TOP 10 NOMINATION FORM

2020 Topic: Illegal wildlife (plants and animals) trafficking and unsustainable trade

Species must meet these qualifications:

- Must be native U.S. species or international species with significant U.S. demand
- Must be experiencing substantial decline (do not have to be threatened/endangered listed)
- Must be directly or indirectly impacted
    - Direct: exploited as trophies, pets, medicines, etc.
    - Indirect: impacted by imported exotics or imported disease vectors (e.g., chytrid)

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Nominated Species (Common Name & Scientific Name):

Diamondback terrapin (*Malaclemys terrapin*)

Question 1: Threat to the Species
How is the species and/or its habitat threatened by illegal wildlife trafficking and/or unsustainable trade? Note the extent of the threat and whether it is direct or indirect. Include references to relevant scientific studies. Does the species face any associated political threats?

The diamondback terrapin is directly threatened by both illegal wildlife trafficking and unsustainable trade in the few states that still allow terrapins to be trapped. Named for the concentric, diamond-shaped rings on their shells, diamondback terrapins are among the most beautiful and charismatic turtles in the United States. Though their colors may vary between light gray, dark gray, brown, and nearly black, diamondback terrapins are easily identifiable by their diamond-patterned shells and flecked or spotted heads and legs. Because of their distinctive looks, they are highly coveted for the pet trade.

The International Union for the Conservation of Nature (IUCN) Red List ranks the diamondback terrapin's global status as Vulnerable and describes its population trend as decreasing (Roosenburg et al. 2019). Turtle soup became a popular dish in the late 1800s, and terrapins were harvested in staggering numbers through the Great Depression to meet the demand, resulting in a population crash (Hart and Lee 2007). Terrapins generally have not recovered from these past episodes of direct harvest (Hart and Lee 2007).

Although most states across the terrapin's range have now banned commercial trapping of terrapins, it is still legal to capture them for commercial purposes in Louisiana and Delaware. La. Rev. Stat. Ann. § 56:635; 2020 Louisiana Commercial and For-Hire Fisheries Rules and

Regulations, https://www.wlf.louisiana.gov/assets/Resources/Publications/Regulations/2020_Commercial_Fishing_Regs.pdf (last accessed Apr. 30, 2020 (permitting commercial terrapin trapping from June 16-April 14, with limits on size and method of taking but no limit on the number that may be taken); Del. Code tit. 7, s. 715(b).

Poaching to meet domestic and foreign demand for the pet trade also appears to be an increasing threat to the long-term survival of terrapins (Wood 2019). For instance, in New Jersey, several cases involving poaching of thousands of terrapins indicate current illegal exploitation is on the rise (Wood 2019). Similarly, in Florida, poachers were apprehended with thousands of illegally taken turtles, including terrapins (Woods 2019, Miller 2020). Experts fear this type of poaching may be occurring—undetected—range-wide (Wood 2019). This type of poaching and trafficking are expected to rise as global demand rises (FWC 2020).

Florida Fish and Wildlife Conservation Commission [FWC]. 2020. Global Turtle Demand and Illegal Trafficking, https://myfwc.com/media/22936/12b-presentation-turtle.pdf.

Hart, K.M. and D.S. Lee. 2007. The Diamondback Terrapin: The Biology, Ecology, Cultural History, and Conservation Status of an Obligate Estuarine Turtle in Studies in Avian Biology No. 32:206–213, *available at* http://sora.unm.edu/sites/default/files/journals/sab/sab_032.pdf#page=214.

Miller, Kimberly. Officials Are Cracking Down on Turtle Smugglers in Florida, https://www.usatoday.com/story/news/nation/2020/02/22/turtle-smuggling-florida-officials-crack-down-illegal-trade/4845180002/, USA Today (Feb. 23, 2020).

Roosenburg, W.M., Baker, P.J., Burke, R., Dorcas, M.E. & Wood, R.C. 2019. *Malaclemys terrapin*. *The IUCN Red List of Threatened Species* 2019: e.T12695A507698. http://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T12695A507698.en. Downloaded on 17 August 2019.

