



**United States of America  
Department of the Interior  
Fish and Wildlife Service  
Endangered Species Program**

Telephonic Interview Time (11:49)

Topic: Indiana bat (Host – Dave Harrelson with Lori Pruitt)

This transcript was produced from audio provided by USFWS Endangered Species Program

BEGIN INTERVIEW

(Music plays.)

Dave Harrelson: Good morning everybody. Today I'm on the phone with Lori Pruitt, Endangered Species Coordinator for the Indiana Field Office. Lori how are you this morning?

Lori Pruitt: I'm good. How are you?

Dave Harrelson: Oh, doing really well. Lori you are very much involved with recovery of the Indiana bat. Can you tell us about that species and maybe start with the idea of why is it called the Indiana bat?

Lori Pruitt: Right. Well it's called the Indiana bat because the first specimen that was recognized as a unique species, so something that was different from other species of bats, was collected here in Indiana in Wyandotte Cave. Actually the bat is found in a lot of states. It's found in 22 states throughout the eastern United States and it's one of our most widely distributed federally endangered species.

The scientific name of the bat is *Myotis sodalis* and that's also significant because "sodalist" means "companion" and that's a good name for the Indiana bat because it is a species almost always found with its companions, or with other Indiana bats. It's very social and both in the summer and winter is found in colonies. And in fact in winter Indiana bats can hibernate at densities up to 500 bats per square foot on a cave ceiling which is certainly one of the highest densities of mammals anywhere on earth.

Dave Harrelson: Wow. Indiana bats been listed from the very beginning of the Endangered Species Act all the way back to 1967 and today the population has diminished by roughly half of what it was then. What are the threats that are causing this to happen?

Lori Pruitt: Right. Well the current estimate of the population of the Indiana bat is about 530,000 and as you said that's roughly half of what we thought it was at the time of listing. And you know that sounds like a lot of bats, that sounds like a lot for an endangered species but I think to understand that number we need to put it in a historical context. There were once millions and possibly even tens of millions of Indiana bats. And some experts actually

conjecture that it was one of the most abundant mammals on earth. And while there's no way now to document what exactly those historic numbers were, we know that it was once much more abundant, possibly orders of magnitude more abundant than it is now.

So what happened prior to listing it as a species that caused this huge decline? Well one thing was modification of the caves where the Indiana bats hibernate. Indiana bats need caves that are just the right temperature and the temperature needs to be pretty stable. And there's not very many caves that meet the requirements for this bat. And in the mid to late 1800s one thing that happened was that commercialization of caves for tourists became popular. Cave exploration and cave tours became popular.

So alterations were made to caves to accommodate tourism. For example doors were put on caves to control human access. And one of the consequences of that is that in many cases these structural modifications to the caves led to changes in the temperature in the cave because airflow was changed. And the case became either less suitable or in some cases no longer suitable at all for Indiana bats.

At the same time another threat that was ongoing, in part because of this visitation of the caves, was direct disturbance of hibernating Indiana bats. And why is that important? Well it's important because Indiana bats have to survive the entire winter without access to food. They are insect eating bats. There's no insects available during the winter so the bats have to survive the entire winter on stored fat reserves. And they have a mechanism for doing that. They do that through hibernation.

And during hibernation the body temperature and the metabolism of the bats are greatly reduced and by doing that they are able to reduce their energy needs and survive on stored fat. But if the bats are disturbed during the winter, for example by people visiting the cave, this disturbance can cause the bats to arouse from hibernation and they burn more energy reserves because their body temperature and their metabolism have to come back up. And if that happens too many times during hibernation the bats simply run out of fat and starve to death.

So both of those things were ongoing. We made a lot of progress in addressing those threats, both the destruction of caves and the disturbance of hibernating that, but we haven't eliminated those threats. So those are ongoing.

Managing threats to the summer habitat is also very important. Female Indiana bats return every summer to the same forested area where they form maternity colonies under tree bark, usually very large dead trees. So they need a mature forest component to do that. Each female bears only one pup per year so it's really important that we conserve these traditional maternity areas so we know the bats will have a place to come back to every spring.

Currently the biggest threat to Indiana bats is white-nose syndrome. White-nose syndrome is a disease of bats that was first observed in New York in 2006, so not been around very long. But in that short period of time it's killed an estimated 5 to 7 million cave hibernating bats including approximately 50,000 Indiana bats and it's spreading very quickly.

