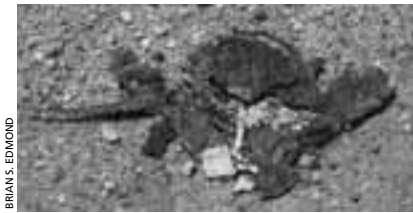


# CONSERVATION RESEARCH REPORTS

## Road Mortality Altering Sex Ratios in Turtles

With an increase in turtle road mortality accompanying the expansion of the road network throughout the United States, affecting mostly females searching for suitable nest sites, GIBBS AND STEEN (2005. *Conservation Biology* 19:552–556) predicted that historical trends in sex ratios of turtle populations would be increasingly male-biased. Using 165 estimates of population-level sex ratios for 36 species (published from 1928–2003), the authors demonstrated that the proportion of males in populations had increased linearly. Populations have become more male-biased in aquatic species, in which movement differentials between males and females are greatest, and are least biased in semiaquatic and terrestrial species, in which overland movements are more comparable between sexes. Their results suggest an ongoing depletion of breeding females from wild turtle populations over the last century.



BRIAN S. EDMOND

Road-killed Common Snapping Turtle (*Chelydra serpentina*) from Hickory County, Missouri. Populations have become more male-biased in aquatic species, because females may wander far in search of nesting sites, whereas males rarely leave the immediate vicinity of water.

## Commercial Trade in Amphibians and Reptiles

Amphibians and reptiles are taken from the wild and sold commercially as food, pets, and traditional medicines. Because some species have been over-collected and the United States, unlike most countries, tracks imports and exports of all amphibians and reptiles, SCHLAEPFER ET AL. (2005. *BioScience* 55:256–263) examined records from 1998–2002. This revealed a US trade of several million wild-caught amphibians and reptiles each year, although many shipments were not recorded at the species level. Because

accurate trade and biological information for most species are not available, establishing whether current take levels are sustainable is difficult. The void of information also implies that population declines due to over-collecting could be going undetected.



AILEN SALZBERG

Detailed and accurate data are not available for most imported species. Establishing whether or not current take levels are sustainable is impossible. Complicating matters is high mortality in many shipments. These flat, stacked boxes, nailed together for shipping, are barely high enough to accommodate animals, which are packed tightly. The “tegues” (= tegus, *Tupinambis* sp.) in this shipment, photographed in the mid-1990s at John F. Kennedy International Airport in New York, did not survive.

## Decline in a Population of Wood Turtles in Southern Québec

Wood Turtle (*Glyptemys insculpta*) populations have been declining throughout the species’ range and some populations have been extirpated. DAIGLE AND JUTRAS (2005. *Journal of Herpetology* 39:130–132) used mark-recapture methods to document a 50% reduction over seven years in an agricultural area in southern Québec. Emigration from the area is not likely; instead, increased mortality and poor recruitment probably are responsible for the decline in the turtle population. Increased mortality may be related to increased incidence of roadkills, deaths attributable to farm machinery, burial or crushing by heavy machinery during stream bank stabilization, higher predation pressure, and even poaching. Because of success in finding juveniles in other Wood Turtle populations, the authors did not think the low numbers of young individuals was due to either secretive habits or use of habitats that were not sampled. Thus, the best explanation is poor recruitment. Since apparently suit-



SUZANNE L. COLLINS, CHAH

Wood Turtle (*Glyptemys insculpta*) populations are declining throughout the species’ range.

able nesting sites are available, low nesting success, attributable to increased predation, especially by Racoons (*Procyon lotor*), appears to be responsible.

## Conservation Status of the Komodo Dragon

Information on population size and distribution of the Komodo Monitor (*Varanus komodoensis*) is largely restricted to surveys conducted on only part of the species’ range, the most recent of which was conducted in 1971. CIOFI AND DE BOER (2004. *The Herpetological Journal* 14:99–107) noted that populations occur on only four islands in Komodo National Park and on the island of Flores in southeastern Indonesia. Population density estimates for Flores were more than 60% lower than those for islands in Komodo National Park. Habitat fragmentation and poaching of prey species currently represent the main threats to *V. komodoensis*. Protection of monsoon forests in western and northern Flores is crucial for the long-term conservation of the species.



