

Habitat is a crucial factor in survivability of released tortoises

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As conservationists work to recover endangered species populations, taking individuals that are maintained and protected under human care and reintroducing them into the wild, it becomes apparent that there is a great deal to learn about the science of species recovery. In a paper published in the recent edition of the *Journal of Applied Ecology*, a team of wildlife experts from San Diego Zoo Global, the U.S. Geological Survey, the U.S. Fish and Wildlife Service and the University of Nevada analyzed the effect of habitat quality on the survival and dispersal of released desert tortoises. Juvenile tortoises used in this study originated from eggs produced by females housed at the Desert Tortoise Conservation Center in Las Vegas. Ages ranged from 6 months to 4 years. The tortoises were translocated and monitored for one year, using radio tracking systems.

"The goals of the study were to help re-establish populations of this threatened and declining species, and to understand better what critical resources on the landscape are associated with the ability of young [tortoises](#) to survive and thrive," said Ron Swaisgood, Ph.D., director of Applied Animal Ecology at San Diego Zoo Global. Tortoises released in habitat that included appropriate vegetation, rocks and the presence of animal burrows had lower mortality rates than those released in areas where land features offered fewer options for predator avoidance.

"Burrows created by small mammals represent critical components of desert tortoise ecology," said Melia Nafus, Ph.D., a researcher for San Diego Zoo Global and lead author of the study. "Supporting healthy rodent populations through habitat management may improve juvenile

desert tortoise survival and recruitment." Another interesting finding of the study was that tortoises released on rocky ground were less likely to disperse away from the release site. "This finding probably relates to the tortoise's dependence on rocky substrate, as camouflage to hide from predators," said tortoise expert and co-author Todd Esque, Ph.D., from the U.S. Geological Survey.

"The U.S. Fish and Wildlife Service encourages research such as this because it provides vital knowledge that informs our policy and management decisions," stated study co-author Roy Averill-Murray, who heads the service's Desert Tortoise Recovery Office. "Now, we have better information when deciding which habitats to protect for desert tortoises, and where to attempt re-establishment of [desert tortoise](#) populations with future releases." Translocation of individuals back to the wild is one of many important tools that conservation biologists use to recover endangered and threatened species. "We view these translocations as a way to learn more about animals' habitat requirements, while also assisting directly with species recovery goals," said Ron Swaisgood.

Provided by Zoological Society of San Diego

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