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# Translocation as an Effective Conservation Tool for Desert Tortoises

With increasing conflicts of urban and industrial development projects with populations of Agassiz's desert tortoise (*Gopherus agassizii*), there is an increasing need for management tools to minimize and mitigate the effects of this development. Translocation of tortoises is increasingly proposed and used in these efforts, yet there is little scientific evidence of its effectiveness as a conservation tool.

A study in *The Journal of Wildlife Management* reports on the survivorship, reproduction and habitat use of tortoises after translocation. In the study, 120 tortoises were translocated to 5 sites in Nevada and Utah. Translocation sites included several elevations, in order to test the possibility of moving animals to higher elevation areas not typical of tortoise habitat. Survivorship, reproduction and movement patterns of translocated and resident animals were monitored at each site with the assistance of x-radiography and radio telemetry.

Survivorship was not statistically different between translocated and resident tortoises within and among sites, and survivorship was greater overall during non-drought years. The number of eggs produced by tortoises was similar for both translocated and resident females, but the number differed among sites, in accordance with site-specific resources. Animals translocated to atypical habitat generally moved until they reached vegetation communities more typical of desert tortoise habitat. Even within typical habitat, tortoises tended to move greater distances in the first year after translocation than did residents, although their movement distances in the second or third year post-translocation did not differ from residents.

Tortoises translocated into typical Mojave desert scrub habitats performed well. However, managers need to consider the expanded movements of tortoises during the first post-translocation year in management plans.

## Management Implications

- Managers should consider increased movement distances of translocated tortoises when evaluating sites for potentially risky features within expected movement paths such roads with heavy traffic, unless the boundaries of the unsuitable features are fenced.
- Tortoises should be released in spring or fall to avoid inhospitably hot summer months, as animals that are initially released in inhospitable abiotic conditions may fail to find adequate shelter from potentially lethal environments.
- Translocated animals may contribute to recruitment of hatchlings to the population. Adult female tortoises may be especially valuable members of the population and would be a preferred demographic group when considering candidates for translocation.

### THIS BRIEF REFERS TO:

Nussear, KE, CR Tracy, PA Medica, DS Wilson, RW Marlow, PS Corn. 2012. Translocation as a conservation tool for Agassiz's desert tortoises: survivorship, reproduction, and movements. *The Journal of Wildlife Management*. doi: 10.1002/jwmg.390

<http://www.werc.usgs.gov/lasvegas>

<http://www.werc.usgs.gov/ProductDetails.aspx?ID=4693>



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Translocation proved to be an effective conservation measure for tortoises in the northeast Mojave.