



Summary of Key Points from the Brown Treesnake Technical Committee Meeting Hilton Hawaiian Village, Honolulu, Hawaii, April 6-8, 2005

Prepared April 2005 by Christy Martin and Priscilla Billig, Coordinating Group on Alien Pest Species for information purposes only—this draft has not been edited or approved by meeting participants.

HISTORY

- Brown treesnakes (BTS) were accidentally introduced to Guam sometime between the end of WWII and 1952, probably as a stowaway in ship cargo originating from the South Pacific.
- They spread across the entire 549 sq mile island within 20 years and are responsible for the extinction or local extirpation of nine of the 12 native forest birds, two of 11 native lizards on Guam, and have contributed to the decline of native fruit bats. Within 20 years they decimated Guam's native bird, bat, and lizard fauna. In the absence of preferred warm-blooded prey, BTS now prey on introduced rats and lizards, which allow the snakes to maintain abnormally high population densities, about 55 snakes per hectare.
- BTS cause power outages about every four days; consume domestic birds and pets; and cause emotional and physical harm with their venomous bites, particularly to small children.

SUMMARY OF FINDINGS: REVIEW OF BROWN TREESNAKE PROGRAMS

Michael Fall, U.S. Dept. of Agriculture, Animal Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center, Fort Collins, Colorado

Full text of the review can be found at

<ftp://ftpext.usgs.gov/pub/cr/co/fort.collins/BTS/Brown%20Treesnake%20Review%20Panel%20Report%20March%202005.pdf>

Required

- Proactive & sustainable approach
- Long-term & holistic vision

Themes to convey to managers

- Need cooperation and support from military at highest levels
- Need to engender a sense of ownership to the problem and solutions; need to have agencies state their support and intentions via clear agency policies.
- Need to elevate issues organizationally
- Multi-agency cooperation/ private industry involvement

Planning

- Continued and expanded interagency approach
- Update and define objectives & priorities (longterm interdiction, control, eradication); identify essential tasks

Funding

- Military participation not adequate
- Office of Insular Affairs (OIA) — impressive support
- BTS work has been funded thus far by short-term grants. Reliable, adequate and sustainable funding is needed.

- Make BTS part of operating in risk area

Research

- Have high quality research being conducted, but need to establish necessary funding
- Emphasize control, eradication, emergency methods, strategies
- Population dynamics, surveillance & detection, bait attractants & delivery systems

Interdiction

- Need to have a formalized legal basis ensuring pre-departure inspection of cargo
- Stabilize funding & expand where necessary to attain full inspection services

Control & Eradication

- Technologies available for widespread control of BTS on Guam. However, delivery systems for toxicants are inadequate and need further research
- Diverse private lands make widespread BTS control difficult
- Infrastructure & planning needed at ports, airports to exclude BTS from entering areas

Regional topics

- Expand rapid response program for snake sightings on other Pacific Islands
- Emphasize outreach, awareness programs to ensure timely reports

Restoration

- Restore bird population where BTS and other predators are excluded
- More biological information needed

Management & accountability

- More formalized coordination and interagency cooperation
- Emphasize project management
- Progress review

Conclusion

- BTS program is a successful model with just a few pieces out of place
- Future success requires leadership, cooperation, coordinated political support at federal level
- More biological research needed

USDA APHIS—WILDLIFE SERVICES, GUAM PROGRAM UPDATE

Dan Vice, U. S. Department of Agriculture, Animal Plant Health Inspection Service, Wildlife Services, Guam

Program Objectives

- Prevent spread of BTS from Guam through commercial and military export cargo
- Protect island resources (native wildlife, health & safety, electrical utilities)

Program Summary

- Trapping program around all ports of exit (air & sea). Traps catch 3000-4000 snakes/year.
- Trapping around power transfer stations catch about 1000 snakes/year—only 1 snake-related power outage since this part of the program began. Paid for by the Guam Power Authority.
- Physical searches of fences along all ports of exit. 1500-2000 snakes per year.
- Canine inspections of containers and crafts find 4-6 snakes/year.

Update

- Funding shortfall—FY 2005 & funding shortfall expected—FY 2006
- Between October 2004-February 2005: 127,000 lbs. of household goods departed Guam without canine inspection; 91 aircraft departed without canine inspection

- Have been able to communicate with receiving ports RE: missed inspections.
- Have worked out agreement with Anderson Air Force Base for kennel space on base and are receiving in-kind support in this area

HAWAII DEPARTMENT OF AGRICULTURE (HDOA)

Neil Reimer, Hawaii Department of Agriculture Plant Quarantine Branch Manager

Program Objectives

- Screen incoming cargo and crafts for BTS using canine and visual inspections
- Provide a second line of defense to prevent the introduction of BTS to Hawaii

Program Summary

- There have been 8 BTS interceptions in Hawaii since 1991—none have been found in the 9 years that USDA-Wildlife Services has been conducting their program.

Update

- HDOA has been able to rebuild dog teams from previous cuts and vacancies—currently have 4 canine teams and two additional teams in training
- Rapid response capabilities improving. Have staff on each island trained in BTS rapid response
- Airport worker training to be resurrected after six-year hiatus (exception: Kahului)

WILDLIFE SERVICES/HDOA PILOT PROJECT: ASSESSING THE NEED FOR INSPECTION AND CERTIFICATION OF OUTBOUND SHIP CARGO

Program Summary

- With funds from the Hawaii Invasive Species Council, HDOA and Wildlife Services are conducting a pilot project to quantify the effort involved in a mandatory inspection program. This study arose in response to legislation being considered by CNMI and the State of Hawaii requiring inspection and certification of cargo leaving Guam.

