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School of Natural Resources graduate student Amy Williams examines a piece of otter scat along the Platte River.

# Researchers hope poop project gets to bottom of river otter questions

By Lori McGinnis  
IANR News Service

UNL researchers are using a novel approach to get the poop on one of the state's most elusive species.

They want to know more about river otters, threatened nocturnal mammals that live along Nebraska's river basins. Because the animals are so difficult to trap and study, researchers in the School of Natural Resources as well as the Nebraska Game and Parks Commission have turned to an alternate means of study — collecting their scat.

"This technology has never been applied with river otters in Nebraska and it could be a very powerful tool to aid in the learning of rare species," said Craig Allen,

leader of the Nebraska Cooperative Fish and Wildlife Research Unit within the School of Natural Resources and primary investigator on the project.



Allen

Fourteen people climbed aboard 11 kayaks and canoes on the Platte River near Alda and Wood River in late September and early October near Gibbon to look for otter poop, knowing that the animals "use communal latrines" and leave droppings containing fish scales at outcroppings and the points of a sandbar.

"We found nearly 300 poop piles," Allen said.

Each pile was individually bagged and will be sent to an out-of-state laboratory for analysis. Allen hopes for results next spring.

For nearly four years Allen has been leading the effort to learn more about the otters, such as their numbers, where they live, how they use their habitat and survival rates. They started the project by setting traps, but that has only resulted in the capture of 18, which were surgically implanted with radio transmitters and released.

This method is useful for tracking otters but is not useful for estimating the size of the population, he said. Other problems with this method are that too few otters can be tracked, the range of the transmitters is only about one-fourth mile, and the transmitter batteries burn out in about 600 days. Of the 18 otters surgically implanted, only six have transmitters that still can be tracked.

Sam Wilson of Wayne, one of Allen's graduate students who is writing his master's thesis about the river otters, came up with the idea to collect droppings. As program manager



(From left) Scott Taylor and Ashley Pella, both of the Nebraska Game and Parks Commission, and Amy Williams, graduate student in the School of Natural Resources, canoe down the Platte River in search of otter droppings.

for the Nebraska Game and Parks' non-game mammal and fur-bearing program, Wilson had collected the scat of mountain lions in the Pine Ridge region in northwestern Nebraska for DNA analysis.

Collecting the droppings is effective because each animal has its own genetic imprint in its scat, allowing researchers to determine how many otters put down those nearly 300 piles.

"You can get a lot of information" from the poop," Wilson said. "You can determine the lineage of the animal. It can tell you if one is related to another one found 10 miles away."

Game and Parks will use the information gathered to develop a management plan for the river otters to ensure their population is secure, Wilson said.

Amy Williams of suburban Seattle, another of Allen's graduate students, is working with the data collected from the project. Williams has worked with otters while volunteering at the Seattle Aquarium and says her passion is conservation of threatened or endangered species.

"Otters are very charismatic and playful but when you get them in a trap they're vicious," she said. "They have no native predators other than humans because nothing wants to mess with them."

Williams has been studying the movements of the otters since 2008, living her first six months in Nebraska in a field house near Wood River. The DNA collected through

the droppings, she said, will help determine population estimates and ultimately result in more informed management decisions for the species.

The interest in the otters rests in the fact that they became extinct in the early 1900s in Nebraska due to fur trappers and other unknown reasons. Game and Parks reintroduced 159 otters in 1986 in six of the state's 13 major water basins, yet they remain a state-threatened species.

Wildlife researchers want to know how well the otters have been able to repopulate themselves, but the reclusive nature of the animals has made that hard to determine, Allen said.

Researchers have studied paths made in the snow by the otters and carcasses from road kills and accidental trappings have been analyzed, but those means don't indicate how many exist.

"We're left in a situation where we know there are otters but have no idea how many there are and no management plan for them," Allen said. "We know little about them except that they're out there."

The research team planned to attempt to trap more otters near Gibbon and scheduled another collection of scat in October. If successful, the poop project can be used for other rare species, he said.

"This is cutting-edge technology that is very much in its infancy stage," Allen said.