Wood, R. C. Large-Scale Poaching of Northern Diamondback Terrapin in NJ [abstract]. In: 17th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles, Joint Annual Meeting of the Turtle Survival Alliance and IUCN Tortoise & Freshwater Turtle Specialist Group, at 69; 2019, Aug. 4–8; Tucson, AZ (program available at https://www.dropbox.com/s/b2lxsvqeuiizon8/Full%20Conference%20Program%20FINAL.pdf?dl=0).

Woods, Amanda, Alleged Poachers Busted for Trafficking more than 4,000 Florida Turtles, New York Post, https://nypost.com/2019/10/21/alleged-poachers-busted-for-trafficking-more-than-4000-florida-turtles/ (Oct. 21, 2019).

Question 2: Role of the Species

What is the ecological and/or scientific importance of the species? Note if it is a keystone species and describe its role in its environment. Include references to relevant scientific studies.

The diamondback terrapin (*Malaclemys terrapin*) is the only turtle species in the world that lives exclusively in brackish coastal habitats (Wood 1995). It occurs in the United States along the coasts of the Atlantic Ocean and Gulf of Mexico, from Massachusetts to Texas, and in Bermuda. Diamondback terrapins are potentially keystone species in the salt marshes and mangroves they inhabit, which means they help maintain the ecological health of their associated ecosystems. Among the prey of diamondback terrapins are the salt marsh snails (*Littorina spp.*) (Tucker et al. 1995), which in high numbers contribute to loss and erosion of salt marshes by grazing on the epiphytes that live on stems of grasses and thereby killing the grasses (Silliman and Bertness 2002). Because terrapins feed on the snails, it has been suggested that their potential effect on snail populations could reduce salt marsh erosion and loss. The potential top down predation effect suggest that the terrapin may play an important role in salt marsh ecosystem function, particularly when terrapins occur at high densities. (See Brennessel 2007). Terrapins also move substantial quantities of nutrients and calories from the water to land in the form of eggs and adult terrapins, which are then eaten by a variety of terrestrial and avian predators (Seigel 1980; Clark 1982; Cecala et al. 2008).

Brenessel, B. 2007. The Northern Diamondback Terrapin Habitat, Management and Conservation. Prepared for The Northeast Diamondback Terrapin Working Group, Norton, MA.

Cecala, K. K., J. W. Gibbons, and M. E. Dorcas. 2008. Ecological effects of major injuries in diamondback terrapins: implications for conservation and management. *Aquatic Conservation: Marine and Freshwater Ecosystems* DOI: 10.1002/aqc.

Clark, W. S. 1982. Turtles as a food source of nesting bald eagles in the Chesapeake Bay region. *Journal of Field Ornithology* 53:49-51.

Seigel, R. A. 1980. Predation by raccoons on diamondback terrapins, *Malaclemys terrapin tequesta*. *J. of Herpetology* 14(1):87–89.

Silliman, B. R. and M. D. Bertness. 2002. A trophic cascade regulates salt marsh primary production. *Proceedings of the National Academy of Sciences of the USA* 99:10500–10505.

Tucker, D. A., N. N. FitzSimmons, and J. W. Gibbons. 1995. Resource partitioning by the estuarine turtle *Malaclemys terrapin*: tropic, spatial, and temporal foraging constraints. *Herpetologica* 51(2): 167–181.

Wood, R. C. and R. Herlands. 1995. Terrapins, tires, and traps: conservation of the Northern Diamondback Terrapin (*Malaclemys terrapin)* on the Cape May peninsula, New Jersey USA. Pages 254-256. In J. Van Abbema editor. Proceedings: An International Congress of Chelonian Conservation. Gonfaron, France.

Question 3: Message

What is the most important message about this species for decision-makers and the public?

Diamondback terrapins were almost trapped to extinction back in the late 1800s and early 1900s, and they are at risk again because they are trafficked to meet a substantial demand for the pet trade. In addition to cracking down on traffickers, we can give terrapins a fighting chance to survive by relieving some of the other threats they face—including coastal habitat loss, mortality in crab pots, road kills, and climate change.

Final Selections
If my nomination is selected for inclusion in the report, I would like the first draft of the species profile for the report to be written by (choose one):
_X_ You (ESC), and then my NGO will edit the profile and approve the final draft.
__ Me (my NGO). I understand that I (and other participating writers) will need to adhere to ESC's writing guidelines.

Deadline: May 8, 2020
Send to: top10@endangered.org