

Habitat Preferences and Home-range Size

Effective wildlife conservation plans should consider both the habitat needs and spatial requirements of the species in question. Studies that focus on the correlation between the habitat preferences and movement patterns of wildlife, particularly snakes, are uncommon. **KAPFER ET AL.** (2010. *Journal of Zoology* 282:13–20) attempted to determine how habitat preferences or quality influenced movement patterns of snakes. To answer this question, the authors created a case model that incorporated habitat preference or avoidance information rigorously obtained for Bullsnares (*Pituophis catenifer sayi*) from 2003 to 2005 at a site in the upper mid-western US and compared it with minimum convex polygon estimates of home-range size. They employed geographical information systems to model the amount of preferred (open bluff faces) and avoided (agricultural fields and closed canopy forests) habitats within each estimated home range and compared them via multiple linear regression. They also tested the influence of gender, length, and weight on home-range size. Results indicated that home-



JOSHUA M. KAPFER

A case model that incorporated habitat preference or avoidance information for Bullsnares (*Pituophis catenifer sayi*) supported the hypothesis that habitat quality has an impact on wildlife movement patterns, and the relationship between habitat needs and spatial requirements should be considered when conserving or managing species.

range size increased primarily as a function of the amount of avoided habitat. Those data supported the hypothesis that habitat quality has an impact on wildlife movement patterns, and the relationship between habitat needs and spatial requirements should be considered when conserving or managing species.

Conservation Status of the World's Vertebrates

Using data for 25,780 species categorized on the International Union for Conservation of Nature (IUCN) Red List, **HOFFMANN ET AL.** (2010. The Impact of Conservation on the Status of the World's Vertebrates. *Science*, published online 26 October 2010) presented an assessment of the status of the world's vertebrates. One-fifth of species are classified as Threatened, and the authors demonstrated that this figure is increasing. On average, 52 species of mammals, birds, and amphibians move one category closer to extinction each year. However, this overall pattern conceals the impact of conservation successes, and they showed that the rate of deterioration would have been at least one-fifth as much again in the absence of these. Nonetheless, current conservation efforts remain insufficient to offset the main drivers of biodiversity loss in these groups: Agricultural expansion, logging, over-exploitation, and invasive alien species.

Ranavirus Infections in Wild Common Frog Populations

Amphibians are declining worldwide, and one factor is infectious diseases. Mass mortalities caused by a virus or a group of viruses belonging to the genus *Ranavirus* have occurred in wild Common Frogs (*Rana temporaria*) in England since the 1980s, and ranaviral disease is widespread in amphibians in North America, where it can also cause mass die-offs. Although numerous reports of *Ranavirus*-associated mass mortal-

ity events have been reported, no study has yet evaluated the long-term impacts of this disease. **TEACHER ET AL.** (2010. *Animal Conservation* 13:514–522) examined archived records of English Common Frog mortalities likely caused by *Ranavirus*. Preliminary indications suggest that Common Frog populations respond differently to the emergence of disease; emergence can be transient, catastrophic, or persistent with recurrent mortality events. The authors subsequently focused on populations that had recurring mortality events ($n = 18$), and they reported median declines of 81% in the number of adult frogs in those populations from 1996 to 2008. Comparable uninfected populations ($n = 16$) showed no change in population size over the same time period. Regressions indicated that larger frog populations might be more likely to experience larger declines than smaller populations, and linear models showed that percentage population size change is significantly correlated with disease status, but that habitat age (a possible proxy for environmental quality) had no significant effect on population size change. The results provided the first evidence of long-term localized population declines of an amphibian species that appeared to be best explained by the presence of *Ranavirus* infections.



CARL FARMER

Mass mortalities caused by a virus or a group of viruses belonging to the genus *Ranavirus* have occurred in wild Common Frogs (*Rana temporaria*) in England since the 1980s.

NEWS BRIEFS

Search for Lost Amphibians

Teams of scientists around the world have launched an unprecedented search in the hope of rediscovering 100 species of “lost” amphibians — animals considered potentially extinct but that may be holding on in a few remote places. This search, which is taking place in 14 countries on five continents, is the first ever coordinated effort to find such a large number of “lost” creatures and comes as global amphibian populations are suffering a shocking decline — with more than 30% of all species threatened with extinction. Many of the amphibians that the teams of scientists are looking for have not been seen in several decades, and establishing whether populations have survived or not is vital

for scientists looking to understand the recent amphibian extinction crisis.

