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An effort to remove Butler's Garter Snake (*Thamnophis butleri*) from the Wisconsin list of threatened wildlife has been thwarted for the moment.

The Little Snake That Could: Butler's Garter Snake in Wisconsin

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Photographs by Gary S. Casper except where noted.

After a contentious battle, a little garter snake has defeated opposition to its protection in Wisconsin — for the time being. The Butler's Garter Snake (*Thamnophis butleri*) was listed as a Threatened Species in 1997, based on an extremely limited range in the state, and rapid and ongoing habitat loss within that limited range. The snake lives in remnants of wetlands and grasslands (mesic prairies, marshes, roadside grassy areas, and vacant city lots) in the Milwaukee area, where it is isolated from other members of its species, the closest of which are in Michigan and Indiana.

These medium-sized snakes (total length = 38–51 cm) have a shorter, narrower head, a generally thicker body, and less of a constriction behind the head than other Wisconsin garter snakes. Dorsal ground color is brown, black, or olive with or without a double row of black spots between the stripes. Distinct lateral stripes are on scale row three and adjacent rows two and four anteriorly and most of scale rows two and three posteriorly. Stripes vary from light yellow to a rich orange-yellow color. The venter is green to yellow-green with dark spots along the lateral edges.

The principal food is earthworms, but leeches are sometimes eaten as well. In captivity, they may consume fish or frogs. In Wisconsin, they are active from mid-March through early November, and hibernate in underground retreats, especially



Butler's Garter Snakes are sometimes killed in urban areas; this one along a trap line in a suburban neighborhood study site in north-central Milwaukee County appears to have had its head stomped. Usually this behavior is displayed by young boys, and is not likely to have significant impact on snake populations, although, in one instance, such indiscriminate killing persuaded a concerned citizen to capture approximately 300 Butler's Garter Snakes and move them "to a safe place" approximately 30 miles away. Such translocations probably result in the demise of the transported individuals, but also may be responsible for unnatural gene flow between populations or even species or the establishment of new colonies outside the natural range.



A female Butler's Garter Snake slithers across an access road at a central Ozaukee County research site. Co-occurring species at this site were Eastern Garter Snakes (*Thamnophis sirtalis sirtalis*) and Eastern Milksnakes (*Lampropeltis triangulum triangulum*).

crayfish burrows. Males mature in their second spring, females in their third. Mating occurs mostly from late March to late April. In Wisconsin, an average of nine young are born between July and mid-September.

Many of the populations of this species have been isolated from each other due to wetland loss and habitat fragmentation. These snakes already have a limited range, so habitat destruction is especially detrimental to them. Another concern is genetic swamping by the Plains Garter Snake (*T. radix*); this closely related species moves into the range of *T. butleri* and breeds with them. Only a handful of populations still exhibit only the characteristics of *T. butleri*, and most of those populations occur in Milwaukee County, the most urbanized county in the state.

Politics and Garter Snakes

On 18 July 2006, a majority Republican faction within the Wisconsin Legislature's Joint Committee for Review of Administrative Rules (JCRAR) voted along party lines to remove

the species from the state's list of threatened wildlife, a move which ignored all available science and which was at odds with recommendations from the state's own Department of Natural Resources (WDNR). Whereas no official reasons were given for this move, opinions expressed were that the snake was impeding economic development, cost too much to protect, and supporters of de-listing did not believe the species was actually threatened. However, no economic analyses were presented to support the first of these contentions, no evidence that the species was secure to support the second, and no evidence or scientific opinion that would refute the findings that had led to the 1997 listing to support the third. The JCRAR attached conditions to their ruling, specifying that the species would be removed from the Threatened Species list on 1 October 2006, unless:

- a. The Department of Natural Resources (DNR) lowers its determination of the number of sites necessary to maintain the viability of the Butler's Garter Snake.
- b. DNR formulates a plan to mitigate further the amount of land affected by the conservation needs associated with the Butler's Garter Snake.
- c. DNR specifies parameters for the orderly delisting of the Butler's Garter Snake from the state's threatened species list.

The hearing was highly contentious. Peter McKeever, reporting for the Milwaukee County Conservation Coalition, noted: "To be generous, the science was ignored and ridiculed. It was an astounding and extraordinary demonstration of ignorance, arrogance, partisanship, bias, and lack of concern for the environment. It is shameful that the question of whether to de-list a species has become a partisan issue. The seven-hour hearing was largely a staged performance designed to satisfy a select group of political supporters. The politics were blatant: the committee clerk was observed exchanging hand signals with the lobbyist for the builders during the debate on the motion under consideration, à la Nero giving the thumbs up or thumbs down to gladiators in the lion pit."

On 27 September 2006, the JCRAR again took up the proposed de-listing. Again along strict party lines, the JCRAR approved a motion to rescind its earlier motion, and to make the rule suspension (i.e., de-listing) effective on 30 November 2006, unless the DNR "... updates its conservation strategy so that its policy relating to the Butler's Garter Snake is less burdensome on the private property owner."

The vote followed some compromises from DNR on the timing and cost of reviews and surveys, and a promise to reduce the amount of protected area for the species. However, no guid-



Crayfish burrows are heavily utilized by Butler's Garter Snakes as underground retreats. These, in northeastern Waukesha County, probably are occupied by either Devil Crayfish (*Cambarus diogenes*) or Prairie Crayfish (*Procambarus gracilis*), the two most common burrowing species in southeastern Wisconsin. The burrows descend to the water table, and offer snakes hibernating retreats in winter and drought refugia in summer. Butler's Garter Snakes appear to be especially abundant in areas of high crayfish burrow density.



