



United States Department of Defense

Report to the Congress

Control of the Brown Tree Snake (BTS)

Submitted by:

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Introduction

On January 28, 2008, the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2008 was signed into law as Public Law 110-181. Section 314 of this law requires the Secretary of Defense to submit to the congressional defense committees a report on control of the brown tree snake (BTS). This report provides information on specific aspects of the Department's BTS control program as required by Section 314 of Public Law 110-181, as follows:

(1) The actions currently being taken (including the resources being made available) by the Department of Defense to control, and to develop new or existing techniques to control, the brown tree snake on Guam and to prevent the introduction of the brown tree snake into Hawaii, the Commonwealth of the Northern Mariana Islands, the continental United States, or any other non-native environment as a result of the movement from Guam of military aircraft, personnel, and cargo, including the household goods of military personnel and other military assets. Such actions shall include any actions taken by the Department of Defense to implement the recommendations of the Brown Tree Snake Review Panel commissioned by the Department of the Interior, as contained in the Review Panel's final report entitled "Review of Brown Tree Snake Problems and Control Programs" published in March 2005.

(2) Current plans for enhanced future actions, policies, and procedures and increased levels of resources in order to ensure that the projected increase of military personnel stationed on Guam does not increase the threat of introduction of the brown tree snake from Guam into Hawaii, the Commonwealth of the Northern Mariana Islands, the continental United States, or other non-native environments.

(3) The results of management, control, and eradication carried out by the Secretary of Defense, in consultation with the Secretary of the Interior, before the date on which the report is submitted with respect to brown tree snakes through the integrated natural resource management plans prepared for military installations in Guam under the pilot program authorized by section 101(g) of the Sikes Act (16 U.S.C. 670a(g)).

Background

The brown tree snake (BTS), also called brown treesnake, was introduced onto Guam after WWII, and has since decimated the native bird population, caused power outages, and is responsible for one of every thousand hospital emergency room visits on the island. To avoid introduction of the BTS, Hawaii and the Commonwealth of the Northern Mariana Islands (CNMI) have imposed a rigorous BTS Interdiction Program that requires aircraft and cargo departing from Guam to be inspected for the BTS immediately prior to departure. Flights failing to complete this process experience mission delays or cancellations due to flight restrictions. The planned mission expansion on Guam could increase the potential for the BTS to be introduced to other locations.

History

In light of Hawaii's vulnerability, Senator Daniel K. Inouye ensured that funding for the BTS Interdiction Program was included in the DoD Appropriations Bill each year from 1993 to 2006, with the understanding that DoD would eventually program for this cost. DoD has long had a Memorandum of Understanding with the US Department of Agriculture (USDA), Wildlife Services (WS) program, whereby WS conducts the BTS Interdiction Program (funded through an Economy Act transfer) for the Navy and Air Force, as well as the Government of Guam.

The BTS Interdiction Program on Guam has been a success. Prior to initiation of the program, BTSs were periodically found on Oahu associated with aircraft or cargo from Guam. Since program initiation, 87 BTSs have been intercepted in outbound cargo or aircraft on Guam, and only two live snakes have been confirmed to have left Guam. The first was in 1994, when equipment was overlooked for inspection and a BTS was transported to a U.S. Army Schofield Barracks warehouse in central Oahu. In 2005, after inspection personnel were cut due to funding shortfalls, a live BTS was transported to McAlester Army Ammunition Plant, Oklahoma, resulting in an inquiry from the Hawaii Congressional Delegation to the Secretary of Defense.

The DoD, in cooperation with the USDA, the Department of the Interior (DOI), and the Government of Guam, has developed a comprehensive program to reduce the effect of the BTS on Guam's endangered species, and to ensure that the BTS does not become established outside of Guam. In fiscal year 2008, the Navy and Air Force both committed to permanent funding for the BTS Interdiction Program, which will ensure a stable, uninterrupted program.

I. Current Actions

This section describes actions currently being taken by DoD to control the BTS on Guam, as well as to prevent its introduction into other areas. The Brown Tree Snake Review Panel was commissioned by the DOI to assess research and control programs related to the BTS. Its report, “Review of Brown Treesnake Problems and Control Programs,” was published in March of 2005, and contained recommendations for federal agencies, including DoD, to improve their BTS programs. This report and other public BTS documents can be viewed at <http://www.afpmb.org/browntreesnake.htm>

Both the Navy and Air Force have committed to 100% snake-free cargo and to programming for BTS control and inspection costs in future budgets.

