the state's environmental achievements, including the Forever Wild program, and the addition a large tract of Pine Savannah habitat to the existing federal/state land complex along the Mississippi/Alabama state line. Alabama Governor Kay Ivey was the keynote speaker. The Alabama Field Office was also recognized for being a valued partner in conservation.



Alabama Field Office Public Affairs Specialist Denise Rowell, Deputy Supervisor Jeff Powell, and Coastal Program Coordinator Patric Harper pose with Alabama Governor Kay Ivey.

Biologists Assess Stream Crossing in Priority Watersheds

The Alabama Field Office (AFO) has recruited two new volunteers to support our Strategic Habitat Unit (SHU) work in priority watersheds. Erin Padgett received her master's degree in Environmental Science and Policy from Johns Hopkins University. Sarabeth Klueh-Mundy received her master's degree in Biological Sciences from Eastern Illinois University. They make a great addition to the Alabama SHU team.

AFO staff is also working with state and federal partners as well as student volunteers to assess the effects that roads, bridges and other barriers have on the water quality of streams. Students from the University of Alabama, University of West Alabama and the University of West Florida are assisting with the assessments. The team rates the condition of the crossings, and records a value for each site into our interactive mapper, allowing our partners to look at them spatially. The project will help assist biologists as they manage conservation activities across the state. It also helps college students obtain real-world experience in the field. So far, the group has performed 4,000 assessments.



Biologists Erin Padgett and Sarabeth Klueh-Mundy are volunteers with the Alabama Field Office, photos: USFWS



Rare Fish Spotted in Turkey Creek

Working with partners from the Tennessee Aquarium and the Freshwater Land Trust, Eric Spadgenske, Alabama State Coordinator for the Partners for Fish and Wildlife (PFW) Program, collected and documented federally endangered fish that haven't been seen in a section of Turkey Creek for nearly a century. Biologists collected 40 vermilion darters upstream from a former dam on Turkey Creek near Birmingham. The discovery is the result of a 2013 habitat restoration project that removed the old Shadow Lake Dam, and restored its original flow and channel to help increase the population of vermilion darters. This new record



and range extension is significant because the old dam prevented upstream migration, and the previous

extent of the population stopped at the dam. Biologists will continue to monitor the creek and document new findings.

Trees Strengthen Sand Dunes

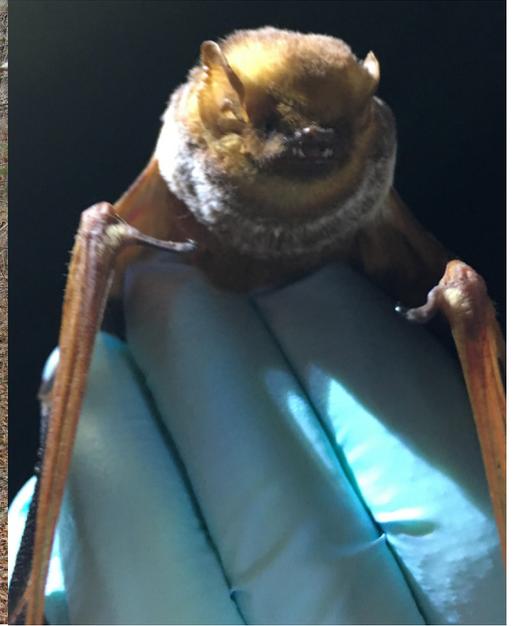


Biologists installed 30 trees to help a landowner create sand dunes on her property, photo: USFWS



Biologists with the Alabama Field Office (AFO) are helping a Fort Morgan landowner restore sand dunes on her property by strategically installing Christmas trees throughout the area. Under the leadership of Alabama Beach mouse biologist Bill Lynn, AFO staff placed thirty Christmas trees in groups of threes along the property. Biologists say sand will accumulate over time, creating sand dunes and refurbishing sand fences. We will keep you updated on this story as it progresses.

Just some photos!



AFO biologists have partnered with multiple agencies and conservationists to help recover bats in the state of Alabama. Biologists are tracking bats to find maternity roosting areas so they can better protect those spots. They are also monitoring populations for white nose syndrome.



The U.S. Fish and Wildlife Service partnered with the Nature Conservancy to light this prescribed fire at Splinter Hill Bog Preserve. Many habitats and species benefit from controlled burns, including longleaf pine forests and white-topped pitcher plant bogs.



photo: Leo Miranda

photo: Bill Pearson

20 years!!!!



Alabama Field Office Supervisor Bill Pearson presents Deputy Supervisor Jeff Powell with a plaque commemorating 20 years with the U.S. Fish and Wildlife Service.

Congratulations, Jeff!

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