

State of the Snake



Rainbow Snake (*Farancia erytrogramma*)

Photo Credit: J.D. Willson



Partners in Amphibian and Reptile Conservation (PARC) is celebrating 2013 as the Year of the Snake! This effort aims to raise awareness about the global status of snakes and the threats and human perceptions that contribute to their decline. As the Year of the Snake unfolds, it is the goal of PARC to educate the public about the importance of these species, their importance to our ecosystems, the value of snakes to humans, and the beauty and mystique of these animals and the places they inhabit.

Log on to www.yearofthesnake.org to learn more!

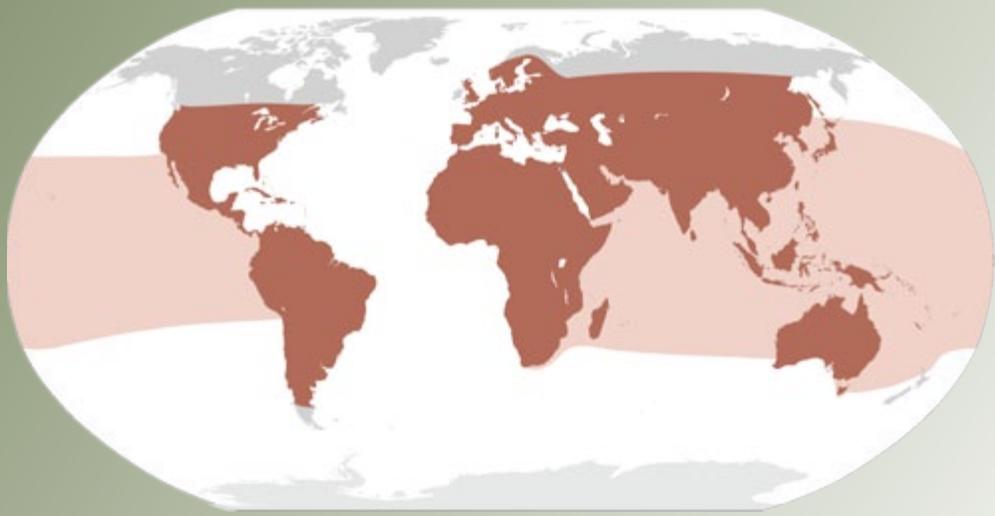
The Wonderful, Wild

World of Snakes

Snakes are one of the most fascinating groups of animals on the planet. They occur in a variety of habitats everywhere around the world with the exception of Iceland, Greenland, Newfoundland, Ireland, New Zealand, the Falkland Islands, Antarctica, and some smaller islands.

Snakes survive in some of the most extreme environments on Earth, including inside the Arctic Circle, high in the Himalaya Mountains, deep in Amazonian rainforests, and in some of the driest deserts. Some snakes, such as Blind-snakes, Threadsnakes, and Wormsnakes, spend most of their time underground, while some, such as Paradise Tree Snakes (*Chrysopelea paradisi*), live in the tree tops and have the ability to glide through the air, and others, such as Sea snakes,

spend their entire lives swimming in the open ocean. Snakes can have a variety of diets, including mammals, birds, amphibians, fish, other reptiles (even other snakes, eggs), snails, insects and other invertebrates. In almost every aspect of their biology, snakes teach us amazing things about the natural world.



Map showing the approximate global distribution of snakes is based on: Ernst (2011) and Cogger et al. (1998) for terrestrial snakes and Ernst (2011), Campbell (2004), Phillips (2002), and Spawls (1995) for sea snakes.

World distribution of snakes (suborder Serpentes)

-  Sea snakes
-  Terrestrial snakes

Photo Credit: Marisa Ishimatsu



Lined Coachwhip (*Coluber flagellum*)

The Life of a Snake

Foraging

Snakes are either active foragers, like Indigo Snakes (*Drymarchon* spp.), ambush predators, such as Bushmasters (*Lachesis* spp.), or a combination of the two, for example Cottonmouths (*Agkistrodon piscivorus*). Snakes that are ambush predators will sit and wait, often on frequently used prey trails, and strike the prey as it passes close to them. Ambush predators often spend long periods of time on the surface in foraging postures and rely on camouflage coloration (also known as cryptic coloration) to hide themselves from potential predators and prey. Active foraging involves the snake moving regularly through an area searching for prey, and may include searching known nest sites or bedding areas. Snake species that utilize both ambush and active foraging techniques usually exhibit an ontogenetic shift in foraging strategy, with juveniles employing ambush tactics then developing an active foraging behavior as adults.



