

CONSERVATION

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PERSPECTIVES IN CONSERVATION: An Interview with Paul Moler

Paul Moler worked for the Florida Fish and Wildlife Conservation Commission (FFWCC) for 29 years, and now continues with the organization as a volunteer. Paul served as the Commission's first staff Herpetologist. He was interviewed by Conservation Section Editor Jennifer Stabile during December 2016.

What path led you to a career conserving wildlife with the FFWCC?

I grew up in a community outside Atlanta. We had a creek behind the house, and I spent lots of time in that creek catching crayfish and salamanders. I was a suburban free-range kid. By the time I was nine, I would walk a half-mile to a larger creek and wade in catching Queen Snakes and Midland Watersnakes, stuffing them into my shirt for the trip home.

I lived at home through college, received my B.A. in biology from Emory University, and then came to Florida for graduate school. I got my masters in zoology at the University of Florida. After that, I spent about five years working with the Florida Division of Health. With the advent of the Endangered Species program, the Florida Game and Fresh Water Fish Commission (later to become FFWCC) added a herpetologist position in the Wildlife Research Lab in Gainesville. I was fortunate enough to be hired as the Commission's first full-time herpetologist.

What was that like, to be the first Herpetologist for the FFWCC?

I had a lot of liberty to look around, determine what the issues and needs were, and develop the program. The job initially consisted of working with endangered and threatened species. Right off the bat, I started working with American Crocodiles in South Florida. Also, just before I began with the Commission, the Florida population of the Pine Barrens Treefrog (PBT) had been federally listed as Endangered, so that was another species I initially focused on. Along the way, I worked with Florida Bog Frogs, Atlantic Saltmarsh Snakes, Eastern Indigo Snakes, Alligator Snapping Turtles, and sundry other herps.

As a hero to many herpetologists, was there anyone in your life that helped shape your goals and your inspirations?

Many misguided herpetologists, you mean? Not really. Mostly just friends and colleagues who shared my interest in herpetology

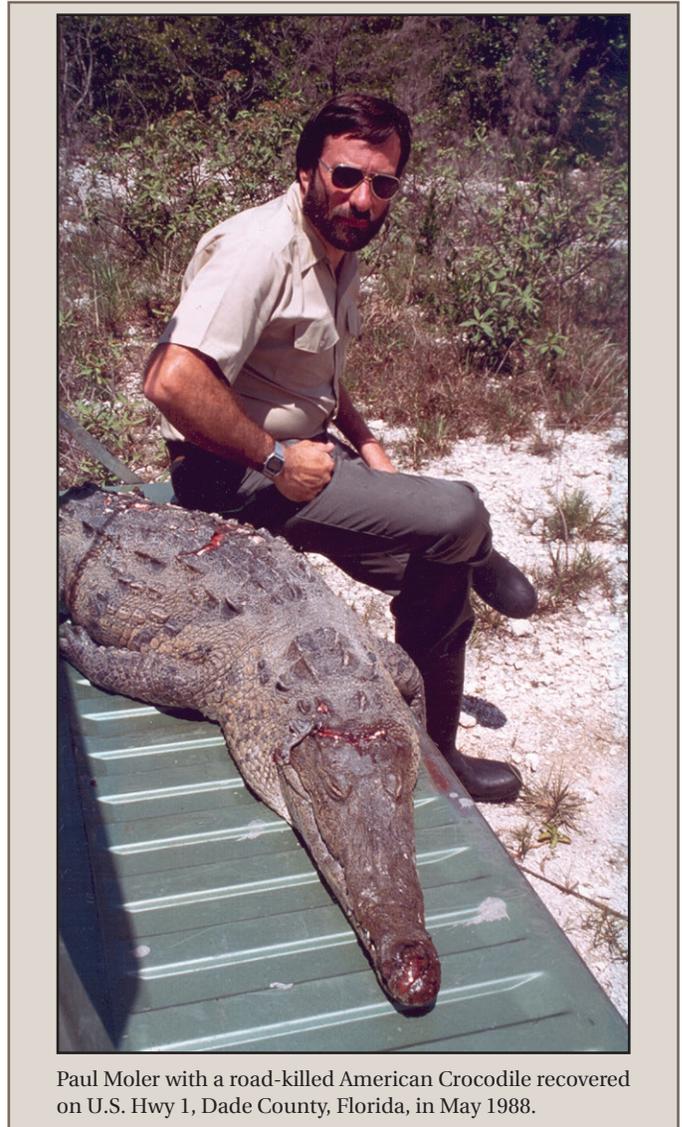


PHOTO BY BILL SERNE

Paul Moler with a road-killed American Crocodile recovered on U.S. Hwy 1, Dade County, Florida, in May 1988.

and natural history in general. If I had to single out four, it would be Ab Abercrombie, Randy Babb, Barry Mansell, and Johan Marais. And, of course, in my youth I spent many hours at the library reading the works of Raymond Ditmars and Percy Morris, and the later influence of Roger Conant could hardly be overstated.

In 1982 you first discovered what became a new species of frog, the Florida Bog Frog (*Lithobates okaloosae*). What it was like to find and describe a new species of amphibian?

In July 1982, I was monitoring activity at Pine Barrens Treefrog sites that I had found earlier on Eglin Air Force Base. I stopped at a site, heard PBT calling, and was writing in my field notes when I noticed an unfamiliar call coming from the adjacent creek. I wandered in and found the frog, which looked much like a juvenile Bronze Frog. I bagged it for later examination and continued on to other sites. Before the evening was over, I had found the same odd frog at five additional sites. Only back at the motel did I have a chance to closely examine a specimen, and the first thing I noticed was that the webbing of the hind feet was very reduced relative to other ranid frogs in Florida. It was immediately obvious that this was a species new to Florida. However, I had found it on an Air Force Base only seven years after the end of the Vietnam War. For a decade prior to the end of the war, large numbers of military personnel traveled to and from Southeast Asia. My misgiving was that this might have been a species introduced from Vietnam. Only after preliminary genetic tests confirmed that it belonged to the Bullfrog group of eastern North American *Rana* was I fully convinced of its novelty.