Amphibians provide many important services to humans such as controlling insects that spread disease and damage crops, and helping to maintain healthy freshwater systems — the chemicals in amphibian skins have also been important in helping to create new drugs with the potential to save lives, including a painkiller 200 times more potent than morphine.

“Amphibians are particularly sensitive to changes in the environment, so they are often an indicator of damage that is being done to ecosystems,” explains Conservation International’s Dr. Robin Moore, who has organized the search for IUCN’s Amphibian Specialist Group. “But this

role as the global ‘canary in a coal-mine’ means that the rapid and profound change to the global



CHARLES H. SMITH

The Golden Toad (*Incilius periglenes*) is perhaps the most famous of the lost amphibians. This Costa Rican endemic was last seen in 1989.

environment that has taken place over the last fifty years or so — in particular climate change and habitat loss — has had a devastating impact on these incredible creatures. We've arranged this search for 'lost' species that we believe may have managed to hang on so that we can get some definite answers — and hopefully learn about what has allowed some tiny populations of certain species to survive when the rest of their species has been lost." The problems amphibians face from habitat loss have been massively exacerbated by a pathogenic fungus, which causes chytridiomycosis, a disease that has wiped-out entire populations of amphibians and in some cases whole species.

Dr. Moore and his team have drawn up a list of the "top-10" species that he believes would be particularly exciting to find. He said: "While it's very challenging to rate the importance of one species against another we have created this top-10 list because we feel that these particular animals have a particular scientific or aesthetic value."

Golden Toad (*Incilius periglenes*), Costa Rica. Last seen in 1989. Perhaps the most famous of the lost amphibians. Went from abundant to extinct in a little over a year in the late 1980s.

Gastric Brooding Frog (*Rheobatrachus vitellinus* and *R. silus*), Australia. Last seen in 1985. Had unique mode of reproduction: Females swallowed eggs and raised tadpoles in the stomach. Gave birth to froglets through the mouth.

Mesopotamia Beaked Toad (*Rhinella rostrata*), Colombia. Last seen in 1914. Fascinating frog with a distinctive pyramid-shaped head.

Jackson's Climbing Salamander (*Bolitoglossa jacksoni*), Guatemala. Last seen in 1975. Stunning black and yellow salamander — one of only two known specimens is believed to have been stolen from a California laboratory in the mid-1970s.

African Painted Frog (*Callixalus pictus*), Democratic Republic of Congo/Rwanda. Last seen in 1950. Very little is known about this animal, which is thought never to have been photographed.

Rio Pescado Stubfoot Toad (*Atelopus balius*), Ecuador. Last seen in April 1995. May well have been wiped-out by chytridiomycosis.



The Gastric Brooding Frog (*Rheobatrachus silus*) from Australia was last seen in 1985.



A rare Yucatán Spiny-tailed Iguana (*Ctenosaura defensor*) hitched a ride on a shipment of auto parts from Mexico, landing at Ford's Van Dyke Transmission Plant in Sterling Heights. It's now at the Detroit Zoo.

JOSEPH P. BURGESS

Turkestanian Salamander (*Hynobius turkestanicus*), Kyrgyzstan, Tajikistan, or Uzbekistan. Last seen in 1909. Known from only two specimens collected in 1909 somewhere "between Pamir and Samarkand."

Scarlet Frog (*Atelopus soriano*), Venezuela. Last seen in 1990. Known from a single stream in an isolated cloud forest.

Hula Painted Frog (*Discoglossus nigrivent*), Israel. Last seen in 1955. A single adult collected in 1955 represents the last confirmed record of the species. Efforts to drain marshlands in Syria to eradicate malaria may have been responsible for the disappearance of this species.

Sambas Stream Toad (*Ansonia latidisca*), Borneo (Indonesia and Malaysia). Last seen in the 1950s. Increased sedimentation in streams after logging may have contributed to the decline.