JOE WASILEWSKI

A solitary male Komodo Monitor (*Varanus komodoensis*) on the island of Komodo. Often called “dragons,” these largest living lizards are threatened by habitat fragmentation and poaching of prey species.

### Impact of Humans on Savanna Lizard Assemblages

Habitat degradation through over-grazing and wood collection is prevalent in South Africa. Although protected areas have been designated for conservation, little is known about diversity outside these areas. SMART ET AL. (2005. *Biological Conservation* 122:23–31) assessed the impact of land use on lizard assemblages in communal rangelands by comparing abundance, species richness, and species diversity in degraded communal lands and a protected area. Communal lands had fewer large trees and less ground cover, but the authors found no evidence that any species of lizard was negatively affected by habitat disturbance. Some species were more common in communal lands, and species richness and diversity were also higher when using certain sampling techniques. This may have been attributable to the preference of many terrestrial lizards for open, sparsely grassed areas, but reduced numbers of predators and competitors may also have played a role. However, species commonly used by traditional healers were not encountered in field surveys, and local residents indicated that they appeared to be declining.



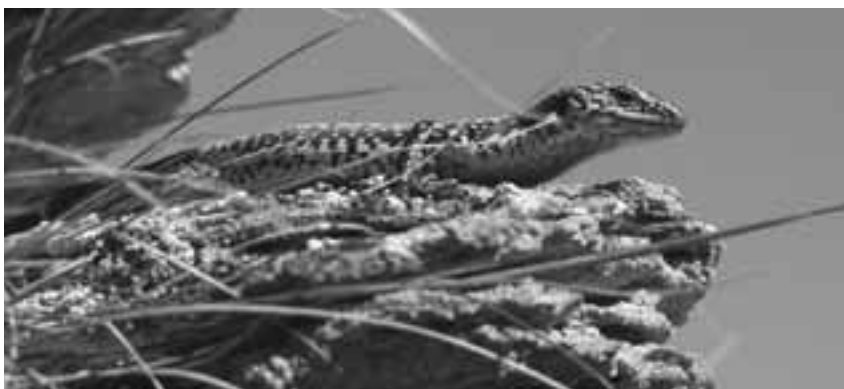
ROSE SADDLER, AUSTRALIAN MUSEUM

The lacertid, *Pedioplanis lineoocellata*, was more abundant in disturbed areas than in a protected area. The species is reasonably common in sparsely vegetated areas throughout much of southern Africa. This specimen is from southern Namibia, near Aus.

### Declining Population or Always Rare?

Species that are rare when discovered present a practical management problem because we may not be able to determine whether a taxon is in the final stages of an anthropogenic decline or is naturally uncommon. BERRY AND GLEESON (2005. *Biological Conservation* 123:197–210)

analyzed mitochondrial and microsatellite DNA data to distinguish between these possibilities in a rare lizard from southern New Zealand. Grand Skinks (*Oligosoma grande*) are large, rock-dwelling lizards with a fragmented distribution consisting of a western and eastern cluster of populations separated by about 120 km. This distribution could result from human disturbance, pre-human climatic and vegetation changes, or both. The current situation is likely to have both historical and recent anthropogenic elements. Two eastern populations showed evidence of being historically large, although they are now small, supporting anecdotal data that Grand Skinks have declined in historical times. However, reciprocal monophyly suggests long independent evolutionary histories that predate the arrival of humans. Eastern and western populations fulfill many criteria necessary for consideration as evolutionarily significant units (effectively, species), but such a classification must be balanced against addressing more immediate threats to the species' survival, such as introduced predators.



TRENT BELL

The Grand Skink, *Oligosoma grande*, is restricted to 8% of its former range in Otago, New Zealand due to agricultural development and predator pressure. These endangered skinks live on schist rock outcroppings in the harsh environments of the high country.