The population of Indiana bats in New York has decreased almost 70 percent since the onset of white-nose syndrome. It's now found throughout the range of the Indiana bat

and while we have not yet had these catastrophic declines in our very large populations in the Midwest, we think that may just be a reflection of the fact that the disease has not been here as long so we're very concerned about that threat.

And wind energy development is also a relatively new threat to the Indiana bat. Unfortunately an unforeseen by-product of wind energy development is that large number of bats are killed by turbine blades, they are actually struck by the blades. And that is a threat to Indiana bats as well as to other bat species.

Dave Harrelson

You kind of got onto the limited winter habitat. So let me just ask you this then. Lori what's being done to help secure the caves that the Indiana bat hibernates in during the winter and who are our partners in these efforts?

Lori Pruitt:

Right. Well as we already mentioned Indiana bats are very widely distributed so we need to work with a lot of partners in the conservation of this species. If you take the caves for example, the major caves where Indiana bats hibernate are about 20 percent federally owned, 25 percent state owned and the rest, 55 percent are owned by private landowners. So we have to work with all those - federal, state and private partners to conserve this species.

One of the things we do at sites where human disturbance, for example during winter hibernation, is a threat to the bats is we work with the landowner to install bat friendly gates at the site. And what's a bat friendly gate? Well just very simply that means a gate that's carefully designed to not change the airflow of the cave.

Again you know we already discussed the fact that if you put something that changes airflow on the cave that can be bad for the bats because it change the temperature. And of course the bats have to be able to freely fly in and out of the cave. It can't impede their movement. But if you can design a gate and get a gate that meets those requirements it can be very effective at keeping people out of these sites during winter which is critical for the bat.

Dave Harrelson

What's next in the effort to stabilize and recover this species? And what are the priorities and how can people help?

Lori Pruitt:

Well basically we need to one, continue to do the things we have been doing. We need to continue to protect these caves where the bats hibernate from alteration and disturbance and we need to manage and conserve summer habitat for the species. We also need to work on these new threats, especially white-nose syndrome. It's encouraging that there is now a national plan to address white-nose syndrome and there is a very broad coalition of partners working on this issue so that's encouraging but there's still much to be done in terms of learning about that disease and how to manage it.

We are also working on understanding why bats are being killed at wind turbines and managing that threat. We now have strategies that we know are effective at reducing bat fatalities at wind turbines and we are working with wind industry to try to get those strategies implemented.

And last but not least one of the things I want to mention, and one of the reasons I'm glad I had the chance to talk with you today, is that one of the keys to recovering the species is outreach and education. Bats are very misunderstood and it's important that we counter

misunderstandings about bats and help people to appreciate how fascinating bats are and how important they are to ecosystem health. For example a recent paper estimated that the value of bats to agriculture in the continental US is about \$20.00 billion every year. So bats play a very important role in controlling insect populations.

I think we've made great progress in these outreach efforts. One example that's currently ongoing is that the Fish and Wildlife Service produces a daily Bat Fact. We have about 400 email subscribers that get a Bat Fact delivered to their inbox every morning and they are learning more about bats every day.

Another example is that we now have a park, Sydallas Nature Park which is run by a county park system here in the state of Indiana, that is the first part that's dedicated specifically to not only conserving Indiana bat but to educating the public about Indiana bats and bats in general.

Through these efforts we have learned that a lot of people care about bats and want to learn more about bats. And that certainly gives us a lot of hope for the recovery of this species because we know that the more friends the Indiana bat has the more support there's going to be for efforts to conserve this species.

Dave Harrelson

Well Lori that's amazing. Now you mention Bat Facts. Could you just touch a little bit more on what that is and how people can subscribe to it?

Lori Pruitt:

Right. If you go to the Midwest Fish and Wildlife Service homepage, if you go to the National Service homepage and then go to regions and select the Midwest it will actually come right up on the left-hand side of the screen. I'll do it as I'm talking here to make sure that what I, and if you look on the left-hand side of the screen of the Midwest region's home page, which is just [www.fws.gov/midwest](http://www.fws.gov/midwest) you'll see a box that says Daily Bat Facts. And it shows today's Bat Fact and then if you click on the box it says, "See more Bat Facts." It will give you more facts and then there's another link to subscribe by email and you just click that link and you can get the Daily Bat Fact.

Dave Harrelson

Well Lori it's been wonderful to talk to you and I thank you so much for taking time to join us and share your thoughts and knowledge about the Indiana bat with the public. Thank you very much.

Lori Pruitt:

Thank you Dave. It was a pleasure.

(End of interview)

**Duration: 11:49 minutes**