Also in July 1982, I met Jim Kezer at the herp meetings in Raleigh. Jim had just serendipitously found that one population of *Pseudobranchius striatus* had 24 pairs of chromosomes, whereas another population had 64 pairs. Jim and I began a collaboration that led to the recognition that *Pseudobranchius* comprised two distinct species (formerly recognized as subspecies), with partially overlapping distributions and even occasional syntopy.

What advances have you witnessed in regards to herpetological conservation in Florida?

I began in an era when we had no computers and only very basic genetic tools. We have far more tools to work with now. GPS, GIS, and other computer tools have enabled us to more efficiently gather and interpret data. The advent of genetic tools has drastically increased our understanding of regional biodiversity.

The most outstanding success story is the American Crocodile in South Florida. When we began working with crocodiles in the late 1970s, the annual number of nests in the U.S. was 20–22. Annual nest production is now on the order of 140–150 nests. The substantial recovery of the Florida population of the American Crocodile has certainly been encouraging.

It's a mixed bag. We knew at the outset that if we were successful, we would also have to deal with more nuisance crocodile problems, and certainly, we have a lot more of those than we did in the late 1970s, simply because we have a lot more crocodiles and more people. But crocodile recovery has been very successful and the Florida population has been federally downlisted from Endangered to Threatened. The American Crocodile has a very restricted distribution in Florida and, although it may expand its distribution with climate change, right now it is climate limited to the southern tip of Florida. Within



Digging for fossorial reptiles in the dunes at Port Nolloth, Northern Cape, South Africa.

the area where it occurs, though, it has undergone substantial recovery from the low point in the 1970s.

During your tenure with the Florida Fish and Wildlife Commission, what are some programs you enjoyed the most?

Basically everything. Certainly, I loved every minute spent working with crocodiles. Also, the Pine Barrens Treefrog work in West Florida, which led tangentially to work with a number of other amphibian species. Over the last dozen years or so, I've been doing a lot of work with crayfish. Florida has roughly 60 species of crayfish, including 15 cave species. It has been a lot of fun locating all of the crayfish, some of which had not been recorded since they were described in 1940. Working with Jesse Breinholt, we completed a genetic assessment of all of the Florida species, we now have a body of information on the current status and distributions of Florida's crayfishes.

I've always operated under the principle that if you can't find what you're looking for, you should look for what you're finding. I've recently been working with some endemic invertebrates that I found initially while surveying for Florida Sand Skinks.

What do you feel are some of the biggest challenges you have faced throughout your career working in herpetological conservation?

At the micro scale, bureaucratic inertia and minutiae. Sometimes I've felt that my mission was to get the job done in spite of the bureaucratic impediments under which we operate. But more importantly, at the macro scale, it is the unrelenting growth in the human population and the loss of natural habitats. That's not a new story, of course. Thomas Barbour in 1944 wrote *That Vanishing Eden: A Naturalist's Florida*, in which he wrote of the ongoing degradation of Florida's environment.

What keeps you optimistic about herpetological conservation?

I'll have to think about that a little bit. Maybe I'm not. I think that I was fortunate to come along at a time when Florida still afforded extensive natural areas to explore. Such areas still exist, especially in northern Florida, although they are becoming fewer in number and more difficult to access.

As I said, I grew up in Georgia, in the creek and in the woods. Once I became free range about the age of about 9, I spent a lot of time just enjoying the outdoors without a lot of modern distractions. I was almost 7 before we got our first television.

I am concerned that kids growing up today are increasingly isolated from nature. For many, video games and smart phones have replaced time outdoors. It seems unlikely that they later will miraculously morph into advocates for natural system conservation.

Do you feel there is an opportunity to connect younger generations with the environment through this technology?

Certainly, there are resources online that people can go to for information. But as long as they are more absorbed with playing games or cruising social media, I don't see much future there. When computers first came along, we were told how much they were going to help us and how much they would free up time for leisure. But they have left us with far less time rather than more. They certainly have enabled us to do a lot of things we couldn't have dreamed of doing 15–20 years ago, in terms of resource conservation.

Is there a piece of advice you'd like to give students of herpetology? Give us your thoughts and insights on Florida biodiversity, where are we headed?

To students, I would say pay considerable attention to writing. Develop your writing skills. Communication is critical and if you can't write and speak effectively, it will be much more difficult for you to convey your message.

I will wander off into pessimism a bit, though I'm not basically pessimistic by nature. In the mid 1970s, Walter Auffenberg and Richard Franz predicted that by the year 2000 the only lands on which Gopher Tortoises would be left in Florida were public lands. They were wrong, not about the future but about the timing. We're not there yet.

I recently spent a few days in central Florida and was dismayed at the extent of loss of habitat there. The expansion of residential and commercial development from Orlando to Tampa has largely eliminated the xeric upland habitats on which much of Florida's unique, endemic fauna depends. I've been working with some scrub invertebrates, but in large areas it is now near impossible to find sites to sample. There are certainly good examples of those habitats left to the north, especially in Ocala National Forest, and then scattered sites farther south along the Lake Wales Ridge. But it's hard to be too optimistic about the future when you see how rapidly those habitats are being lost.