### Blanding's Turtle in Nova Scotia

Nova Scotia populations of Blanding's Turtle (*Emydoidea blandingii*) are small and disjunct. What was previously thought to be a single panmictic population consists of three discrete groups in two different watersheds. MOCKFORD ET AL. (2005. *Biological Conservation* 123:373–380) identified significant genetic differences in pairwise comparisons between groups. Distance rather than watershed seemed to be the principal determinant. Population simulations suggested that this differentiation likely pre-dated human influence on the local landscape. In the face of rapid environmental changes, understanding



SUZANNE L. COLLINS, GMNH

Significant genetic differences exist between isolated populations of Blanding's Turtles in Nova Scotia.

spatial structure in this population complex is essential for matching management strategies to ecological realities in this long-lived, late-maturing species.

**Artificial Lights and Hatchling Sea Turtles**

Artificial lighting disrupts the nocturnal orientation of sea turtle hatchlings as they crawl from their nest to the ocean. TUXBURY AND SALMON (2005. *Biological Conservation* 121:311–316) used laboratory experiments in an arena to simultaneously present artificial light (that attracted the turtles toward “land”) and natural cues (a dark silhouette of the dune behind the beach) that promoted “seaward” orientation. Artificial lighting disrupted seaward crawling in the presence of low silhouettes, but not high silhouettes. Low silhouettes provided adequate cues for seaward crawling when the brightness of artificial light was reduced. Based on these results, the authors postulated that artificial light disrupts orientation by competing with natural cues. Current restoration practices at nesting beaches emphasize light reduction. However, at many sites, some lights cannot be modified. The study suggests that pairing dune restoration (to enhance natural cues) with light reduction (to the extent possible) should significantly improve hatchling orientation, even at nesting beaches where lighting cannot be entirely eliminated.



These hatchling Leatherback Sea Turtles (*Dermochelys coriacea*) were photographed using light from a flashlight with a red filter over the lens in order not to disrupt their orientation. Photograph courtesy of the St. Eustatius National Parks Foundation (STENAPA).

**Green Bridges**

TEUFERT ET AL. (2005. *Zeitschrift für Feldherpetologie* 12:101–109) examined use of the “green bridge” across Autobahn 4 near Bischofswerda (Germany). They documented use of the bridge by three species of amphibians (European Common Toad, *Bufo bufo*; Common Eurasian Spadefoot Toad, *Pelobates fuscus*; European Common Frog, *Rana temporaria*) and three species of reptiles (Viviparous Lizard, *Zootoca vivipara*; Slow Worm, *Anguis fragilis*; Grass Snake, *Natrix natrix*). Most crossings were by *B. bufo* and *Z. vivipara*. The latter especially demonstrated a very high fidelity to appropriate microhabitats, suggesting that the efficacy of green bridges is dependent on maintaining appropriate habitat structure on the bridge and in areas to either side.



GUNTHER KÖHLER

Species that are known to use the “green bridge” near Bischofswerda: The Viviparous Lizard (*Zootoca vivipara*, male and female) and the Slow Worm (*Anguis fragilis*).

**Buffer Zones**

The preservation of riparian taxa often requires the preservation and manage-

ment of buffer zones around riparian areas. ROTH (2005. *Copeia* 2005: 399–402) tested this assumption using radio-telemetry to examine the spatial distribution of male, gravid female, and non-gravid female Cottonmouths (*Agkistrodon piscivorus*) in a stream/riparian habitat in Texas. Over 80% of all observations were within 10 m of the stream. However, gravid females were most frequently found farther away, up to 94 m from the shoreline. The author concluded that disturbances to the terrestrial areas surrounding the riparian habitat would have a disproportionate effect on gravid females, potentially affecting the reproductive capacity of the population. This study reinforces the importance of buffer zones and consideration of spatial use differences between population subunits when developing management plans.



BRIAN D. GREENE

Cottonmouths (*Agkistrodon piscivorus*) usually are associated with streams. However, especially gravid females may move some distance from the stream, indicating a need to maintain sufficient buffer zones when conserving riparian habitats. Adult in defensive posture (top), showing the white oral lining from which the common name is derived; juveniles (bottom) are much more distinctly patterned and retain a yellow tail through several sheds.