



Hawaii Invasive Species Council

“The \$ Impact of the Brown Tree Snake in Hawaii”

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A new study published in January's *Pacific Science* journal reveals the potential economic impact the brown tree snake would have if it became established in Hawaii. While populations of this invasive species are not yet known in the Islands, the published analysis lays out risk factors for colonization and provides useful information for policymakers and natural resource managers to consider in prevention and control efforts.



The brown tree snake could wreak severe economic damage if it were to become established in Hawaii.

The study looks at annual costs of medical treatments, power outages, and decreased tourism to Hawaii by extrapolating data using Guam as a case study. There, the brown tree snake is responsible for the degradation of native biodiversity and lies at the heart of severe socioeconomic impacts.

A draft environmental impact statement estimates a planned military buildup of 8,000 U.S. marines and an additional 9,000 dependants on Guam, plus a construction workforce numbering in the thousands. The additional influx is expected to increase Guam's current population of 178,430 by more than 79,000 by the year 2014 on an island just over 341 square miles in size.

“We can expect increased movement of workers, raw materials and goods back and forth through Hawaii associated with population growth and construction on Guam,” said Earl Campbell, with the U.S. Fish and Wildlife Service. “This increase in movement increases the risk factors for the brown tree snake to enter Hawaii.”

Also expected are changes in shipping and airline routes to and from Hawaii. Currently, no laws exist to require the inspection of cargo or conveyances leaving Guam.

If the brown tree snake were to become established in Hawaii, high estimates of its potential economic damage could be as high as \$2.14 billion. Ranked according to annual costs, tourism would suffer the greatest impact with loss estimates of almost \$1.4 billion; power outages could cost the state \$761 million; and medical treatment could reach as high as \$383,040.

The study's authors assumed the probability of the brown tree snake to invade, establish and cause economic damage to Hawaii at 100 percent. While medical and power outage costs on Guam were used to project potential costs in Hawaii, tourism impact estimates were handled separately.

Thought by researchers to have been a stowaway aboard U.S. military equipment cargo ships from the New Guinea area, the brown tree snake established itself on Guam after WWII. Its quickly growing populations wiped out flying foxes, small terrestrial mammals and lizards and drove 10 of 13 native bird species to extinction.

Listed among the top 100 worst alien invasive species worldwide, the brown tree snake thrives in tropical and subtropical regions throughout the world where it can be found in natural forests, grasslands, and agricultural and urban areas. Like Guam, Hawaii offers suitable climatic conditions and habitats with plentiful prey while having no predators that might keep the brown tree snake in check. Eight brown tree snakes have been found in military cargo over the past decade.

The study highlights the challenges faced by Hawaii Department of Agriculture quarantine inspectors whose recent budget cuts have eliminated 21 positions statewide. Still, the current levels of inspectors using existing inspection facilities are tasked with handling the increase in military and civilian cargo arriving from Guam. HDOA's Detector Dog Program, previously used to inspect 100 percent of incoming military and civilian flights from Guam to help sniff out onboard snakes, also has been eliminated.



Call the Pest Hotline to report invasive pests.