DoD actions are outlined below under the same eight headings used in the panel’s report. However, some actions were initiated prior to the report’s publication or were not directly in response to report recommendations.

1. INTERDICTION ON GUAM

Wildlife Services (WS) is an organization within the USDA Animal and Plant Health Inspection Service (APHIS) that performs all BTS interdiction and control efforts on Guam. DoD funds WS through the Economy Act to conduct all cargo and aircraft inspections for both the Navy and the Air Force. WS staff conducts, monitors, and reviews the program in cooperation with the Navy and Air Force.

The goal of the BTS Interdiction Program on Guam is to prevent the BTS from leaving Guam. WS staff focuses their efforts on commercial and military air and sea ports of exit. BTS populations around cargo and port facilities are reduced using specially designed snake traps, by being captured by hand, and through the use of poisoned baits. Specially trained detector dogs are also used to inspect outbound cargo for any snakes that may have made their way into shipments bound for Hawaii, other Pacific Islands, or the U.S. Mainland. WS specialists are available at all times to conduct snake inspections. In addition, WS has an active public education campaign consisting of videos, brochures, and live demonstrations. Since the project’s inception in 1993, WS has removed an average of 5,000 snakes annually from Guam’s ports of exit.

The Navy has documented its working relationship with WS, as well as the site-specific plan for BTS control, interdiction, and inspection, in Commander, Navy Region Marianas (COMNAVMAR) Instruction 5090.10A, “Brown Tree Snake Control and Interdiction Plan.” This instruction establishes inspection and compliance procedures for each Navy facility on Guam, and recognizes and institutionalizes dog inspection of all military flights and shipments as an essential

part of base operations. As a result, inspections for the BTS are incorporated into regular cargo shipping protocols.

The Air Force documented rules and responsibilities for BTS interdiction efforts in 36th Wing Instruction 32-7004, titled “Brown Treesnake Management,” signed by the Commander of Andersen Air Force Base (AFB) in March of 2006.

BTS control efforts go beyond cargo inspection to include expanded control and research. The BTS is controlled at base housing areas, the day care center, warehouses, power plant, sewage treatment plant, exchange, commissary, and wharves using traps.

Each new Navy and Air Force Commander on Guam is briefed on the program and on inspection requirements. As evidence of this commitment, when changes in historic funding sources jeopardized the program in both 2007 and 2008, Commander, Navy Installations Command and Navy Region Marianas provided alternative funding to avoid unacceptable lapses in snake interdiction.

2. INTERDICTION OFF GUAM

The recommendations in the panel’s report on interdiction for islands and areas other than Guam were not specific to DoD. Guidance and alert notifications for sightings of the BTS off Guam are detailed in COMNAVMAR Instruction 5090.10A. This excellent guidance is followed by all DoD installations and personnel.

3. BROWN TREE SNAKE POPULATION CONTROL

Separate from the BTS Interdiction Program, DoD funds population control and reduction in specific areas for three purposes: to lower BTS populations in high risk areas such as wharves, power plants, and warehouses; to protect personnel in housing areas and day care centers; and in conjunction with protection or restoration of threatened and endangered species.

The Navy is funding WS to eradicate the BTS at two high-risk cargo sites on Guam (Glass Breakwater and the Barrigada Annex) using live trapping and toxic bait. These two areas serve as useful test sites to evaluate the effectiveness of acetaminophen bait toxicants for BTS population reduction. Acetaminophen tablets are placed into dead mice to make toxic bait for snakes, and either placed in bait stations or used in wide-scale broadcast efforts accomplished with aircraft. The Navy funded \$480,000 for this applied research in fiscal year 2006.

Population reduction of the BTS for the purpose of protecting or restoring native species is discussed in more detail in section III of this report.

4. SPECIES AND ECOSYSTEM RESTORATION ON GUAM AND OTHER PACIFIC BASIN AREAS

As stated in the panel's report, one of the two overarching goals of the BTS work is "adequate control so that restoration can occur one day and result in self-sustaining populations of some avian species." Nine bird species and two lizard species once native to Guam are no longer found on the island due to the BTS. Because populations of these animals have been preserved elsewhere, they may one day be reintroduced on Guam if the BTS can be removed from most or all areas.

