

CONSERVATION RESEARCH REPORTS

Do Breeding Facilities for Chelonians Threaten Their Stability in the Wild?

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) postulates that trade should not imperil the survival of a species in the wild. CITES defines breeding categories as “captive bred,” “captive born” or “farmed,” and “captive raised” or “ranchled.” VINKE AND VINKE (2009). *Schildkröten im Fokus* 6(4):3–21; 2010 English translation in *Schildkröten im Fokus online* 1:1–18 <www.schildkroeten-im-fokus.de/pdf/2010tradestudy.pdf>) presented and evaluated import and export statistics for different species and countries. Those data were frequently incorrect and inconsistent. In some instances chelonians were misidentified, or they entered a country as “wild caught” and left as “captive bred.” The authors addressed the limitations of CITES and suggested means by which importing nations could enhance the conservation status of many species (i.e., by confirming non-detrimental findings emanating in the nation from which animals were exported, such as contentions that animals were not removed from nature). This is mandatory for any importation of listed species into the European Union, but non-detriment studies are lacking for many exporting nations. Because banning trade in a given species might take years to implement, even when an exporting country brazenly breaches the rules, requirements for international trade in live turtles and tortoises should include complete data on all stock movements, individual marking and documentation of breeders, and a requirement for

disclosure of all pertinent data before any permit for export or import of “captive-bred” animals is issued. If the current mechanisms of exploitation tolerated under the cover of CITES are not stopped, the threat posed to chelonian species in the wild by the international live animal trade is on a par with that of habitat destruction.

Using Natural History Collections to Understand Effects of Climate Change

JOHNSON ET AL. (2010. *BioScience* 61:147–163) proposed that natural history collections (NHCs) are important sources of the long-term data needed to understand how biota respond to ongoing anthropogenic climate change. These include taxon occurrence data for ecological modeling, as well as information that can be used to reconstruct mechanisms through which biota respond to changing climates. The full potential of NHCs for climate change research cannot be fully realized until high-quality data sets are conveniently accessible for research, but this requires that higher priority be placed on digitizing the holdings most useful for climate change research (e.g., whole-biota studies, time series, records of intensively sampled common taxa). Natural his-

tory collections must not neglect the proliferation of new information from efforts to understand how present-day ecosystems are responding to environmental change. Such new directions will require a strategic realignment for many NHC holders to complement their existing focus on taxonomy and systematics. To set these new priorities, NHC holders and global change biologists must establish strong partnerships.

Traffic, Urbanization, and Amphibian Encounter Rates

Although amphibians have relatively high rates of road mortality in urban areas, the conditions under which traffic threatens the survival of local amphibian populations remain unclear. In the Sandhills region of North Carolina, SUTHERLAND ET AL. (2010. *Conservation Biology* 24:1626–1635) counted living and dead amphibians along two transects (total length 165 km) established on roads in areas with varying degrees of urbanization. They found 2,665 individuals of 15 species, and amphibian encounter rates declined sharply as traffic and urban development increased. Regression-tree models indicated that 35 amphibians/100 km occurred on roads with <535 vehicles/day, whereas the encounter rate decreased to only 2 amphibians/100 km on roads with >2,048 vehicles/day. Although mortality rate peaked at higher traffic levels (47% dead on roads with >5,200 vehicles/day), the number of dead amphibians was highest at low levels of traffic. This suggests that areas where amphibian mortality is concentrated may actually contain the largest populations remaining on a given road transect.



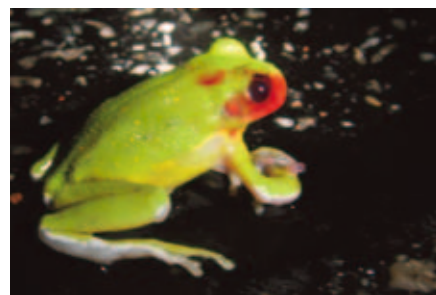
MEL J. RIVERA RODRIGUEZ

Turtles hatched at breeding farms have often not been “farm-bred,” despite claims to the contrary. This fortunate hatchling Red-footed Tortoise (*Chelonoidis carbonaria*) was bred in semi-captivity for conservation purposes and released into the wild.



GEORGE ZUG

Research employing natural history collections is critical for assessing long-term trends, such as effects of anthropogenic climate change. Here, Kate Jackson examines a cobra at the National Museum of Natural History (Smithsonian Institution).



RON SUTHERLAND

This unfortunate Barking Treefrog (*Hyla gratiosa*) looks alive, but didn't move when nudged. Upon closer examination, fire ants were already aggregating to start their feast.