Dr. Claude Gascon, co-chair of the IUCN Amphibian Specialist Group and Executive Vice-president of Conservation International

said: "This is something that has never been done before, and is hugely significant, not only because of the threats that amphibians face and our need to understand what has been happening to them better, but also because it represents an incredible opportunity for the world's amphibian scientists to rediscover long-lost species. The search for these lost animals may well yield vital information in our attempts to stop the amphibian extinction crisis, and information that helps humanity to better understand the impact that we are having on the planet."

To follow the search for the lost amphibians visit: www.conservation.org/lostfrogs.

IUCN, 11 August 2010

Detroit Zoo by Way of the Yucatán

A stowaway from Mexico made it all the way to Sterling Heights in a shipment of auto parts before getting caught and given a new home in Royal Oak — at the Detroit Zoo. The foot-long rare reptile called a Yucatán Spiny-tailed Iguana (*Ctenosaura defensor*) was spotted scooting across a loading dock on 29 July at Ford Motor's Van Dyke Transmission Plant in Sterling Heights.

"This is a unique and rare rescue situation," said Detroit Zoo curator of reptiles Jeff Jundt. The species is found only in a small area of the Yucatán Peninsula, in a section of 1,200 square miles.

After glimpsing the gray-and-blue critter, a Ford safety engineer called Sterling Heights Animal Control officers, who caught the iguana and housed it temporarily at the Sterling Heights



CALPHOTO

Jackson's Climbing Salamander (*Bolitoglossa jacksoni*) from Guatemala was last seen in 1975.

Nature Center. Sterling Heights then asked the Detroit Zoo to provide a permanent home for the creature, which is rarely seen in zoos.

The adult male has a 5-inch body and 7-inch tail and is being held in quarantine to make certain it is healthy before joining the Detroit Zoo's Black Iguana (*Ctenosaura similis*) at the Holden Museum of Living Reptiles. Jundt said he expected the male's coloration to brighten "with more hues of blue" after it is released into the larger, more comfortable quarters with the female Black Iguana.

Bill Laitner, *Detroit Free Press*

Disney "Hero" Conserves Guatemalan Lizards

The Disney Worldwide Conservation Fund (DWCF) announced the recipients of the "Disney Conservation Heroes" award for 2010 during the annual meeting of the Association of Zoos and Aquariums (AZA). The award recognizes citizens around the world for their tireless efforts at the local level to save wildlife, protect habitats, and educate the communities around them.



Zootropic's Gilberto Salazar (far right) is announced as one of this year's recipients of the "Disney Conservation Heroes" award. Seated to his left are Brad Lock (Zoo Atlanta) and Christian Fernando Beza Beza (Zootropic).

Among this year's honorees is Don Gilberto Salazar, field technician for Project Heloderma and Project Palearis, conservation programs established by Guatemalan NGO Zootropic and Zoo Atlanta with support from the IRCF. Salazar has transitioned from a poacher to an active conservationist, playing a critical role in all aspects of the lizard conservation programs in Guatemala. Project Heloderma was launched in 2002 as a long-term, integrated conservation program dedicated to saving the rare Guatemalan Beaded Lizard (*Heloderma horridum charlesbogerti*). Researchers traveled to villages and interviewed locals about the presence of Beaded Lizards in the area. They came across a newspaper photo of Salazar that described him as a poacher who hunted and sold the lizards to traders. Zootropic located Salazar, who agreed to show researchers the lizard habitats. A valuable asset to the pro-

gram, Salazar has promoted lizard conservation in 35 schools reaching more than 35,000 villagers. He works long hours in hot temperatures to restore lizard habitat and conducts research that is critical to preserving biodiversity within the unique dry forest and thorny scrub of the Motagua Valley in eastern Guatemala.

Candidates for the award are nominated by nonprofit environmental organizations and AZA zoos and aquariums committed to field conservation programs. Each award recipient and their nominating organization will share a \$1,000 award from the DWCF.

Houston, Texas (15 September 2010)

Amphibians Rediscovered After Decades Lost to Science

Scientists on a global quest to rediscover "lost" amphibian species have returned from their first set of expeditions having rediscovered three species that had not been seen for decades, Conservation International (CI) and the IUCN Amphibian Specialist Group (ASG) announced on 22 September.

