

Snake Conservation - Captive Breeding And Rescue With Release

A Review By Andy Martin

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Reptile and Amphibian populations are threatened globally for many reasons i.e. habitat loss, degradation, land conversion, human encroachment and climate change. Some snake species are extremely adaptable and are frequently encountered in residential areas, where they make unwanted visits, requiring collection and relocation to a less volatile and dangerous habitat.

This article focuses on the challenges of conserving snakes and their crucial role in maintaining ecosystem balance. It also briefly discusses conservation strategies, including rescue, release and relocation and captive breeding for release, potentially enhancing reptile populations. Rescue and release is the front line for relocating or rehabilitating snakes before releasing them into suitable natural habitats. Captive breeding for release focuses on breeding vulnerable and endangered species in controlled environments and releasing them into suitable habitats both now and in the future. These are complicated undertakings and the subject of much current research. Both approaches are necessary and appear complementary, contributing to larger ecosystem conservation efforts.

I have been involved in both areas of snake conservation over the past 60 years, in Malawi, The Ivory Coast, Ghana and other nearby West African countries, Borneo and Indonesia and other parts of South East Asia and the UK. The reason for this article title is that based on my experience, the challenge we face in our ever-changing world is that very few people have the passion, skill and time to pursue either method. I congratulate and express deep gratitude to the members of SAH who selflessly dedicate their time and passion to capturing amazing photographic records of snakes and rescuing and relocating them when necessary in their local areas. The stunning photography provided to Rupert and Sarah for their new book "A Field Guide to Snakes of Eswatini" by members of SAH is a testament to your dedication, passion and care.

To be clear, without a suitable habitat for any given species, the only way to conserve that species is to create captive-bred populations or allow extinction. These breeding groups are usually housed in Zoos or specialist collections that are maintained until a suitable habitat is reinstated and release to the wild state can be undertaken. This process requires that the gene pools in these captive populations be kept as broad as possible to avoid in-breeding depression.

Animals bred in captivity for the pet trade **are the exception** as these are generally genetically altered during the line breeding process to establish various unnatural colour morphs. ***I do not believe these animals should ever be released into the wild.***

Snakes are integral to the health of ecosystems through their roles as predators and prey and can be regarded as important ecosystem engineers. Their presence supports biodiversity, agricultural health, and ecosystem stability.

Snakes play a vital role in maintaining ecological balance and biodiversity. The following is a brief list of key attributes:

- Snakes help control populations of small mammals, such as rodents, which can become pests if their numbers remain unchecked. This reduces crop damage and limits the spread of diseases like hantavirus and Lyme disease, which rodents can carry.
- Snakes are an important food source for predators, including birds of prey, mammals, and other reptiles. This positions them as a crucial link in food webs, supporting higher trophic levels.
- Snakes indirectly affect soil composition and health, by preying on burrowing animals like rodents. The burrowing activities of these prey animals can influence soil aeration and nutrient cycling, and their population control by snakes helps maintain this balance.
- Snakes are sensitive to environmental changes and pollution, making them good indicators of ecosystem health. Changes in snake populations can signal shifts in local conditions, prompting conservation and remediation efforts.

By maintaining the balance between predator and prey species, snakes help sustain dynamic and stable ecosystems. This balance prevents any one species from becoming too dominant, which can lead to habitat degradation and loss of biodiversity.

Protecting snakes and their habitats is crucial for overall biodiversity. This includes preserving natural habitats and mitigating human-wildlife conflicts. Increasing public understanding of the ecological importance of snakes can reduce fear and misconceptions, leading to better coexistence and conservation efforts.

There are two main strategies for conserving snakes, rescue and release/rehabilitation and release and captive breeding for release. Both methods aim to sustain and enhance reptile populations over time. The following is a brief overview of how these methods relate to and complement each other:

Rescue and Release:

- Relocation of snakes where they have inadvertently entered people's homes, gardens or business premises.
- Uplifting injured snakes, displaced due to habitat destruction, or confiscated from illegal wildlife trade and the provision of medical care, rehabilitation, and temporary housing until the snakes are healthy enough to be released.
- Releasing rehabilitated reptiles back into their natural habitats, ideally in areas where they were found or suitable habitats within their native range.
- Education to raise public awareness about snake conservation issues.
- Maintaining natural genetic diversity as reptiles are returned to their native habitats.

The benefit of rescue and release is that animals are not removed from the wild for longer than is necessary, the challenge is that very few people have the passion, skill and time to pursue this method. The issues surrounding these methods are complex and studies are ongoing.

Captive Breeding for Release:

- Breeding populations of endangered or threatened reptile species are established in controlled environments such as zoos or specialised breeding centres.
- Management of breeding programs to ensure genetic diversity and the health of the captive population.
- Raising neonates with minimal human interaction ensures they retain natural behaviours and are fit for survival in the wild. These reptiles are then released into suitable habitats or as population top-ups.

The benefits of this method are that it can significantly bolster population numbers of vulnerable and endangered species. It allows for controlled breeding and rearing, ensuring the health and genetic diversity of the population. It provides opportunities to study species biology, behaviour, and breeding in a controlled setting. The challenge is that it requires significant financial and logistical resources and captive-bred reptiles may face challenges adapting to the wild.

Success is contingent on the availability of suitable release habitats in all cases.

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This list is a small sample of the hundreds of research papers and books on this complex subject.

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