

radio-telemetry at the Redbank Reserve near Macraes Flat, Central Otago. She tracked 13 skinks from December 2003–April 2004 for 26–111 days. Neither distances moved nor frequencies of movements differed significantly between males and females. Home range

estimates (using the 100% minimum convex polygon method) ranged from 200–5,400 m<sup>2</sup>, with male home ranges significantly larger than those of females, and those of non-gravid females significantly larger than those of gravid females. Home range overlap was substantive and

interactions between individuals occurred frequently. Capturing animals increased frequency of movements, especially on days immediately following capture. Data generated by this study will be incorporated into a management plan for the species.

## NATURAL HISTORY RESEARCH REPORTS

### Desert Tortoise Hibernation

NUSSEAR ET AL. (2007. *Copeia* 2007: 378–386) examined the onset, duration, and termination of hibernation in Desert Tortoises (*Gopherus agassizii*) over several years at multiple sites in the northeastern part of their geographic range in Utah, Arizona, and Nevada, and recorded the temperatures experienced by tortoises during winter hibernation. The timing of hibernation by Desert Tortoises differed among sites and years. Environmental cues acting over the short-term did not appear to influence the timing of the hibernation period. Different individual tortoises entered hibernation over as many as 44 days in the fall and emerged from hibernation over as many as 49 days in the spring. This range of variation in the timing of hibernation indicated a weak influence at best of exogenous cues hypothesized to trigger and terminate hibernation. Regional trends do appear, as hibernation tended to begin earlier and continue longer at sites that were higher in elevation and generally cooler. The emergence date was generally more similar among study sites than the date of onset. While the climate and the subse-



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Local climate affected timing of hibernation, but average temperatures experienced by hibernating Desert Tortoises (*Gopherus agassizii*) differed very little.

quent timing of hibernation differed among sites, the average temperatures experienced by tortoises while hibernating differed by only about five degrees from the coldest to the warmest site.

### Feeding Ecology of Rattleless Rattlesnakes

*Crotalus catalinensis* is a rattleless rattlesnake endemic to Santa Catalina Island, in the Gulf of California, Mexico. Some authorities have hypothesized that the lack of a rattle in this species is a stealth adaptation for hunting birds in vegetation. AVILA-VILLEGAS ET AL. (2007. *Copeia* 2007: 80–84) provided



LEE GRISMER

Rattleless Santa Catalina Island Rattlesnakes (*Crotalus catalinensis*) feed primarily on mice and lizards, arguing against the hypothesis that the lack of a rattle facilitates stealthy hunting for birds in vegetation.

detailed data on the diet of these snakes from samples obtained during nine trips to the island in 2002–2004. Over two-thirds (70%) of the diet was composed of the Santa Catalina Deer Mouse (*Peromyscus slevini*). The remaining prey were lizards (*Dipsosaurus catalinensis*, *Uta squamata*, and *Sceloporus lineatulus*). The diet shifted ontogenetically, and feeding activity was greater during the dry season. The diet of this species is only a small subset of the diet of its supposed closest relative, *C. ruber*, probably as a

result of limited prey diversity on the island. The lack of birds in the diet argues against the hypothesis relating the lack of a rattle with a stealth hunting technique for birds in vegetation. However, because *P. slevini* is partially arboreal, the lack of a rattle might be an adaptation for stealth hunting for mice in vegetation.

### Habitat Affects

#### Predator Attack Frequencies

Predators use characteristics such as pattern and shape in forming search images of prey, thereby influencing the evolution of prey morphology. In lizards, sit-and-wait foraging species are thought to have body shapes that enhance their ability to remain cryptic to predators. Structurally complex habitats provide more opportunities for prey to avoid detection, thus predator foraging efficiency is predicted to be higher in structurally simple habitats. SHEPARD (2007. *Herpetologica* 63: 193–202) used clay lizard models to test whether predation varies among lizards with different body shapes and whether predation varies among habitats in the Brazilian Cerrado with different structural characteristics. Predator attack frequency was highest in the most structurally complex habitat, but the probability of being attacked was higher in more open microhabitats. Attack frequencies did not differ significantly among the four lizard model shapes. Lizards and birds were the main attackers of models, and attacks were primarily directed toward the models' heads. Results demonstrated that predator-prey interactions are largely influenced by the environmental context and scale, and that body shape alone does not efficiently promote crypsis.