Searches are continuing around the globe for 100 species of amphibians that had been thought extinct, but that scientists believe may be surviving in small populations. While the discoveries are a cause for celebration as the world prepares for the Convention on Biological Diversity (CBD) that will be held in Nagoya, Japan in October 2010, they also highlight the shocking decline in the world's amphibian species in recent decades, with more than a third of all amphibians threatened with extinction.

The three animals that have been rediscovered so far include a Mexican salamander not seen since it was discovered in 1941, a frog from the Ivory Coast not seen since 1967, and another frog from Democratic Republic of Congo not seen since 1979.

Dr. Robin Moore, who has organized the Search for the Lost Frogs for CI and the ASG said: "These are fantastic finds and could have important implications for people as well as for amphibians. We don't know whether study of these animals could provide new medicinal compounds — as other amphibians have, and at least one of these animals lives in an area that is important to protect as it provides drinking water to urban areas. But these rediscovered animals are the lucky ones — many other species we have been looking for have probably gone for good." The rediscovered animals are:

Cave Splayfoot Salamander (*Chiropterotriton mosaueri*). **Hidalgo Province, Mexico.** Not seen since the discovery of a single individual in 1941. Pink-footed brown salamander that is believed to live underground in cave systems. Several were found by scientist Sean Rovito

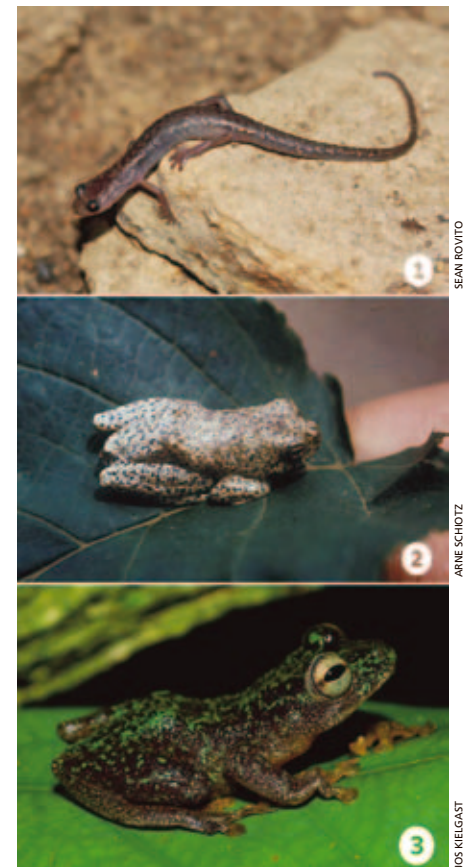
from the Universidad Nacional Autónoma de México, in a cave system that is accessible only by descending down a large pothole.

Mount Nimba Reed Frog (*Hyperolius nimbae*). **Ivory Coast.** Last Seen in 1967. Small and well-camouflaged brown frog rediscovered by local scientist N'Goran Kouame from the University of Abobo-Adjame.

Omaniundu Reed Frog (*Hyperolius sankuruensis*). **Democratic Republic of Congo.** Last seen in 1979. Beautiful frog with bright green — almost fluorescent — spots on a dark brown background. Rediscovered by Jos Kielgast from The Natural History Museum of Denmark.

Dr. Moore added: "It's pretty extraordinary to think about just how long it has been since these animals were last seen. The last time that the Mexican Salamander was seen, Glen Miller was one of the world's biggest stars, while the Mount Nimba Reed Frog hasn't been seen since the year the Beatles released Sgt. Pepper's Lonely Heart Club Band and the Omaniundu Reed Frog disappeared the year that Sony sold its first ever Walkman."

IUCN SSC e-bulletin, September 2010



Three species of amphibians have been rediscovered after not having been seen in many years: (1) The Cave Splayfoot Salamander (*Chiropterotriton mosaueri*), (2) Mount Nimba Reed Frog (*Hyperolius nimbae*), and (3) Omaniundu Reed Frog (*Hyperolius sankuruensis*).