CONSERVATION RESEARCH REPORTS

Wild Pigs and Herpetofaunas

Herpetofaunal populations are decreasing worldwide, and the range of wild pigs (*Sus scrofa*) is expanding. Depredation of threatened reptilian and amphibian populations by wild pigs could be substantial. By understanding depredation characteristics and rates, more resources can be directed toward controlling populations of wild pigs coincident with threatened or endangered herpetofaunal populations. From April 2005 to March 2006, **Jolley et al.** (2010. *Journal of Mammalogy* 91:519–524) used firearms to collect wild pigs (n = 68) and examined stomach contents for reptiles and amphibians. The authors found 64 individual reptiles and amphibians, composed of five different species that were consumed by wild pigs during an estimated 254 hours of foraging. Primarily arboreal species (e.g., Green Anoles, *Anolis carolinensis*) became more vulnerable to depredation when temperatures were low and they sought thermal shelter. Other species (e.g., Eastern Spadefoot toads, *Scaphiopus holbrookii*) that exhibit mass terrestrial migrations during the breeding season also faced increased vulnerability to depredation by wild pigs. Results suggest that wild pigs are opportunistic consumers that can exploit and potentially have a negative impact on species with particular life history characteristics.


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Species, such as Eastern Spadefoot toads (*Scaphiopus holbrookii*), that exhibit mass terrestrial migrations during the breeding season face increased levels of predation by wild pigs.

Climate Change Implicated in Lizard Extinctions

Many predictions have suggested that climate change will cause species extinctions and distributional shifts in coming decades, but data to validate those predictions are relatively scarce. **Sinervo et al.** (2010. *Science* 328:894–899) compared recent and historical surveys for 48 Mexican lizard species at 200 sites. Since 1975, 12% of local populations have gone extinct. The authors verified physiological models of extinction risk with observed local extinctions and extended projections worldwide. Since 1975, they estimated that 4% of local populations have gone extinct worldwide, but by 2080 local extinctions are projected to reach 39% worldwide, and species extinctions may reach 20%. Global extinction projections were validated with local extinctions observed from 1975 to 2009 for regional biotas on four other continents, suggesting that lizards have already crossed a threshold for extinctions caused by climate change.


FAUSTO MÉNDEZ-DE-LA-CRUZ

The phrynosomatid lizard *Sceloporus serrifer* has been extirpated at several Mexican sites where increased temperatures have been documented.

Climate Change Spells Catastrophe for Blanchard's Cricket Frog

Climate change may be one of the greatest environmental catastrophes encountered by modern human civilization. The potential influence of this global disaster on wildlife populations is subject to question. **McCallum** (2010. *Acta Herpetologica* 5:119–130) interpolated how seasonal variation in weather patterns influences growth and reproduction in Blanchard's Cricket Frogs (*Acris blanchardi*). He then extrapolated the influence of future climate conditions on these life history characteristics using fuzzy regression. Fuzzy regression was an accurate predictor of growth and reproduction based on the climatic conditions present from 1900–2007. It predicted that the climate projections expected for Arkansas by 2100 could reduce total reproductive investment in Blanchard's Cricket Frogs by 33–94%. If these results reflect responses by other poikilotherms, climate change could induce major population declines in many species. Because poikilotherms represent the vast majority of vertebrates and significant ecosystem components, the implementation of strategies to reduce greenhouse gas emissions and circumvent this possible catastrophe is imperative.


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Climate projections for Arkansas by 2100 could reduce total reproductive investment in Blanchard's Cricket Frogs (*Acris blanchardi*) by 33–94%.

Anthropogenic Disturbance Degrades Habitat Quality for Rock-Dwelling Reptiles

Even apparently subtle disturbance to habitat can have severe long-term consequences if that disturbance alters specific microhabitat features upon which animals depend. For example, in southeastern Australia, the endangered Broadhead Snake (*Hoplocephalus bungaroides*) and its prey (Velvet Geckos, *Oedura lesueurii*) shelter in narrow crevices beneath sun-warmed rocks. Humans frequently displace rocks while searching for snakes and lizards, and these reptiles are rarely found under such displaced rocks (even when the rocks superficially appear suitable). **Pike et al.** (2010. *Animal Conservation* 13:411–418) quantified disturbance to rock outcrops and showed that most disturbance was subtle (rocks were typically displaced <30 cm from their original position), but that disturbed rocks harbored fewer reptiles than undisturbed rocks.


PAVEL GERMAN, WILDLIFE IMAGES

Even subtle disturbances to habitat can have severe long-term consequences if that disturbance alters specific microhabitat features, such as narrow crevices beneath sun-warmed rocks used by the endangered Australian Broadhead Snake (*Hoplocephalus bungaroides*).

In a field experiment, the authors replaced half of the rocks back to their original positions to test whether crevice structure and microclimates differed between disturbed and restored rocks. Crevices beneath displaced rocks were larger and cooler than those beneath restored rocks, and precise repositioning of rocks enhanced usage by reptiles. Both crevice size and temperature influence retreat-site selection; hence, minor displacement of overlying rocks reduces habitat quality by modifying critical crevice attributes. The subtlety of this disturbance suggests that even well intentioned researchers could damage habitat during field surveys. Conservation of rock outcrop systems requires efforts to reduce rock disturbance, and the education of those searching for animals beneath rocks about the importance of replacing them properly.