

CHANGING PLANET



Golf Courses Can Be Wildlife Havens, Researchers Say

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[David Maxwell Braun](#)



Photo by James L. Amos/NGS

The United States is one of the great golfing nations of the world.

But the many thousands of golf courses that dot the urban landscape are not without their critics. Environmentalists have decried the amount of water sometimes required to keep fairways and greens lush, especially in places that are naturally arid.

In other instances perfectly good natural hazards such as wetlands or beach dunes are bulldozed and supplanted with an artificial landscape.

There has also been criticism of the amount of pesticides and fertilizer, required to keep golf courses verdant, that winds up in the nation's waterways and oceans.

But can golf courses offer havens for wildlife being squeezed out of urban areas?

“With more than 2.2 million acres of green space on U.S. golf courses, there is great potential for golf courses to serve as sanctuaries for many wildlife species,” says Mark Mackey, a graduate student of the [University of Missouri](#) who is studying this issue. “Managing landscapes for human use and the preservation of biodiversity will create a win-win situation for stakeholders and wildlife.”



Adult Black-bellied salamander (*Desmognathus quadramaculatus*). This is one of the largest salamanders to inhabit headwater streams in the southern Appalachian Mountains. Adults can reach 8 inches in total length and take 5-7 years to reach reproductive maturity.

Photo by Bill Peterman/Courtesy MU

Mackey made the remarks in a news statement about an MU study about the health and abundance of salamander populations on ten golf courses in North Carolina.

“Salamanders play a major role in the overall food chain; by studying salamanders, researchers can gain additional information about other habitats in the area,” the university statement explains.

“There are more than 17,000 golf courses in the United States, and approximately 70 percent of that land is not used for playing,” says Ray Semlitsch, Curators’ Professor of Biology in the [MU College of Arts and Science](#), who also advises golf courses about wildlife habitat management.



"These managed green spaces aren't surrogates for protected land and ecosystems, but they can include suitable habitat for species native to the area, including salamanders. Golf courses could act as nature sanctuaries if managed properly," Semlitsch said.

Larval Blue Ridge two-lined salamander (*Eurycea wilderae*). Larvae inhabit headwater streams in the southern Appalachian Mountains.

Photo by Bill Peterman/Courtesy MU

Semlitsch and Mackey are measuring stream salamanders' abundance and diversity in order to make biologically relevant management suggestions for golf course superintendents. The researchers are hoping to balance human recreation with the protection of wildlife.



By comparing the abundance and diversity of salamanders in golf course

habitats, the team will be able to assess the adequacy of current course management. In addition, Semlitsch and Mackey will make recommendations for the [U.S. Golf Association](#), which can be used to manage golf courses throughout the nation.

Adult Blue Ridge two-lined salamander (*Eurycea wilderae*). This is one of the smallest salamanders to inhabit headwater streams in the southern Appalachian Mountains. Adults venture up to 100 yards from streams into the riparian forest.

Photo by Bill Peterman/Courtesy MU



Previously, Semlitsch outlined recommendations to improve golf course

habitats for amphibian populations in a paper published in [USGA Turfgrass and Environmental Research Online](#) and in the science journal [Conservation Biology](#).

His recommendations included buffering aquatic habitats from chemical runoff, surrounding wetland areas with 150 to 300 yards of forest or natural grassland, establishing ribbons of forest to connect larger patches of forest, and creating a diversity of pond types that mimic natural wetlands.

But the new paradigm for golf courses, Semlitsch says, is to leave natural features in places. “These become natural hazards for golf courses,” he says.

The research is supported by the United States Golf Association and the [National Fish and Wildlife Foundation](#).

Photo by James L. Amos/NGS



MEET THE AUTHOR

Forty years in U.S., UK, and South African media gives David Braun global perspective and experience across multiple storytelling platforms. His coverage of science, nature, politics, and technology has been published/broadcast by the BBC, CNN, NPR, AP, UPI, National Geographic, TechWeb, De Telegraaf, Travel World, and Argus South African Newspapers. He has published two books and won several journalism awards. He has 120,000 followers on social media. David Braun edits the National Geographic Society blog, hosting a

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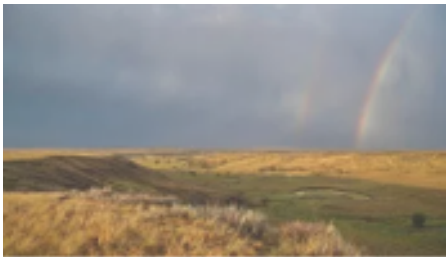
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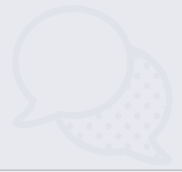
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