Photo Credit: Manojkumar Pardeshi

Indian Sand Boa (*Eryx johnii*) consuming prey.

Movement and Habitat Selection

Movement and habitat selection vary significantly across snake species. For example, some small fossorial species (adapted for living underground) may have very small home ranges (less than a hectare), compared to large pythons that hunt sizeable mammalian prey (100s of hectares). Snakes have evolved to use a variety of approaches to moving through their habitat, including burrowing, climbing, swimming, and gliding. While habitat selection varies across the many environments snakes inhabit, it is most often related to the availability of resources, like thermoregulation and prey availability, and to a lesser degree, competition and predation.

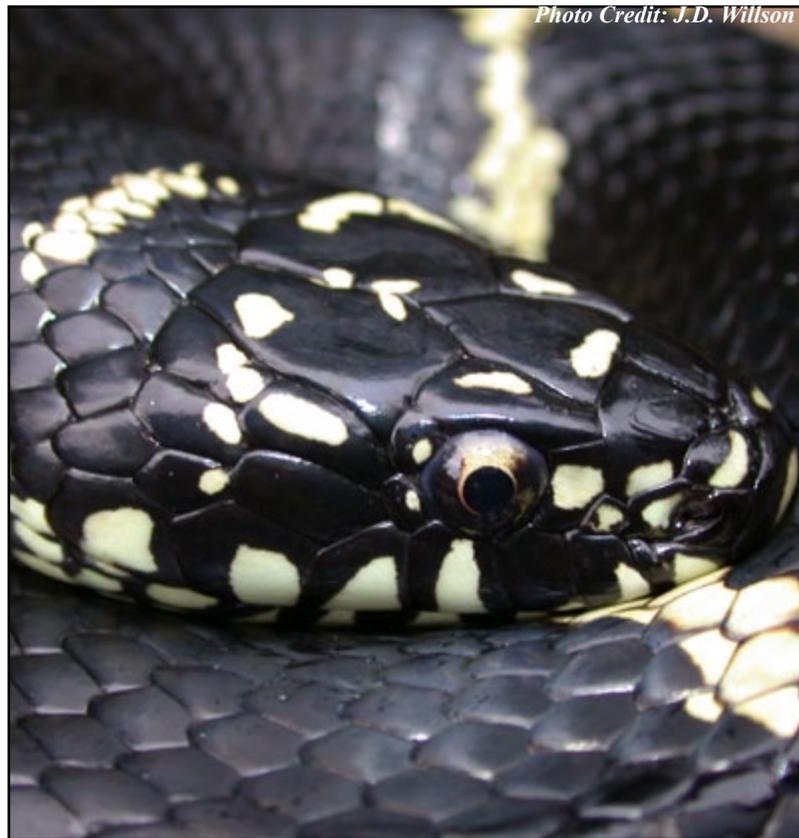


Photo Credit: J.D. Willson

Eastern Kingsnake (*Lampropeltis getula getula*), an example of an oviparous snake.

Reproduction

Mating systems and seasons vary among snake species. Some snakes, such as Gartersnakes (*Thamnophis* spp.), breed in the spring, whereas others, such as some Rattlesnakes (*Crotalus* spp. and *Sistrurus* spp.), breed in the late summer and fall. Snake fertilization is internal. Males have paired hemipenes that they insert into the cloaca of the female. The hemipenes are often hooked or spiny to attach temporarily to the wall of the cloaca. There are three modes of reproduction in snakes: ovoviviparity, oviparity, and viviparity. Ovoviviparity is when the embryos develop inside eggs within the mother's body until they are close to hatching. The snakes are born live, but there is never a placental connection to the mother, and the embryos are nourished by egg yolk. Many, but not all, pit vipers are ovoviviparous. Oviparity is when the snake lays eggs, with all development occurring within the egg outside of the body of the mother. Oviparous snakes include Pythons (*Python* spp.), Kingsnakes (*Lampropeltis* spp.), Pine Snakes (*Pituophis* spp.), Milk Snakes (*Lampropeltis* spp.), and Corn Snakes (*Pantherophis* spp.). Finally, viviparity is the development of the embryos inside of the mother, where the mother has a connection to the young and is able to provide the embryos with nourishment and remove waste, resulting in live birth of young snakes. Viviparous snakes include Seasnakes (*Pelamis* spp.), Green Anacondas (*Eunectes murinus*), and Boa Constrictors (*Boa* spp.).

