Desert Tortoise

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SCIENTIFIC NAME: *Gopherus agassizii.* The genus stems from the French *gaufre,* meaning honeycomb, alluding to the species' burrow complexes. The specific epithet honors Professor J. L. R. Agassiz, a Swiss zoologist who founded the Zoological Museum at Harvard University.

DESCRIPTION: The desert tortoise has a domed shell, stout "armored" legs, a bluntly-snouted head, and a relatively long neck. Males are noted by the gular (throat) projection and concave surface of their lower shell (plastron). Desert tortoises reach about 15 inches in body (shell) length and weights of up to 15 pounds.

DISTRIBUTION: Low to middle-elevation deserts of California, Nevada, Utah, and Arizona, south into Mexico. In Arizona: the northwestern corner through the central and western parts of the state.

HABITAT: This species occupies two habitat types: Mohave Desert tortoises occur on desert flats covered by creosote and saltbush and studded by yuccas; Sonoran tortoises occur on rocky slopes with Sonoran Desert vegetation. The habitat distinction is important in regard to the nature and extent of threats to the species.

BIOLOGY: The biology varies between the flatland "Mohave" and slope-dwelling "Sonoran" populations. Arizona is at a biological crossroads. West-central Arizona is Mohave Desert in composition, but the tortoises there are "Sonoran" in terms of their federal status. Commonalities rangewide include: use of burrows for shelter at night, hibernation in winter and to avoid the heat of summer days; a diverse diet of plant material, including grasses, wildflowers, fruits, etc.; home ranges of less than 1 sq. mile; early morning and late afternoon above-ground activity periods, especially in conjunction with warm-season rains; use of surface water; sexual maturity at 10-20 years of age; nest construction by the female; and egg predation by reptiles and mammals. These behaviors may differ regionally.

Female desert tortoises lay 1 to 12 eggs per clutch, depending on rainfall, temperature, and food available to convert to eggs. Mohave females may lay a second or even third clutch in good years. The female digs the nest hole and deposits the ping-pong-ball-shaped eggs directly into it. She covers the eggs so well, even a careful search may not reveal them. The eggs hatch in 70 to 120 days, and the hatchlings immediately begin to fend for themselves against a host of predators (e.g., eagles, bobcats, coyotes) and other challenges. Most mortalities occur in the early years; adults may live for decades, captives for 75 years or more.

STATUS: The Sonoran Desert population is not threatened or endangered. The Mohave Desert population is federally listed as threatened. The species in Arizona and elsewhere is considered sensitive in that a variety of habitat and other issues typically keep it from thriving. In Arizona, Commission Order 43 prohibits taking desert tortoises from the wild. Lawfully obtained individuals may, however, be privately possessed, subject to specific rules that are reviewed each year and revised as appropriate.

MANAGEMENT NEEDS: Management revolves around habitat, but other factors are also important. Habitat issues include drought, wildfire, grazing, habitat conversion and fragmentation, and invasion of exotic vegetation. Other factors include illegal collecting, vandalism, road-kill, disease, release of captive tortoises (native and exotic), and predation. The habitats in which this species occurs are subject to many uses—some intensive—and tortoise populations often hang in the balance. The interplay among the habitat and population threats is complex, and controversial. Unfortunately, the population recovery time for this long-lived but slow-to-reproduce species is best measured not in years, or even decades, but in centuries.

Terry Johnson, Chief of Nongame and Endangered Species, counts the desert tortoise among the most challenging of nongame wildlife. He says, "It seems like such a simple animal ecologically, yet its life history and problems are so complex. Like all animals that outlive their "managers," this one will tell our grandchildren whether we did the right things to protect it. I hope there are lots of them left to tell the story."