NATURAL HISTORY RESEARCH REPORTS

Predators Restrict Foraging Behavior in Black Spiny-tailed Iguanas

The presence of a predator may have direct and indirect effects on the behavior of prey.

Although altered behavior may help prey avoid predators, it also can have a potential impact on critical activities such as foraging. Predator-prey interactions are routinely studied in laboratory-

based experiments owing to the perceived difficulties of conducting such experiments in natural settings. FARALLO ET AL. (2010. *Phyllomedusa* 9:109–119) conducted an experimental study



CUNTEBOAL

Black Spiny-tailed Iguanas (*Ctenosaura similis*) reduced their foraging efforts in the presence of a predator and a chemical cue to a predator.

under field conditions in Palo Verde National Park in northwestern Costa Rica to assess the behavioral responses of Black Spiny-tailed Iguanas (*Ctenosaura similis*) to the presence of predators and predator cues. Free-roaming iguanas were offered mango in designated areas in the presence of a predator (*Boa constrictor*), a predator cue (*B. constrictor* feces), and a control (no predator or predator cue). Results indicated that iguanas reduced their foraging efforts in the presence of both a predator and its cue.

Courtship Behavior in the Northern Spectacled Salamander (*Salamandrina perspicillata*)

Knowledge of reproductive behavior in the Italian endemic Northern Spectacled Salamander (*Salamandrina perspicillata*) is incomplete, and the only detailed observations were made just once in a terrarium. **BRUNI AND ROMANO** (2011. *Amphibia-Reptilia* 32:63–76) described many aspects of terrestrial courtship behavior, such as male alert posture, substrate trail-marking, approach and pursuit, tail-undulation and vent-swinging, and spermatophore deposition and pick-up. The courting pair follows an ellipsoidal track. A spermatophore is deposited by the male just in front of the female, who will reach the spermatophore as she continues to circle. No body contacts were observed during the courtship. Tail movements play a key role in the communication between sexes as well as between antagonistic males. Male-male combat involves biting as the main deterrent. The authors found that the mating season in wild populations is in the spring, differing from that reported previously for mating in captivity



GIACOMO BRUNI

Male Northern Spectacled Salamanders (*Salamandrina perspicillata*) engage in varied courtship behaviors that include alert postures that might be combined with or extended to elevating the anterior body.

(winter) or extrapolated from the beginning of sperm storage (autumn).

Reproduction in the Giant Garter Snake (*Thamnophis gigas*)

HALSTEAD ET AL. (2011. *The Southwestern Naturalist* 56:29–34) used mixed-effects models to examine relationships of reproductive characteristics of the Giant Garter Snake (*Thamnophis gigas*). Neonates from larger litters had lower mass, and mass of neonates also was affected by random variation among mothers. The length of the mother did not affect the relative mass of litters; however, the data suggested that longer mothers expended less reproductive effort per offspring than shorter mothers. The authors detected random variation in the length of neonates among mothers, but these lengths were not related to length of the mother or size of the litter. Mean size of litter varied among years, but little evidence existed for a relationship between size of litter or mass of litter and length of mother. Sex ratios of neonates did not differ from 1:1.



MATT MESHRY

The Giant Garter Snake (*Thamnophis gigas*), with a historical range throughout the Central Valley of California, is listed as vulnerable on the IUCN Red List. Because of the loss of natural habitat, this snake now relies heavily on rice fields in the Sacramento Valley, but it also uses managed marshes in protected areas. Studies of reproductive biology are essential for developing and implementing appropriate management plans. Here, a smaller male is courting the much larger female.

NEWS BRIEF

Colombian Easter Fare: Iguana, Turtle, or Mega-rodent

Green Iguana, Slider Turtles, and the world's largest rodent, the Capybara — but it's not a trip to the zoo. It's a traditional Easter dinner in Colombia. "This is the season we have them all coming in," said nutritionist Carolina Rangel,

at a center for confiscated animals in Bogotá, the Colombian capital, in reference to about 30 confiscated "outlawed" Slider Turtles, common here and in Venezuela, as well as a rogue Green Iguana officials picked up on a bus.

Sometimes problems crop up when the animals escape from their "caretakers," espe-

cially during the busy Easter season; many Colombians travel for hours on intercity buses to spend the holiday with family and prepare special meals. "People bring them in (from far-flung provinces) secretly, even stashed in suitcases so they can eat them with relatives, or sell them at open-air markets,"