Quick Facts!

Venom

Only one-fifth of all snake species have the ability to produce venom in order to kill or subdue prey for consumption; this includes elapid, viperid, colubrid and hydrophiid snakes. Consuming a prey item that does not struggle requires less energy than eating moving prey. In addition, some snake venom contains enzymes that aid in digestion (such as Puff Adders [*Bitis arietans*] and Mulga or King Brown Snakes [*Pseudechis australis*]). All snakes within the Viperidae (such as Fea's Viper [*Azemiops feae*]) and Elapidae (such as Taipans [*Oxyuranus* spp.]) families produce venom, as do many colubrids (such as Black-headed Snakes [*Tantilla* spp.], Cat-eye Snakes [*Leptodeira septentrionalis*], and Boomsnangs [*Dispholidus typus*]). Venom is produced in the venom glands and delivered to the fangs when the snake bites its prey. The venom is then either delivered through a closed canal in the center of the fangs, or flows through grooves on the fangs into the injection site. Some species, such as Indonesian Cobra (*Naja sputatrix*), can also spit venom in intricate patterns; however, this is primarily a defense mechanism and not a method of subduing prey.



Eastern Coral Snake (*Micrurus fulvius*)



Copperhead (*Agkistrodon contortrix*)

No Legs?!

One distinguishing trait that separates snakes from most other reptiles is the lack of legs. Snakes can slither, climb, swim, burrow....but how? Here are three of the ways snakes can move terrestrially.

Lateral Undulation	Sidewinding	Reticular Movement
<p>Lateral undulation is the movement most people think of when they imagine a snake moving. The snake employs muscles, scales, and resistance points on the ground surface to move. The process starts with the snake using its muscles to bend its body, and then using the scales to push into resistance points on the ground so it can move forward. Most colubrid snakes employ this type of movement.</p>	<p>Sidewinding is similar to lateral undulation, except that it relies more on muscle and less on scales and resistance points. The snake contracts its muscles to form an s-shape, then flings its body from side to side to move forward. With the sidewinding technique, all but two points of the snake's body are off the ground. There is a species of snake named after this type of movement - Sidewinders (<i>Crotalus cerastes</i>).</p>	<p>Reticular movement is when the snake moves straight forward by gripping the ground or rough surface with its belly scales and moving its body up and down in arches to move forward. Reticular movement is similar to the movement of an inch worm, but without legs and much less exaggerated. An example of a species that employs this type of movement is Red-tailed Boa (<i>Boa constrictor constrictor</i>).</p>

Common Threats to Snakes

Habitat Loss and Fragmentation

Like most species, snakes suffer from loss and fragmentation of habitat. This is possibly the greatest overall threat to snakes. All snakes are predators. They need to hunt for prey, and may move widely across a fragmented landscape. In the process, they come in contact with many physical barriers, such as roads with fast-moving traffic, open areas where no cover is available, and other hazards that contribute to their decline.

Many species suffer from habitat loss. For example, the Southeastern Coastal Plain of the United States, 98% of historical Longleaf Pine (*Pinus palustris*) habitat no longer exists, causing declines in snake species such as Southern Hognose Snakes (*Heterodon simus*), Eastern Diamondback Rattlesnakes (*Crotalus adamanteus*), Pinesnakes (*Pituophis melanoleucus*), and Eastern Indigo Snakes (*Drymarchon couperi*), which are listed as threatened under the U.S. Endangered Species Act (ESA).

Where rainforest once covered over 14% of the Earth's surface, it now covers only 6% and is still declining, thereby affecting many species like anacondas, pythons, Golden Tree Snakes (*Chrysopelea ornata*), coral snakes (*Micrurus* spp.), Mangrove Catsnakes (*Boiga dendrophila*), and Bushmasters. Many of the majestic ecosystems that snakes inhabit are in decline, and what remains of these ecosystems is often very fragmented or degraded. Known for their incredible biodiversity, the loss of any patch of rainforest can result in the loss of many species, not only snakes, but lizards, frogs, insects, birds, and plants, some of which may be unique (endemic) to a single patch.



