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Public Comments Processing

Attn: FWS-R5-ES-2015-0122

U.S. Fish and Wildlife Service, MS: BPHC, 5275 Leesburg Pike
Falls Church, VA 22041-3803

Re: Comments on Positive 90-Day Finding for Wood Turtle

To Whom It May Concern:

I am writing to submit comments on behalf of the Center for Biological Diversity (“Center”). The Center is a national, nonprofit organization with over 900,000 members and online activists whose mission is to protect and restore endangered species and their habitats through science, policy, education, advocacy, and environmental law.

Scientists estimate that about 25 percent of the nation’s amphibians and reptiles are at risk of extinction, yet less than 70 of the approximately 1,400 U.S. species protected under the Endangered Species Act (ESA) are amphibians and reptiles. Bohm et al. (2013) found that nearly 1 in 5 of the world’s reptiles are threatened with extinction, and another 1 in 5 are data deficient. They are the highest proportion of at risk species in freshwater environments.

To ensure that the nation’s most vulnerable amphibians and reptiles secure the life-saving protections of the ESA, on July 11, 2012, the Center submitted a petition to list 53 amphibian and reptiles species. The petition asks the U.S. Fish and Wildlife Service to protect six turtles, seven snakes, two toads, four frogs, 10 lizards and 24 salamanders under the ESA.

I submit these comments to offer additional science in support of the positive finding on the Center’s petition for the wood turtle, which the U.S. Fish and Wildlife Service published in the Federal Register on Sept. 18, 2015.

Jones and Willey (2015) provide a comprehensive, 271-page status assessment of wood turtles in the Northeast. I will not repeat the contents this highly informative report, but instead attach the report, describe the most relevant information provided, and highlight some key findings. The report provides the historic and current distribution of the wood turtle on a state-by-state basis across its range in the Northeast, Great Lakes and Canada (Jonest and Willey 2015, p. 64-73). In reviewing available research on population status, the report (p. 75) finds: “Several studies in the Northeast or adjacent regions have presented quantitative evidence of decline of wood turtles. Almost all studies with a long-term component appear to report detectable or apparent declines.” The report also provides (pp. 79-85) a comprehensive state-by-

state summary of regulatory measures in effect to protect wood turtles and wood turtle habitat in the 13 northeastern States.

Jones and Willey (2015, pp. 85-95) further summarizes information on the numerous documented threats to adult wood turtles. The report finds (p. 85):

It appears extremely likely that many populations have been impaired as a result of urbanization and its associated effects (Part 4). It is apparent that the major threats, causes for decline, or other factors affecting the extant populations are the combined effects of habitat fragmentation and degradation, namely: roadkill of adults; mortality associated with agricultural machinery; collection (especially of adults) for commercial and personal trade; dams; severe floods; stream stabilization; aggressive beaver control; pollution, and disease.

And the report concludes (p. 95):

It is well documented that wood turtles are negatively affected by a wide range of anthropogenic stressors, the greatest of which are those associated with habitat fragmentation and degradation. Important proximate causes of adult mortality include roadkill and crushing by agricultural machinery, which have been demonstrated to be major threats throughout the Northeast region. Collection for commercial and noncommercial purposes is documented to occur throughout the region.

Jones and Willey (2015) is the most comprehensive review of the status and threats to wood turtles available, and it provides compelling evidence that ESA protections are necessary to address the documented declines and threats.

Parren (2013) studied wood turtles in Vermont for 25 years, and observed numerous injured turtles, including turtles with missing limbs and tails and damaged shells. He posits that most of the shell damage was likely caused by mower strikes (p. 187). He states (p. 188): “The Wood Turtle’s future is threatened in large measure due to its habit of moving long distances overland from its home stream where it encounters agricultural equipment and vehicles on roads (Saumure et al. 2007).” Injuries to wood turtles from agricultural mowers was also analyzed by Erb and Jones (2011), who found that raising mower height can prevent some deaths.

Predation by human-subsidized predators, such as raccoons, is another threat to the turtles. Parren (2013) observed that overall, 58.5% of adult turtles suffered predator injuries (p. 176). He summarizes research on the impacts of human-subsidized predators on wood turtles (p. 187).

Cochran et al. (2014) studied a population of wood turtles in northeastern Wisconsin. They also observed numerous injured turtles (p. 6). In addition, the researchers observed that wood turtles spent much more time in uplands than previously reported and conclude that floodplain zoning alone would not be sufficient to protect the range of habitat used by this species throughout the year (p. 5).

Timber harvesting can also harm wood turtle populations. The Natural Heritage and Endangered Species Program of Massachusetts (2007, p. 17) explains:

Although Wood Turtles are found within forested areas, they prefer areas that do not have a fully closed canopy cover. Therefore, forestry practices that open up areas within a forest are beneficial for Wood Turtles as long as the area remains in a forested condition. The greatest concern during the actual forestry operations are turtles being run over and crushed by mechanized logging equipment. The habitat alterations that are of concern with forestry practices are any changes to the water quality and stream habitat that the Wood Turtle uses for overwintering, mating, and foraging. Another potential concern is creating nesting habitat along main roads. This nesting area might lure females into an area where there is a higher probability of being run over by a vehicle. Similarly, if a parcel across the road from a Wood Turtle home stream is being harvested and the habitat immediately surrounding the stream is more densely forested, the newly opened habitat may lure Wood Turtles across the road and increase mortality rates because of road kill.