Labial scales (those forming the “lips”) of Butler’s Garter Snakes typically have little or no black edging, as shown in this individual.



High quality habitat is typified by this floodplain habitat along Poplar Creek in northeastern Waukesha County. Diverse grasses afford patchy sun penetration to ground level, so that snakes may cryptically bask partially hidden in clumped grasses, where they are less obvious to avian predators. The diverse wet meadows and grassland also provide variance in root densities, making it easier for burrowing crayfish to find places to dig. In contrast, thick monotypic stands of invasive plant species, such as Reed Canary Grass (*Phalaris arundinacea*), form tall (2 m) stands of uniform stem and root density, which do not provide basking opportunities for snakes and make digging very difficult for crayfish. The scrape in the center of the photo is periodically inundated during floods and spring snowmelt, and is riddled with crayfish burrows.



A Butler's Garter Snake-occupied development site in New Berlin, Wisconsin, where snakes were removed from the construction footprint. A former peat bog, adjacent habitat is being restored and managed for Butler's Garter Snakes as part of the development agreement.

ance was forthcoming from the JCRAR as to what might be accepted as “less burdensome,” nor why this vague requirement should trump biological issues in maintaining the species as viable in Wisconsin. Members of the minority made efforts to find a compromise, and all were rejected on party line votes. In reference to the idea of basing species protections on “burden” instead of science, minority member Rep. Spencer Black opined: “We can change the laws of the State of Wisconsin, but we cannot change the laws of nature.”

Representatives of the DNR consistently defended the principle, which is also the law, that the only basis for de-listing a species is sound science that shows that it is no longer threatened. A strong majority of the public, including the Wisconsin Wildlife Federation, came out against the de-listing. Many expressed worry that de-listing without any regard for the science would set a dangerous precedent for endangered species recovery efforts, and would jeopardize Wisconsin's eligibility for federal wildlife funding. Even the Milwaukee Metropolitan Builders Association, a hitherto strong critic of protecting the snake (which affects many of their members' building projects), at this time opposed the de-listing, and supported the DNR position to revise its conservation strategy — perhaps recognizing that the loss of state protection and the consequent further decline of snakes might lead to even stricter state or federal regulations in the future. In the face of this overwhelming support for the snake and the Endangered Species Law, the JCRAR

majority still voted to de-list. The postponement of the de-listing date was widely viewed as politically motivated, with several Republican members up for re-election on 4 November.



At this development site in South Milwaukee, snakes were confined to a wetland while most of the upland habitat was developed. Here, heavy rains have raised water levels beyond the limits of the snake fencing. Under the existing regulations, the state has the authority to allow sites of less than 20 acres of suitable existing Butler's Garter Snake habitat to be completely developed, with only voluntary snake conservation measures. These smaller sites are considered to be less important to the species' long-term conservation and survival.

Finally, on 28 November 2006, the JCRAR reconvened and voted 7–2 to not remove the snake from the protected list. What changed? The Republicans lost their majority in the state Senate in the 4 November election, and therefore their majority and co-chairmanship of the JCRAR. Any de-listing presumably would have been swiftly reversed when the new Senate convened in 2007.



Butler's Garter Snakes are still found in vacant lots in industrial and commercial areas. In this approximately 9-acre site in west-central Milwaukee County, 64 Butler's Garter Snakes were trapped in two days in early October.



To avoid and minimize "take" (a legal term meaning killing individual snakes), construction projects may use silt fencing to prevent snakes from moving into work areas. The fences must be placed between the upland and wetland portions of the habitat, while snakes are hibernating in the wetlands. When snakes emerge in the spring, they are prevented from dispersing into the upland habitat being developed. In this photo, a snake exclusion fence is in the foreground, a snake survey fence in the center, and another exclusion fence in the background, beyond which a new storm water retention pond has been graded and seeded. The storm water facility is designed as a "dry pond," which will have standing water only for brief periods and be naturally vegetated. It therefore will continue to provide snake habitat after construction. Currently a "no-net-loss" of snake habitat policy is in place, so many development projects may proceed by altering and then restoring snake habitat in this manner.



A typical adult Butler's Garter Snake from Pewaukee, Wisconsin.

Many landowners are hostile toward both the snake and those who work with it, whereas others place high value on its conservation, especially parents whose children routinely play with this harmless urban species. Some of the stories are comical, and illustrate some of the human tensions involved with achieving conservation in areas where land values are high. A herpetologist I know was retained to perform snake surveys by a private couple wanting to develop their property. The consultant set up his survey traps and the landowners, distrustful of all scientists, followed the consultant and his assistant each day, watching their every move. One day, the consultant received a call from his assistant, who was checking the traps that day. She said several traps smelled strongly of mothballs, but she couldn't investigate too closely because the landowner was watching like a hawk. Intrigued, the consultant sniffed the traps the next day, and also smelled mothballs. He then ordered some commercial "snake repellent," and when it arrived — it too smelled strongly of mothballs! Nevertheless, several Butler's Garter Snakes were eventually trapped on this site, and the landowners have since attended public meetings and legislative hearings where they accused the consultant of "planting" the snakes on their property. Snake repellents are never mentioned.

Although the snake remains protected, the fact that the threat of de-listing was used to force a compromise in favor of development is troubling. The Wisconsin DNR continues to work toward revising its protection plan, having promised to reduce protection for the snake to favor private landowners. They have retained the Conservation Breeding Specialist Group (Apple Valley, Minnesota) to assist them with population viability analyses and plan revisions.

Web Resources:

<http://www.fortwayne.com/mld/newssentinel/news/local/16116112.htm>

<http://www.dnr.state.wi.us/org/land/er/herps/snakes/butlersgrt.htm>