Rainforest in Costa Rica.

Photo Credit: Chris Jenkins



Burmese Python (*Python molurus bivittatus*) in Bangladesh.

Over-collection

Some snake species are so charismatic and unique that they are heavily exploited for the pet and skin trade. For example, in 1997, King Ratsnakes (*Elaphe carinata*) were one of the most numerous reptile imports into the United States for the pet and skin trade; China alone exported 37,425 King Ratsnakes to the U.S. that year.

The Convention on International Trade in Endangered Species (CITES) recorded the trade of three snake species in Southeast Asia, the Oriental Ratsnake (*Ptyas mucosus*), the Reticulated Python (*Python reticulatus*), and Indonesian Cobra, and determined that these species are heavily collected and exported for food, traditional medicines, skins to make fashion accessories and footwear, and for pets.

Snakes are often not managed appropriately for sustainable use, unlike most game birds, mammals, and fish. Yet collection and take is often allowed for snakes for personal, commercial, and scientific purposes, sometimes without permit, or reporting requirements or collection limits on species, sex, size or geographical areas. Unregulated use and collection of wild snake species can result in undetected declines. Overcollecting is manageable threat. It is possible to implement collection regulations that still allow the sustainable use of snakes.

Common Threats to Snakes

Disease and Parasitism

Like most species, snakes can suffer from disease and parasitism both in captivity and in the wild. An example of this is the *Chrysosporium* fungus that is currently affecting Timber Rattlesnakes (*Crotalus horridus*) in the Northeastern United States. This sometimes-fatal fungal infection is commonly found in captive snakes, but is now being found in snakes in the wild. It is thought that the fungus causes lesions, most often on the head and face of the snake, and weakens the snake's immune system, potentially inhibiting its ability to hunt or ingest prey.

every hour
the world
LOSES
240 acres
of HABITAT

IN ONE STUDY
8 IN 10
DRIVERS
SWERVED TO HIT
WHAT THEY THOUGHT
WAS A SNAKE.

ONLY
.04%
OF FEDERAL AND
STATE CONSERVATION
SPENDING FOR AT RISK
SPECIES IS ALLOCATED
FOR SNAKES.

Graphic Credit: Mike Jackson

Human Persecution

Human persecution of snakes is rampant, particularly against venomous snakes. Many snakes are killed, regardless of whether or not they are venomous, because people tend to have an irrational fear of these creatures. It is not uncommon to hear, "the only good snake is a dead snake." An excellent example of the extent of human persecution against snakes involves a study conducted in Kansas, where 8 out of 10 drivers were found to intentionally hit snakelike objects placed on the road. It is critical to educate people on the value of snakes, how to identify venomous and non-venomous species, how to avoid being bitten and, that when a snake is encountered, to leave it alone.

Photo Credit: Heidi Hall



Venomous snake species in an enclosure.

Rattlesnake What?! Why?

Rattlesnake Roundups are events, often held throughout the southern United States, where wild rattlesnakes are caught and collected to display. These snakes are very often killed for food, skins, or rattles, or sold to pharmaceutical companies to be milked for their venom. It is estimated that approximately 15% of the 125,000 rattlesnakes caught are killed during these events. Killing adult rattlesnakes, which is the most common age class collected for these events, can put a tremendous strain on the population, as they reach sexual maturity late in their life and may breed only once every three years. Taking adults out of the population means that fewer animals remain to reproduce. In addition, these species are collected by pouring gasoline in dens or burrows to get the rattlesnakes to come out. This method is harmful to many other species that inhabit those same refugia, including the Burrowing Owl (*Athene cunicularia*) and the federally threatened Gopher Tortoise (*Gopherus polyphemus*) and Eastern Indigo Snake (*Drymarchon couperi*). But there are some success stories. In 2011, the Claxton Rattlesnake Roundup in Georgia (United States) changed the tone of this event to the first ever Rattlesnake and Wildlife Festival. The event now focuses on the value and beauty of rattlesnakes and educates the public about their biology and the need for these species to maintain our ecosystems!

Common Threats to Snakes

Photo Credit: Jenny Daltry



Antiguan racer (*Alsophis antiguae*).