That report also discusses the myriad of threats facing wood turtles in Massachusetts (pp. 15-17) and offers forest management guidelines to reduce impacts on wood turtles. A broad incidental take permit for forestry activities in Wisconsin discusses how forestry management can impact wood turtles and helps demonstrate why federal protection is needed to protect habitat unprotected under state law (WI DNR 2015).

Isolation is a serious threat facing dwindling populations of wood turtles. The Connecticut Dept. of Energy and Environmental Protection (undated, p. 2) explains: “Many remaining populations in Connecticut are low in numbers and isolated from one another by human-dominated landscapes. Turtles forced to venture farther and farther from appropriate habitat to find mates and nesting sites are more likely to be run over by cars, attacked by predators, or collected by people as pets.”

To be sure, studies elsewhere have revealed some evidence of reduced genetic diversity in isolated populations of wood turtles (Fridgen et al. 2013, p. 351). Researchers studying wood turtles in Michigan observed that loss of genetic diversity is slow in the long-lived wood turtle (Willoughby et al. 2013, p. 195). They did not find a bottleneck or significant inbreeding but observed “a small but statistically significant increase in the average relatedness . . . , which is associated with the start of an extinction vortex” (Willoughby et al. 2013, p. 195). They suggest that “timely intervention is needed to prevent dramatic decreases of genetic diversity in populations of Wood Turtles in Michigan” (Willoughby et al. 2013, p. 195). Because wood turtles are so long-lived, reduced genetic diversity should only be evident in the younger cohorts, while older individuals would have higher genetic diversity reflective of previously larger turtle populations (Fridgen et al. 2013, p. 351; Spradling et al. 2010, p. 1675). Given that wood turtle populations are undoubtedly becoming more isolated in ever more fragmented landscapes, isolation effects are certain to become more prominent in the future.

Illegal collection of wood turtles continues to contribute to their population declines. To be sure, wood turtles are valuable in the pet trade, selling for several hundred dollars each. In August of 2015, a man was sentenced for 41 months for attempting to buy 100 wood turtles for \$40,000 (<http://www.kingsnake.com/blog/archives/3139-Wood-Turtle-poacher-sentenced-to-3+-years-in-prison.html>). Another case involved 100 turtles being sold for \$50,000 (<http://theadvocate.com/news/10118337-123/north-shore-man-helps-feds>). And another involved a New Jersey man trading in numerous illegally caught turtles, including wood turtles (<http://patch.com/new-jersey/hoboken/man-admits-turtle-trafficking-hudson-county-0>). In 2009, another man got a sentence of one year home detention after getting caught with more than 100 illegally-collected wood turtles in his van (<http://www.loudounwildlife.org/blog/2011/02/wood-turtle-poaching-in-west-virginia/>). According to advertisements on Kingsnake.com turtle classifieds in 2010, full grown adult wood turtles are frequently sold as breeding pairs in online classifieds for \$500–\$750. The majority of these are offered without proof that they are captive bred and not wild caught. In Japan, according to a 2010 auction site, wood turtles have a value of \$3,786 dollars each in Tokyo (<http://www.loudounwildlife.org/blog/2011/02/wood-turtle-poaching-in-west-virginia/>). Google searches easily reveal numerous sites offering wood turtles for sale (<http://www.tortoiseforum.org/threads/wood-turtle-for-sale.112945/>; <http://www.theturtlesource.com/i.asp?id=100200307>; <http://www.snakesatsunset.com/north-american-wood-turtle/>; <http://www.faunaclassifieds.com/forums/showthread.php?t=335436>). Blankenship (1999) provides an outdated but fairly detailed discussion of the threat posed to wood turtles from illegal collection.

Wisconsin DNR (2012, p. 3) explains that climate change may be a threat to the wood turtle. Anticipated changes in storm frequency and intensity peak water levels, and other waterway characteristics may threaten the available habitat requirements for basking, cover, food availability, and hibernacula of the wood turtle (WICCI 2011). A potentially longer growing season for agriculture communities may also lead to an increase in adult mortality; putting more negative pressure on population viability (WICCI 2011). Researchers in Iowa reached similar findings. Berendzen et al. (2010, p. 4) found that more intense mid-summer flooding is now washing out or drowning out most nests on mid-river sand bars, accentuating declines of this state-endangered species.

Another source of mortality includes entanglements in litter and debris left behind by people (Conn. DEEP undated, p.2).

Wood turtles also face the threat of disease, some of which are newly discovered. Ossiboff et al. (2015, p. 1) discovered herpesvirus in wood turtles in the Northeast. Herpesviruses are most often associated with subclinical or mild infections in their natural hosts, and no sampled turtles showed overt signs of disease at sampling. However, infection of host-adapted viruses in closely related species can result in significant disease.

Please note that I included a copy of each article cited, and these should be included in the agency's record. Thank you for this opportunity to comment on the positive finding for the wood turtle. Please do not hesitate to contact me if the Center can be of further help during your status review for this species.

Sincerely,



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