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PHOTOS BY JEFF WILLHELM - jwillhelm@charlotteobserver.com

Davidson College student Leigh Anne Harden searches for her mud turtle subjects in the woods at Mallard Head Golf Course in Mooresville.

TURTLE TRACKING

College student trying to find out if local golf course is a suitable habitat

BY KATHRYN THIER
kthier@charlotteobserver.com

When Leigh Anne Harden visits the Mallard Head Golf Course, she carries a radio antenna instead of a golf club.

The Davidson College senior is tracking Eastern mud turtles using radio transmitters and temperature dataloggers attached to their shells for a groundbreaking study on whether golf courses are a suitable habitat for the animals.

"It hasn't been done before with

mud turtles in the world," said professor Mike Dorcas, who runs the college's herpetology laboratory and is supervising the study.

The early results indicate that the mud turtles, which summer in farm ponds and winter in wetlands in the wild, are finding good habitats at the Mooresville golf course off Brawley School Road.

That builds on several years of research nationally showing that some species, particularly certain birds and insects, can thrive on the

alternating habitats golf courses provide, such as fields, meadows and woodlands, said Craig Tufts, the National Wildlife Federation's chief naturalist.

Long criticized by environmentalists and naturalists for the amount of chemicals used to keep grass green, golf courses are now often viewed as "islands of refuge for animals who can't survive ... in a Wal-Mart parking lot," Dorcas said.



Leigh Anne Harden gently checks on the transmitter attached to the carapace of a mud turtle.

Taking a swing at a potential habitat

Turtles *from IN*

For rapidly urbanizing areas, golf courses provide valuable open space, say naturalists.

"In the case of losing 40 acres a day (to development), which this region does, in essence a golf course has that land locked up," said Tim Gestwicki, deputy director of the N.C. Wildlife Federation.

Some golf courses take particular care to encourage wildlife preservation. The Mooresville Golf Course, the town's public course off U.S. 21, is one of eight wildlife habitats certified by the National Wildlife Federation.

Mallard Head hasn't taken any steps to protect wildlife, but intends to consider any recommendations arising from Harden's study.

"For our staff and for the golfers and homeowners, it's kind of

Eastern Mud Turtles

Adult size ranges from 3 to 5 inches. The shell is usually smooth and dark brown or olive. It's semi-aquatic, spending more time on land than other turtles. Prefers shallow waterways and temporary wetlands. Feeds on water organisms and probably aquatic plants. Found as far north as Long Island, N.Y., as far south as Florida and around the Gulf coast as far as Texas.

Source: www.herpsofnc.org.

nice to see science going on out here," said the course's general manager, Eddie Campbell.

Although the study won't finish until the turtles return to the course's ponds in the summer, so far it appears that the turtles

prefer to winter in forested, thorny areas of the course, instead of the fairways, said Harden.

"The importance of upland habitat is not known by a lot of people," she said.

She plans to suggest that golf courses leave undisturbed as much forested areas as possible and connect forested areas when possible.

What makes Harden's study so important is that she'll get extremely precise information about the turtles' movements in diverse habitats at the course from the temperature dataloggers.

Compared to the radio tracking, which she does one to three times a week, the temperature dataloggers record the temperature of the turtles and their environment every 30 minutes.



Harden

Because turtles are cold-blooded, their temperatures fluctuate with their environment. That makes it easy to graph the temperature data and determine their movements.

Already she's found that the turtles prefer to bury themselves in different parts of the course's forested areas, from a thorny site 2,600 feet from the pond to a pile of wood chips on a green within sight of the pond.

That knowledge will give scientists insight into the biology of mud turtles and how best to help preserve their habitat, Dorcas said.

Harden, who plans to conduct marine biology research after graduation, said conducting the turtle study changed her college experience.

"If I hadn't become involved, I wouldn't have had anything to call my own," she said.

Kathryn Thier: 704-987-3670, ext. 16
