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TELEPHONIC INTERVIEW TIME (6:48)

**WORLD'S FIRST CAPTIVE HELLBENDER BREEDING (HOST – SARAH LEON
WITH JEFF ETTLING)**

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

P R O C E E D I N G S

(Music plays.)

MS. LEON: The Saint Louis Zoo's Ron Goellner Center for Hellbender Conservation and the Missouri Department of Conservation announced last November that Ozark hellbenders have been successfully bred in captivity—a first for this federally endangered species. This decade-long collaboration has now yielded 165 baby hellbenders.

This is Sarah Leon for the U.S. Fish and Wildlife Service, and today we have the Zoo's curator for herpetology and aquatics, Jeff Ettlign, on the phone to tell us more about this exciting news.

Jeff, I understand the Ozark hellbender has been an ongoing interest to the Saint Louis Zoo for quite some time. Why is this?

MR. ETTLING: This is a very unique species of salamander—it's the largest one in North America and it's been around for about six million years. Missouri has the distinction of being the only place in the United States where both the Ozark hellbender and the eastern hellbender occur, so it's a big part of our natural heritage here in the state. I would say that for the past 30 years there has been an interest from the Zoo in hellbenders, but that didn't really geared up about 10 years ago in a big way when we started building facilities in the off-exhibit area of the Herpetarium and dedicating staff time to unlock what it would take to get these guys to breed. We're trying to preserve

as much of our natural heritage—whether it's here in Missouri, or anywhere in the U.S. or the world—is a very important thing. Conserving species for the future is a vital role that we here at the Zoo feel we can play.

MS. LEON: Tell us about the Ron Goellner Center for Hellbender Conservation, will you?

MR. ETTLING: The Ron Goellner Center for Hellbender Conservation was named in memory of our late general curator and former curator for herpetology, Ron Goellner, who was kind of the big impetus for this project. He had a life-long interest in hellbenders.

It's one of the 12 centers under the Saint Louis Zoo's WildCare Institute, which is our conservation branch of the Zoo. This particular center is dedicated to conservation of hellbenders, with a major emphasis on Ozark hellbenders.

MS. LEON: So what all goes into a successful captive breeding program?

MR. ETTLING: Well, there are a lot of different elements that come into play, as we've discovered over the years with trying to reproduce other species of amphibians and reptiles. Being able to mimic the conditions that they experience in the wild is really key. On top of that, just having adequate space so that the animals can set up their own little home ranges has been critical to us being able to finally captive produce this subspecies.

MS. LEON: What are some of the biggest challenges to successfully breeding and rearing the Ozark hellbender in captivity?

MR. ETTLING: I would say that the biggest factor has been water quality. We know that amphibians, in general, do not tolerate chlorinated water. Obviously the water that we are bringing in from the city has chlorine and chloramines and all kinds of other chemicals that are added to it, so we've been modifying that to get it more in line with what river water would be like.

Over the past five years we've been able to finally get females to lay eggs, but we noted that the sperm from the males seemed to be deformed. We thought maybe we were just dealing with animals that had just come in from the wild that have problems that we won't be able to correct. Every year that we were getting eggs and we were thinking that we were getting closer and closer to producing the species, we would step back and evaluate what we had done over the previous year, and one of our keeper staff had been looking into the literature with regard to aquaculture—particularly fish. Since fish have a similar reproductive strategy, where it is external fertilization just like it is in hellbenders, she discovered that sperm in fish is activated by the water and that has to do with the ion concentration in the water. This got us thinking that we needed to look at the ion concentration in city water versus that in river water, and when we did that we discovered that there is a big discrepancy between the two. We've corrected that by

using reverse osmosis filtration, which allows us to basically reconstitute the water to our parameters so we can now mimic river water pretty closely.

This year, we're seeing better sperm quality and motility in our males—the best we've ever seen. In fact, some of the males that have been in captivity with us for 6 plus years had 90 percent motility. And for us, the big news was the fact that the male that bred with these two females was an animal that had been cycled indoors for two years.

MS. LEON: What does the future hold for these baby hellbenders?

MR. ETTLING: We haven't decided how long they will stay here at the Zoo before they go back out to the wild. We're going to be meeting with our Ozark hellbender working group—which is made up of individuals from the Missouri Department of Conservation, the U.S. Fish and Wildlife Service, and a number of universities here in Missouri and Arkansas—to come up with a strategy of how long we think these animals will need to be held in captivity. I think having animals that are six to eight years of age seems to be ideal because you get them past a lot of the hurdles that they would have to get through early in life like predation. Also, being at that age, they're also sexually mature. We figure if we can get them out there at that stage, then we can give them a fighting chance to make it. At this point, it looks like these little guys might be with us for up to six years, maybe a little more.

MS. LEON: What's next for the Zoo?

MR. ETTLING: Well, we're actually very excited about the fact that we've finally been able to get the Ozark hellbender to breed in captivity. Right now we are looking at expanding our holding space. We are just now finishing a second room that is strictly for raising young hellbenders, and we'll probably expand that a little more because we have populations from three different drainages where the Ozark hellbender occurs and we are hoping to breed all three of those drainages so we can actually put animals back out from where they came from. So right now it's build up holding space to be raising probably thousands of baby hellbenders for a long time into the future. We really don't see what the end date is going to be for this part of the project because we still have to work on correcting a lot of issues out in the wild there as well. It's a long-term investment by us and our collaborators.

MS. LEON: Well thank you again, Jeff, for all that you're doing for this endangered animal. We really appreciate it here at the Fish and Wildlife Service.

MR. ETTLING: Well thank you. It's a great pleasure for us to be partners with the Fish and Wildlife Service, the Missouri Department of Conservation and all of the other members of the Ozark hellbender working group. We look forward to future collaborations.

MS. LEON: For the U.S. Fish and Wildlife Service, this is Sarah Leon. Thanks for listening.