

Wildlife Services

Protecting People
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Factsheet

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Brown Tree Snake an Invasive Reptile



Wildlife Services (WS), a program within the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), provides Federal leadership and expertise to resolve wildlife conflicts threatening the Nation's agricultural and natural resources, human health and safety, and property.

WS' activities on Guam focus on control and containment of the invasive brown tree snake. WS conducts an operational program aimed at preventing the spread of the snake from Guam and protecting vital economic and ecological resources on the island.

The brown tree snake (*Boiga irregularis*) was accidentally introduced to Guam in the late 1940s or early 1950s, probably from the Solomon Islands. Native to northeastern Australia, eastern Indonesia, and Melanesia, the brown tree snake has significantly damaged the economy and ecology of Guam. WS' cooperative program seeks to control snake populations on Guam and prevent its spread throughout the Pacific Rim.

Biology

About 15 inches in length at hatching, brown tree snakes may reach 10 feet in length as adults; however, most snakes on Guam are 3 to 4 feet long. The brown tree snake is rear-fanged and considered mildly venomous. It uses both constriction and venom to help immobilize its prey.

Brown tree snake bites will not penetrate most clothing. Because of the fangs' position and relatively small size, a brown tree snake must chew to allow its fangs to penetrate skin. Venom enters bite victims along grooves in the snake's rear fangs.

Although the brown tree snake will readily strike when aggravated, it does not present a danger to adults. Infants less than 6 months old may however be at risk from both bites and constriction; young bite victims should receive immediate medical attention.

The brown tree snake is an adept climber and inhabits trees, shrubs, and forests. They spend most days coiled in cool dark locations, such as treetops or in rotted logs. At night, they become active and search for prey.

The brown tree snake is abundant on Guam, with localized estimates reaching 20 or more snakes per acre of jungle. These population density estimates are among the highest snake densities ever recorded. The only other snake on Guam is the blind snake (*Ramphotyphlops braminus*), a harmless nonnative snake that resembles a worm in size and shape.

The invasive brown tree snake, primarily nocturnal, is an adept climber.



Damage

The brown tree snake has caused extensive damage to Guam. It is responsible for numerous power outages across the island each year. An opportunistic feeder, eating whatever is available, this species has caused the extinction of most of Guam's native forest birds and lizards.

As native bird populations have declined on Guam, the snake now feeds on introduced lizards and birds, rodents, and bird eggs. In its native range, brown tree snake populations are kept in check through natural processes, such as disease, food competition, and predation. Similar processes likely occur on Guam, but they are inadequate to control the snake's population.

Conflicts with People

Although brown tree snakes are abundant on Guam, most people rarely encounter a live snake. The snakes do not hang from trees in giant bunches, nor do they search out people to bite. Brown tree snakes may be attracted to residential areas by abundant rodents, lizards, poultry, or debris that serves as habitat for snake prey; they occasionally enter buildings while searching for food. Simple precautions, such as keeping doors and screens secured, screening air ducts and pipes that open outdoors, keeping garbage and pet food in secured containers, and removing surrounding vegetation may make buildings less attractive to brown tree snakes.

Wildlife Services Research and Operations

Since 1993, WS has conducted ongoing operations to reduce damage caused by the brown tree snake. WS' National Wildlife Research Center conducts research to identify effective toxicants, repellants, and trapping methods. On Guam, WS has more than 60 personnel, including 17 canine-detector teams and 4 employees who manufacture snake traps. Using specially designed traps, hand capture, and oral toxicants, WS personnel remove an average of 7,000 brown tree snakes annually.



WS has developed the current standard for brown tree snake traps.

In 2001, WS began integrating the use of acetaminophen (the active ingredient in many over-the-counter pain medications) in its efforts. WS research has shown acetaminophen to be an effective oral toxicant for the snakes. In 2010, WS conducted a pilot project involving aerial distribution of the toxicant in baits placed in the upper forest canopy where the snakes spend much of their time.

These efforts resulted in the first hatch and rearing of the endangered Marinas crow in the wild in 25 years; the project also helped increase populations of the endangered Marina grey swiftlet.

Preventing its Spread

Without cooperative control efforts, the problems caused by the brown tree snake could spread. Snakes have been sighted on many other Pacific islands, possibly having arrived through cargo originating in Guam. Numerous sightings on the island of Saipan suggest a snake population may be established on this island too. Together, these sightings clearly demonstrate the risk of unintentionally transporting brown tree snakes to vulnerable locations and the potential for new populations to develop.

WS conducts operations and research to identify effective toxicants, repellants, and trapping methods.

WS coordinates operational efforts on Guam to keep snakes from reaching other destinations. WS personnel trap snakes in high-risk areas, use trained snake-detector dogs in cargo, conduct night-time spotlight searches, and carry out public education efforts to achieve this goal. When departing Guam, residents can help prevent the brown tree snakes' spread by carefully inspecting their belongings, especially outdoor goods, when packing.



Canine teams are available to search cargo leaving the island to prevent the reptiles' spread.

Additional Information

For more information about the brown tree snake, contact the Guam WS office at (671) 635-4400 or the Hawaii WS State office at (808) 838-2841. You can also visit the WS Web site at www.aphis.usda.gov/wildlife_damage.



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