Global Climate Change

Because snakes are ectotherms (obtaining most of their body heat from the environment), they make great indicators of climate change and how it will affect other species. Studies indicate that snakes will be negatively affected by climate change because they cannot evolve or migrate fast enough to keep up with the changes in suitable habitat. For example, a study conducted by the University of Indiana Bloomington found that, although an initial increase in temperature may expand the range of Timber Rattlesnakes in the eastern United States, a temperature increase of 6.4 degrees Celsius would eventually displace this species from its range entirely. Some species, such as the rattlesnakes of the Sky Island Mountains of southern Arizona and New Mexico, occupy a very limited area where habitat may be reduced or altered faster than these species can adapt, if they can adapt at all, while their dispersal in search of new habitats may be blocked by the inhospitable lower-elevation desert habitats surrounding the peaks.

Invasive Species

The introduction of invasive species into an ecosystem can negatively impact snakes. For example, the Antiguan Racer (*Alsophis antiguae*), a once abundant species on Antigua in the Eastern Caribbean, is now considered “Critically Endangered” by the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. The introduction of the predatory Asian mongoose (*Herpestes javanicus*) and black rats (*Rattus rattus*) nearly decimated this species, with only 50 individuals once remaining. The Antiguan Racer Conservation Project was created to implement conservation actions to save this species, one of which was the eradication of rats and mongoose from a number of islands within the range of the snake. As of December 2012, after successful eradication efforts and a reintroduction program for this species, there are now just over 890 Antiguan Racers in the wild.

The introduction of invasive plant species can also be detrimental to snake species. For example, disturbance in the sagebrush steppe ecosystem in the western United states allows for the invasion of Cheatgrass (*Bromus tectorum*), a nonnative grass. It has been found that the presence of Cheatgrass in these ecosystems reduces the numbers of small mammals, limiting prey availability for species such as the Great Basin Rattlesnake (*Crotalus oreganus lutosus*), which can lower their body condition and affect reproduction.



Photo Credit: Pete Oxford

Twinspot Rattlesnake (*Crotalus pricei*), a rattlesnake of the Sky Islands.

A Few Snake Conservation Efforts

Conserving the Lake Erie Watersnake

An example of a snake conservation success story can be found in the Lake Erie Watersnake (*Nerodia sipedon insularum*), which was removed from the U.S. Endangered Species List in August of 2011, after being listed in 1999. Found only on the islands of Lake Erie, this species was most threatened by human persecution in the form of intentional killing and loss of habitat due to shoreline development. The federal government and state agencies implemented intensive public outreach programs aimed at educating people about the importance of this species to local ecosystems and afforded protection to the remaining habitat used by Lake Erie Watersnakes. The local community became enthusiastic about the protection of this species when informed of its importance in keeping in check populations of Round Gobies (*Neogobius melanostomus*), an invasive fish species in Lake Erie.



Respect The Snake is dedicated to educating people about the Lake Erie Water Snake (often called LEWS) through good scientific research and continued public outreach. www.respectthesnake.com



Photo Credit: Beth Schlimm

Eastern Indigo Snake (*Drymarchon couperi*)

Conserving the Eastern Indigo Snake

The Eastern Indigo Snake was listed as threatened by the U.S. Fish and Wildlife Service in 1978. By 2008, little had been done to conserve this species, prompting The Oriante Society to start a collaborative effort to save the Indigo. The Oriante Society brought together private stake-holders, state and federal agencies, universities, zoos, and other nonprofits for a round-table discussion to determine the conservation needs for Indigos. This effort has resulted in the development of a captive-breeding program for future reintroductions of these snakes into areas where they have been extirpated, the reintroduction of Eastern Indigos into Alabama, an extensive inventory and monitoring program for this species, identification of over 14,568 hectares of Indigo habitat to be managed and restored, and multiple research projects that are answering the critical questions needed to conserve the species.

Conserving Armenian Vipers

Viper species in Armenia, eastern Turkey, Azerbaijan, and northwest and northeast Iran, have experienced an 88% decline in the last two decades. In 2004 The Saint Louis Zoo's WildCare Institute began efforts to conserve Armenian Vipers (*Montivipera raddei*) through the Center for Conservation in Western Asia. The Center is using radio-telemetry to study the spatial ecology and habitat use of Armenian Vipers in developed areas as well as in natural landscapes. This research has resulted in the enlargement of a State Forest Reserve and the establishment of Zangexur Sanctuary and Arevic National Park in Armenia. The Zoo plans to use its work on Armenian Vipers as a model to research the needs of other mountain vipers.



