Petition to Reclassify the Gopher Tortoise (*Gopherus polyphemus*) as a Threatened Species in Florida

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Introduction

By this petition, the Florida Fish and Wildlife Conservation Commission (FWC) is requested to reclassify the gopher tortoise (*Gopherus polyphemus*) from a Species of Special Concern (Rule 68A-27.005, F.A.C.) to a Threatened Species (Rule 68A-27.004, F.A.C.) under the provisions established in Rule 68A-27.0012, F.A.C. An FWC Bureau of Wildlife Diversity Conservation staff evaluation of recent research and survey data indicates that the gopher tortoise has declined in number by more than 50% over the last three generations and, therefore, meets the criteria for listing as a Threatened Species, as defined in Rule 68A-1.004, F.A.C. Reclassifying the gopher tortoise as a Threatened Species will more appropriately reflect the species' status.

Biological Information

Under FWC listing criteria in Rule 68A-27.0012, F.A.C. and definitions in Rule 68A-1.004 F.A.C., species are classified on the state list according to their range-wide status. Accordingly, information reported here covers the entire range of the gopher tortoise. Gopher tortoises historically occurred on the Coastal Plain from southern South Carolina west to Louisiana and south throughout much of Florida.

Rule 68A-1.004 provides for assessment of decline over the last 10 years or three generations, whichever is longer. The generation time of the gopher tortoise varies latitudinally, ranging in Florida from 27 to 35 years (Miller 2001; Miller pers. commun.). Allowing for somewhat longer generation times in other states, overall generation time is estimated to average 33 years. Hence, the three-generation review period is estimated as 99 years.

The FWC Office of Environmental Services conducted a GIS analysis of gopher tortoise habitat in Florida (Stys pers. commun. December 2001). Based on the maps of Davis (1967), the original extent of tortoise habitat in Florida was estimated to have been 10,845,015 acres. Current extent was estimated to be 1,620,612 acres, a decline of 85.1%. Some of this loss of habitat occurred prior to 1900, but the decline in native tortoise habitat may well have exceeded 80% since 1900. Tortoises have not necessarily been eliminated from all of the converted habit, though. Agricultural lands now comprise 2,522,201 acres (23%) of the original tortoise habitat, and tortoises are still found on or around the periphery of many of the less intensively developed lands. Similarly, although tortoise populations typically decline following conversion of natural pine forests to dense pine plantations, tortoises may still remain in reduced numbers around the periphery of the plantations or by moving among early successional stands generated as areas are harvested.

Land-use changes related to silviculture, agriculture, mining and development account for most of the loss of original tortoise habitat. Former or potential tortoise habitat also has been degraded or rendered unsuitable in Florida and elsewhere by fire suppression and alteration in frequency or season of burn. Tortoises have also declined due to human predation, especially in the Florida Panhandle. Panhandle tortoise populations are very sparse on extensive areas of public lands (Blackwater River State Forest, Eglin Air Force Base) due to a long history of exploitation for food (Johnson and Hipes 1997, Printiss and Hipes 1999).

Outside Florida, gopher tortoise populations west of the Tombigbee River (Louisiana, Mississippi, and western Alabama) are federally listed as Threatened. Lohoefener and Lohmeier (1984) estimated that no viable populations of tortoises remained in Louisiana, and that only about 24,000 mature tortoises remained in Mississippi and Alabama west of the Tombigbee River. In Georgia and Alabama east of the Tombigbee River, tortoises have fared somewhat better. Populations there have not been so heavily impacted by urbanization as have Florida populations, but the extensive conversion of native pinelands to dense pine plantations has greatly reduced habitat quality.

Auffenberg and Franz (1982) estimated that the "original standing crop" of gopher tortoises had been reduced by about 80% during the preceding 100 years. The FWC staff assessment similarly concludes that the gopher tortoise has declined by 60-80% in the last three generations (99 years) based upon:

(1) decline in area of occupancy and quality of habitat due to urbanization, especially in Florida,
(2) extensive conversion of sandhill habitats to pine plantations,
(3) extensive conversion of scrub and sandhill habitats to agriculture,
(4) lack of prescribed fire and suppression of natural fire, and
(5) human predation.

State of Florida listing criteria for Threatened Species require that one of the following general conditions be met: (1a) the species has undergone a population decline of 50% over the past three generations, (2b) the species is expected to undergo a 50% decline over the next three generations, (2a) the extent of occurrence is less than 2,000 square miles, (2b) the area occupied is less than 200 square miles, (3) the population numbers less than 2,500 mature individuals and is declining, (4) the population numbers less than 250 mature individuals, or (5) a quantative analysis shows the species has a 20% or higher probability of extinction within five generations. Based on the data summarized above, FWC staff contends the gopher tortoise has undergone a population decline of at least 50% over the last three generations and thus meets criterion (1a) for listing as a Threatened Species.

Literature Cited

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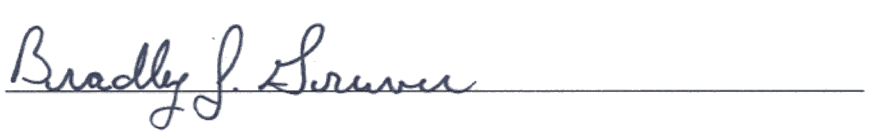
Signature: 

Date: 15 May 2002