



## Health Assessments and Mycoplasmosis Data for Morafka's Desert Tortoise in Mexico

Researchers from U.S. and Mexico conducted the first health evaluations of wild and captive Morafka's desert tortoises (*Gopherus morafkai*) in Mexico. Formerly lumped with *Gopherus agassizii*, these tortoises are distributed primarily in the Sonoran Desert and Tropical Deciduous Forest, and have different habitat preferences than their Mojave Desert relatives.

Researchers conducted health evaluations of 69 wild and 22 captive Morafka's desert tortoises in Mexico between 2005 and 2008. The wild tortoises were from 11 sites in the states of Sonora and Sinaloa, and the captive tortoises were from the state-managed Centro Ecológico de Sonora Zoo in Hermosillo and a private residence in the town of Alamos.

Altogether, 88 tortoises were tested for mycoplasma upper respiratory tract disease (URTD) using ELISA assays for specific antibody and by culture and PCR for detection of *Mycoplasma agassizii* and *Mycoplasma testudineum*. The findings are reported in the *Journal of Wildlife Diseases*.

Fifteen of 22 captive tortoises had one or more positive diagnostic test results for *Mycoplasma agassizii*, whereas no wild tortoises had positive tests. Tortoises with positive tests also had significantly more moderate and severe clinical signs of mycoplasmosis on beaks and nares compared to tortoises with negative tests.

Captive tortoises also exhibited significantly more clinical signs of illness than did wild tortoises, including lethargy and moderate to severe ocular signs. The severity of trauma and diseases of the shell and integument did not differ significantly among tortoises by evaluation site. However, clinical signs of moderate to severe trauma and shell lesions were more prevalent in older tortoises.

Similar to research findings for other *Gopherus* tortoise species in the United States, the authors found that URTD is an important disease in captive tortoises. If they escape or are released by intention or accident to the wild, captive tortoises are likely to pose risks to healthy, naïve wild populations.

### This Brief Refers To:

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<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5160>



Thus far, Morafka's desert tortoise is known to differ from Agassiz's desert tortoise in distribution, shell shape, preferred topography, and reproductive season. Photo: Cecil Schwalbe/USGS

### MANAGEMENT IMPLICATIONS

- Tortoise ecology and tortoise disease in Mexican landscapes remain to be studied. This report presents early data on the health of Sonoran and Sinaloan tortoise populations.
- Mycoplasmosis is an issue for desert tortoises in the Mojave Desert, in context of human interactions, land use changes, and released captive tortoises. These potential links between tortoise disease and environmental conditions need to be understood for the Morafka's desert tortoise.
- The health status of a desert tortoise, specifically in terms of mycoplasmosis, is not necessarily easy to determine. This disease is chronic and animals express clinical signs intermittently; clinical signs may signal clinical or subclinical disease or they may be absent in an ill tortoise. Field studies should be followed with lab assays to confirm health status of examined animals.

### RESEARCH CONTACT

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