Photo Credit: Mark Wanner

Armenian Viper (*Montivipera raddei*)

Snake Conservation Needs

Further Research

In order to conserve snake species, we need to learn more about these often secretive animals. Currently, in comparison to research on other vertebrates, very few organizations or institutions do research on snake species. In addition, snakes are one of the most difficult groups of animals to study, and new techniques are needed that will allow us to effectively study or monitor snakes, especially small species and young age classes.



Timber Rattlesnake (*Crotalus horridus*) with external radio transmitter.

Habitat Protection and Restoration

Habitat loss and fragmentation are possibly the biggest threats to snake populations globally. Direct mortality from roads, behavioral changes, and forced interactions with threats such as humans, farm equipment, and pets put snake populations at serious risk. Currently most protected land in North America is in remote areas and mountains, but much of the snake diversity occurs in lowlands, which are the areas that are often most heavily developed for cities, towns and agriculture. It is critical that we conserve, restore, and manage more snake habitat, especially the much-altered lowland areas.



Prescribed fire can be an effective habitat restoration tool.

Captive Propagation

Some rare and declining snake species simply do not have large enough populations to remain viable on their own, even if environmental conditions were suitable. In these cases, captive propagation and carefully planned reintroductions may be the only means to restore critically threatened snake species.



Louisiana Pinesnake (*Pituophis ruthveni*), a species that may benefit from captive conservation efforts.

Reintroductions

Along with the occasional need for captive propagation comes the need to reintroduce snake species back into areas where they have been extirpated, particularly when habitat fragmentation and loss is so severe that it would be next to impossible for a species to naturally recolonize a portion of its historical range. It is also important to determine the effectiveness of reintroduction programs on snake populations and the suitability of a release site prior to any reintroduction effort. Reintroducing a species back into an area is ineffective when factors that caused the species to initially decline are not mitigated prior to reintroduction efforts.

Policy and Regulations

Most regulatory wildlife agencies allow various uses of snakes for personal, commercial, scientific, or educational purposes. However, many wildlife management agencies don't have adequate regulations in place to track these uses or their resulting impacts on native wild snake populations. A systematic assessment* of current regulations has been completed, and now work is needed to improve regulations on the use, import/export, and transfer of snakes. For example, Sonoran Mountain Kingsnakes (*Lampropeltis pyromelana*) are protected in Utah and Nevada, yet collection for personal use is allowed in Arizona and for personal and commercial use in New Mexico. Another example is the Black-necked Gartersnake (*Thamnophis cyrtopsis*), which is protected in Colorado, Oklahoma, and Utah, yet commercial collection is allowed in New Mexico and Texas. There are numerous examples of the need for regulations, law enforcement, associated funding and the need for states to work together to ensure the range-wide survival of these species.

*Nanjappa, P. and P. Conrad, Ed. 2011. *State of the Union: Legal Authority Over the Use of Native Amphibians and Reptiles in the United States. Version 1.03. Association of Fish and Wildlife Agencies, Washington, D.C.*



Sonoran Mountain Kingsnake (*Lampropeltis pyromelana*)

Outreach

Educating the public on the importance and value of snakes may be the most important conservation tool of all. The fact is, organizations and agencies can implement the best conservation actions to save a snake species, but if the public does not support or understand the effort, it cannot be effective. Human persecution of snakes is rampant, and people must be made aware of the importance (and most often, harmlessness) of snakes to make any conservation effort effective.



Snake awareness and identification outreach efforts in Bangladesh.

Conservation Funding

Though very few organizations actually implement snake conservation, finding funding for these types of efforts is extremely difficult. The conservation of snakes is seriously overlooked and underfunded.

Snakes Do A Great Deal For Us - What Can You Do For Snakes?

- Become a member of a snake conservation group
- Join a herpetology club
- Educate the public about the need for snake conservation
- Work to create or protect snake habitats in your region, city, or your own backyard
- Submit your snake observations to the Natural Heritage Program
- Stay up-to-date and participate in public forums regarding snake regulations
- Don't collect snakes from the wild

Become a member of a Snake Conservation Group!

