

Desert Tortoises Awaken to an Uncertain Future

by

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for

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Deep in their burrows protected from cold winter temperatures, desert tortoises hibernate. Their body temperature, heart rate and breathing are reduced to survival levels as they quietly sleep until warmer weather rouses them from their slumber. A winter's supply of fat and water stored within their bodies provides sufficient sustenance for them to survive this three- to five-month slumber. For desert-living reptiles such as the desert tortoise, the ability to enter into a similar state during the summer, called aestivation, allows them to survive periods of drought and extreme heat when food and water may be absent.

March generally marks the month when desert tortoises emerge from their burrows to feed on seasonal wildflowers and perennial plants. Unseasonably warm spells in winter may induce the tortoises to emerge to drink or feed for a few days until chilly weather drives them back underground. Likewise, cool spring weather may delay their emergence.

Desert tortoises are most vulnerable to disease, predation and harassment in the spring and early summer when they are active. People pose the greatest threat by far to the desert tortoise. Pet collectors removed thousands of animals from the desert before it became illegal to collect tortoises, in 1973 the California Fish and Game Commission developed special laws to protect wild tortoises from collecting, harassment, and shooting. Collecting any specimens from National Park lands has always been illegal without a special permit. In addition, heavy grazing and unrestricted off road vehicle recreation in the Mojave Desert severely impacted tortoise habitat, which together with collecting, disease, and other potential factors led to declining tortoise populations. The desert tortoise was listed as threatened under the Federal Endangered Species Act in 1990. While public land agencies and concerned citizens have worked together to protect and restore vital habitats, and minimize the threats to the desert tortoise, populations continue to decline. In some areas of the Mojave Desert, tortoise populations have declined as much as 85%. Some scientists predict that the desert tortoise may become extinct within 50 years if populations continue at their current rate of decline.

Many reasons exist for this population decline, not the least of which is the biology of the desert tortoise itself. Tortoises generally live about 50 years in the wild and some animals in captivity have lived over 100 years. Young tortoises do not begin breeding until they are 15-25 years old and only a few hatchlings out of a clutch of 2-10 eggs will survive to breeding age under the best conditions. As a result, any rapid decline in their population for whatever reason will take decades, if not centuries, to restore. In addition, desert tortoises are difficult to study and monitor since they spend most of the year underground.

While great strides have been made in reducing illegal collecting and directing off-road vehicles to sanctioned recreational areas, these activities still threaten tortoise populations. A number of additional

threats have also led to declining populations. Disease, wildfires and ravens pose significant threats and each can be traced back to human causes.

Desert tortoises are susceptible to a bacterial respiratory disease. Some scientists believe the bacterium, *Mycoplasma*, was first introduced to wild populations when an infected pet tortoise was released back into the wild. Others believe that desert tortoises have coexisted with *Mycoplasma* for centuries, but that degraded habitat or other stressors have compromised tortoises' immune system, making them more susceptible to respiratory disease. In either case, the bacteria are readily spread between tortoises, and the disease may ultimately be fatal. *Mycoplasma* attacks the tortoise's or tortoises' respiratory system and can be transmitted through contact between individual animals or through human handling. Please do not release pet tortoises into the wild; they may be carrying these bacteria or a number of other diseases.

Once a rare occurrence in the desert, wildfires now rage throughout the region as seasonal non-native grasses and weeds encroach on native habitats. Red brome and Mediterranean splitgrass, annual grasses, are the most widespread and flammable. These fire-prone exotic plants thrive in disturbed and previously burned areas, edging out the perennial plants and seasonal wildflowers that the tortoises prefer to eat. While tortoises generally survive the flash fire, the long-term effects to their food supply may have more far reaching impacts.

Ravens serve a vital function in the desert. As scavengers and predators, the birds keep populations of prey species in check and recycle dead animals back into the food chain. However as human populations have increased in the desert, so have ravens. Uncovered garbage dumps, road killed animals, litter and untended pet food bowls provide supplemental food to ravens who have responded with explosive population growth. Some ravens also feed on hatchling and young tortoises. For its first five years, the juvenile tortoise's shell or carapace remains soft, making it vulnerable to predation.

For more information go to www.DesertTortoise.gov

The desert tortoises that share the Mojave and Sonora Deserts with us deserve our help. Here are a few things you personally can do to help desert tortoises:

Mojave Max's Top Ten List of Things You Can do to Help Desert Tortoises [sidebar]

1. Drive only on designated roads and trails.
2. Don't litter.
3. Place your garbage in hard-sided, covered containers (ravens easily open plastic bags).
4. Drive slowly in areas where wildlife and pets are present – minimize road kills.
5. Watch wild tortoises from a distance. Never touch, pick up or disturb a wild desert tortoise.
6. If you see wild tortoises for sale, contact a game warden immediately.
7. If you have a pet tortoise that was collected years ago, do not release it back to the wild.
8. Plant native plants in your garden and weed out non-native invasive plants.
9. Be careful with fire.