NATIONAL WILDLIFE RESEARCH CENTER/UNIVERSITY OF HAWAII ECONOMICS ASSESSMENT

Stephanie Schwiff, NWRC; Kimberly Burnett, et al. University of Hawaii at Manoa Department of Economics

Update

- A UH economic assessment placed the cost if BTS were introduced to Hawaii at between \$28.5 and \$400 million annually. An assessment is underway to look at the cost of prevention as an annual cost, compared to the cost of introduction over time.
- NWRC found that the cost to Guam Power Authority for snake-related outages was underestimated in previous studies; and that the number of snake-bite related visits to Guam Memorial Hospital are higher than previously thought (about 13/month, at a mean cost of \$256.40 per visit). Translated to Hawaii's economy, this revised information along with a potential 1% decrease in tourism to Hawaii due to BTS (1% drop in tourism estimated by Hawaii Visitors Bureau economist) would put the **actual cost of BTS at \$1.7 billion per year if introduced to Hawaii.**

THE NATIONAL WILDLIFE RESEARCH CENTER—AN AGENCY OVERVIEW OF BTS RESEARCH

Kathleen Fagerstone, et al. U.S. Department of Agriculture, Animal Health Inspection Service, Wildlife Services, National Wildlife Research Center (NWRC)

Program Objective

- Conduct research on tools, methods, strategies for controlling & confining BTS and related topics using an integrated pest management approach

Program Summary

- Chemical control methods EPA approved (March 2003) acetaminophen as an oral toxicant
- Dispersal prevention
- Control tools: fumigants, repellents, toxicants, reproductive inhibitors

Update

- Research shows that female BTS may not have long-term sperm storage as seen in some other types of snakes. It appears that females mate just prior to ovulation and the period of sperm storage is therefore relatively brief.
- Research into the best way to deliver acetaminophen to BTS showed that dead mice are more effective than other attractants. This is a problem that requires ongoing research, as the mice are expensive and highly offensive to field personnel that are required to remove unconsumed mice from bait stations.
- Helicopter drop of dead mice with acetaminophen was tested for widespread delivery that could lead to control or eradication. It was found that coconut crabs and other animals would take the bait unless acetaminophen-treated mice could be hung in trees where the snakes feed. A biodegradable parachute system is now being tested.
- Research shows that male BTS consistently have high hormone levels after reaching maturity (perhaps 3 years)—therefore, males are more appropriate for “birth control” than female BTS. Studies are ongoing with thiotepa, administered orally via dead mice.

USGS—BIOLOGICAL RESOURCES DIVISION FORT COLLINS SCIENCE CENTER

Gordon Rodda, et al., U.S. Geological Survey, Biological Resources Division, Fort Collins Science Center

Program Objective

- Provide research into BTS biology with relation to capture, control and rapid response issues

Update

- Capture-recapture study shows that trapping tends to capture the same snakes, while other snakes go uncaptured or take a long time to trap. Therefore, we may be overestimating the capture probability of BTS, resulting in under-estimating abundance.
- Research ongoing with a new BTS barrier, “Wondertec”, which is 20% less expensive to build than pre-stressed concrete designs.
- Two dogs are currently being trained to assist in woodland BTS searches. The “Dogs in the Woods” project would enable rapid response teams added assistance in finding snakes in snakeless areas (such as Hawaii).

DoD

Pete Egan, Department of Defense, Armed Forces Pest Management Board

Program Mission

- Sustainable environment

Current Problem

- No political support at administrative level; new approaches will be attempted for more stable funding

OFFICE OF INSULAR AFFAIRS

Tiffany Taylor, Office of Insular Affairs, Department of Interior, Honolulu

Update

BTS activities—FY 2005

- \$2,808,828 Total
- Hawaii: \$250,000

GUAM DIVISION OF AQUATIC AND WILDLIFE RESOURCES

Diane Vice, Guam Department of Agriculture, Division of Aquatic and Wildlife Resources, Guam

Update

- Have been captive-bred endangered Guam rails and are releasing them on Rota, CNMI. Had planned to eventually release captive-raised birds to a snake-exclusion zone called “Area 50”, that had been set up on Anderson Air Force Base. Anderson staff closed Area 50 last year, although a new location has just been negotiated for the future.
- Efforts are underway to fund rodent control and the subsequent introduction of endangered birds to Cocos Island, a snake-free islet off the coast of Guam where seabirds have been able to nest. The islet would be open to visitors and tourists, as it is now.

COMMONWEALTH OF THE NORTHER MARIANNAS ISLANDS BTS PROGRAM

Nathaniel Hawley, CNMI, Department of Land and Natural Resources, Division of Fish and Wildlife, Saipan

Update

- Strong education/public awareness efforts—Public-private partnership between Verizon and CNMI DLNR DFW has resulted in widespread awareness and support. Before campaign, reports of sightings would be made nearly 2 weeks after the incident. Advertisement of new BT-SNAKE hotline (287-6253), radio jingles, cell phones, t-shirts, stickers, and other items have resulted in a dramatic decrease in the time from when a snake is first sighted to when the rapid response team arrives on site, now at 10 minutes.
- Have started taking their search dogs with them to wooded areas on searches with some good results, although no snakes have been recovered by the teams.

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