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Comment on the Conservation Status of the Desert Tortoise(s)

PHOTO BY JASON FOLT

Fig. 1. Adult *Gopherus morafkai* at burrow entrance, Maricopa County, Arizona, October 2010.

PHOTO BY TODD PIERSON

Fig. 2. *Gopherus morafkai*, Pima County, Arizona, August 2011.

Murphy et al. (2011) proposed that the Desert Tortoise (*Gopherus agassizii*) be split into two separate species. As suggested by their title, the authors made a significant effort to disentangle a dizzying array of confusion surrounding the taxonomy of the species. They elevated populations south and east of the Colorado River in Arizona and Mexico to species level and named them *Gopherus morafkai*, with tortoises north and west of the Colorado River retaining the name *Gopherus agassizii* (Figs. 1–4). Currently, *G. agassizii* (*sensu stricto*) is listed as Threatened under the U.S. Endangered Species Act (ESA), with the listed entity defined as a distinct population segment (Mojave population) of the larger species (*sensu lato*; USFWS 1990, 2010a). The Sonoran population segment (*G. morafkai*) was determined to be warranted for listing under the ESA, but precluded by higher priorities (USFWS 2010b). The boundaries and genetic basis for the species delineation proposed by Murphy et al. (2011) and the population designations recognized under the ESA are completely analogous, both divided precisely along the Colorado River.

After describing their taxonomic investigation, Murphy et al. (2011) comment on implications for conservation as a result of the proposed new species recognition, which would reduce the geographic range of *G. agassizii* to about 30% of its previously recognized range. These comments include several statements that are misleading or factually incorrect, which I wish to clarify here. Specifically, the paper's authors claim that "[t]he most important implication of describing *G. morafkai* is that Arizona and Mexico can no longer be considered to harbor a genetic reservoir for the Mojavian population of the desert tortoise" (and *vice versa*) and that the reduced range of *G. agassizii* indicates that the species may more appropriately be classified as Endangered, rather than Threatened.

ROY C. AVERILL-MURRAY
U.S. Fish and Wildlife Service, Desert Tortoise Recovery Office
1340 Financial Boulevard, #234, Reno, Nevada 89502, USA
e-mail: roy_averill-murray@fws.gov

The first claim, that each species can no longer be considered a genetic reservoir for the other, is based on a premise with no historical basis, that tortoises on either side of the Colorado River were ever considered genetic reservoirs for one another. Recognition of genetic differences between the two populations/species of Desert Tortoises predates the listing of the Mojave population in 1990 (Jennings 1985; Lamb et al. 1989). Nothing in the listing rule, original recovery plan, or revised recovery plan suggest reliance upon the opposite population as a genetic reservoir. The final listing rule for the Mojave population recognized that the Colorado River "has been an effective geographic barrier, separating the Mojave and the Sonoran populations for millions of years" (USFWS 1990). The original recovery plan specifically recognized the importance of genetic differentiation in its recommendation that genetically homogeneous populations should be the sole basis for any research into translocations of Desert Tortoises (USFWS 1994). The revised recovery plan places greater emphasis on the use of experimental population augmentation as a recovery strategy, but it also specifically mentions the need to consider genetics in such a program (USFWS 2011). In summary, neither population/species has been considered a genetic reservoir for the other in Desert Tortoise management history.

The second claim, that the reduction in range of *G. agassizii* (*sensu stricto*) warrants species classification as Endangered, also ignores regulatory history. As noted above, the Fish and Wildlife Service recognized the distinction between the Mojave and Sonoran populations at the time the Mojave population was listed as Threatened. The status determination for the Mojave population of the Desert Tortoise was based on a threats analysis specific to that population (USFWS 1990; see also USFWS 2010a). Consideration of—or even the existence of—tortoises on the opposite side of the Colorado River played no part in determining that the Mojave population should be classified as Threatened, rather than Endangered. Likewise, the status determination for the Sonoran population was independent of the status, abundance, or existence of the Mojave population (USFWS 2010b). Taxonomic elevation of the Sonoran population to a full species has no effect on the Federal regulatory status of either species.

PHOTO BY KEVIN DURSO

Fig. 3. Adult *Gopherus agassizii*, Clark County, Nevada, May 2009.

PHOTO BY JACK GOLDFARB (WWW.JACKGOLDFARBPHOTOGRAPHY.COM)

Fig. 4. Adult *Gopherus agassizii*, Desert Tortoise Natural Area, Kern County, California, May 2009.

While Murphy et al. (2011) may have clarified long-standing confusion surrounding the taxonomy of the Desert Tortoise, clarifying the confusion their paper created about the conservation of the species is more than just an esoteric exercise. Press releases associated with the release of this paper generated a significant amount of media attention and public exposure about the new species and their supposed status (e.g., Center for Biological Diversity 2011; Danelski 2011). Incorrect public perception about how the proposed taxonomic change affects the species' status can only undermine the effectiveness of the ESA. Overstating a species' degree of endangerment, or otherwise misrepresenting important considerations relative to the species' status, opens the door to accusations by critics of the ESA of the distortion of science to serve ulterior, advocacy-based motives. On the other hand, setting unwarranted public expectations that new listing designations or regulatory changes should be forthcoming is destined to cause disillusionment among ESA proponents about the Act's effectiveness. Neither scenario serves the conservation purposes of the ESA.

Whether or not one agrees with the current official status designations of *G. agasszii* or *G. morafkai* under the ESA, tortoises on both sides of the Colorado River are recognized to be suffering from population declines. Conservation efforts are appropriately focused on factors contributing to these declines and on factors inhibiting the species' ability to maintain self-sustaining populations. Exaggerated claims of species imperilment distract from this focus.

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