Here a few suggestions:

PARC

The Oriante Society

Center for Snake Conservation

North American Field Herping Association

International Reptile Conservation Foundation

**Or, join your local or state herpetological
conservation group!**

Photo Credit: J.D. Willson



Cornsnake (*Pantherophis guttatus*)

Learn More About Endangered Snakes

Read *State of the Union: Legal Authority Over the Use of Native Amphibians and Reptiles in the United States (Appendix C)* to learn more about what snakes are considered endangered where you live and whether or not you can collect a species: http://www.parcplace.org/images/stories/YOS/SOU_AppC_Snakes.pdf

Log on to the United States Fish and Wildlife Service to learn more about endangered snakes in the United States: <http://www.fws.gov/endangered/>

Log on the International Union for Conservation of Nature (IUCN) Redlist to find out more about endangered snakes globally: <http://www.iucnredlist.org/>



Photo Credit: Charles Peterson

Nightsnake (*Hypsiglena spp.*)

Submit Your Observations!

There are many ways to submit your snake observations so that the data can be used to help conserve these species. Here are a few places you can submit data:

- Project Noah: <http://www.projectnoah.org/>
- H.E.R.P. Database: <http://www.naherp.com/>
- The Center for Snake Conservation Yearly Snake Count: <http://www.snakecount.org/submit-results>
- Or, find your state Natural Heritage Program: <http://www.natureserve.org/visitLocal/>

Spread the Word this Year - Snakes Have Value!

Ecological Value	Snakes, like all other species, are an important part of their native ecosystems. Snakes act as both predator and prey, often feeding on prey such as small mammals, birds, amphibians, fish and insects. Also, snakes serve as prey for other species such as birds, other snakes, and medium-sized mammals. Removing snakes from the food-web can cause a chain of events that leads to the decline or overpopulation of other animals, which can contribute to changes in the composition and structure of vegetation, which result in an altered and often degraded ecosystem.
Medicinal Value	We are only now scratching the surface of the many uses of snake venom in the world of medicine. For example, Malayan Pit Viper (<i>Calloselasma rhodostoma</i>) venom, in the form of a drug called Ancrod, is being used to break down blood clots. This drug could reduce or eliminate the need for surgical procedures for those who are prone to or who have already had strokes. Also, Copperhead (<i>Agkistrodon contortrix</i>) snake venom shows promise in the fight against breast cancer in a drug that inhibits the development of blood vessels that supply tumor cells, retarding their growth and ability to spread.
Utilitarian Value	Many animals feed on snakes, but perhaps more importantly, all snakes are predators and control the populations of many species that are thought of as pests. For example, many snake species feed on rodents such as young mice and rats. These are species that reproduce rapidly and often become a problem in households and agricultural areas. Some snake species consume garden pests, such as slugs and caterpillars. Removing snakes from these ecosystems can allow pest species to overpopulate and would require more costly controls, such as chemicals and traps, to balance the system.
Educational Value	Snakes are a great tool for teaching people the value of conservation. Children are often fascinated by snakes. Snakes used in educational displays evoke a great deal of emotion and can give people an opportunity to observe, touch, and interact with an animal they don't get to see every day—and perhaps begin to lose their fear of the creatures. This creates a fantastic environment for people to learn more about and appreciate the value of these species. Snakes are also model organisms for the study of certain aspects of biology such as thermal ecology, reproductive biology, digestive physiology and foraging ecology.
Aesthetic Value	Snakes are very aesthetically appealing, with a variety of patterns and colors and graceful movements. Imagine yourself in a rainforest in Indonesia—lush trees and the smell of the damp earth. Complete the picture with a beautiful Green Tree Python (<i>Morelia viridis</i>) draped over a branch, its lovely scales shimmering like emeralds. At that moment, there could be no denying the beauty of these animals and the thrill of seeing a snake wild and free in its natural habitat. In addition, because they are so important to our ecosystems, snakes often increase or maintain the aesthetic appeal of the environment they inhabit, keeping the ecosystem in balance.
Intrinsic Value	Just as the definition implies, snakes have intrinsic value, meaning they are important just because they are, because they belong here like all other species on our planet, and we, as fellow animals, do not have the right to take part in their decline. Snake species deserve to flourish just as all other species do, because they belong in their natural habitat.

For more information go to www.yearofthesnake.org
For all inquiries contact PARCyearofthesnake@gmail.com

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