Both Navy and Air Force have programs on Guam for species restoration and recovery. The Navy's work on the cave nesting sites of the Mariana gray swiftlet and the Air Force's munitions storage area and new Habitat Management Unit are discussed in section III of this report.

5. RESEARCH

The panel's report recommended investment in additional research on the BTS to improve interdiction and eradication efforts, although the recommendations did not mention DoD. The DoD Legacy Resource Management Program, directed by Congress in 1990, was designed to provide financial assistance to DoD efforts to preserve our natural and cultural heritage. Since 1993, the Legacy Program has funded 20 research projects on the BTS, totaling \$5,402,295. This research investigated chemicals for controlling the snakes, including repellents, toxicants, and fumigants; artificial baits and the visual and odor cues that attract the snakes to them; the effectiveness of different trapping strategies; and the effectiveness of dogs at finding BTSs. Much of the knowledge gained by this research is now used to conduct the current BTS Control Program.

6. FUNDING

The panel's report recommended "permanent, sustained funding" from DoD for BTS programs, and the recognition that BTS control costs are part of the military's "cost of doing business" on Guam. The history of funding for BTS control is complicated.

From fiscal year 1993 through fiscal year 2006, Congress provided the yearly funding necessary for the DoD BTS interdiction program. In the early years, funding was \$1,000,000 annually to cover the costs for both the Navy and Air Force. As the program matured and knowledge was gained as to the intricacies of the transportation system, more trapping and canine team inspections were

necessary to provide coverage. By 2006, annual funding to cover the cost of the DoD program had increased to approximately \$1,600,000.

In fiscal year 2007, no specific funding was provided by Congress, and the Navy and Air Force reprogrammed funding from their operational budgets halfway through the fiscal year to cover their respective shares of the BTS interdiction program. In fiscal year 2008, Navy and Air Force comptrollers provided funding at the beginning of the fiscal year. Both the Navy and Air Force recognize the need to commit to and plan for BTS control and interdiction in their budget processes, especially in view of projected personnel increases and mission expansion on Guam. To meet anticipated needs for BTS interdiction through fiscal years 2010-2015, the Navy has programmed \$1,300,000 annually, and the Air Force has programmed \$3,000,000 annually.

In addition to funding, both the Navy and the Air Force have historically provided in-kind services to WS to mitigate the cost of running the BTS interdiction and control programs. The Navy supports WS operations with an in-kind contribution of over 4,200 square feet of warehouse and office space, including a 4-run dog kennel for BTS inspection dogs. In-kind facilities and services provided to WS by the Air Force include offices, a warehouse, and utilities with an in-kind value of approximately \$100,000. Additionally, the Air Force has recently opened a new \$3,500,000 joint use working dog kennel facility, which will provide space for up to 16 WS BTS inspection dogs. WS procures the potatoes required for live mice used as bait attractant for the BTS at the Andersen AFB commissary, and they use the installation fuel point for their working vehicles. The staff Army veterinarian provides the medical care to the WS dogs.

In 2008, DoD received a \$2,000,000 appropriation to be used specifically for the BTS program. Because the Navy and Air Force had already provided for their BTS interdiction program costs out of operational funds, they were given the opportunity to identify projects they could execute in this fiscal year that would benefit the BTS program. The Navy received \$700,000 to enlarge their current kennel facility, increasing spaces for WS dogs. The Navy will also use \$50,000 for permanent snake barriers at their port facility. The Air Force received \$1,250,000 to construct BTS barrier systems in cargo areas, and to develop a system for cargo identification to aid in tracking inspections.

7. EDUCATION AND AWARENESS

As the panel's report states, "Awareness is the cornerstone for moving the BTS program forward." Although there were no recommendations specific to DoD in the report, DoD recognizes that education and public awareness are important components of the BTS program. Both the Navy and the Air Force work with WS to include BTS awareness training and dog inspection demonstrations for new

personnel and visiting officials. Andersen AFB will provide mandatory on-line training for base personnel on the BTS program starting this year using the Environmental Compliance Awareness Training and Tracking System (ECATTS). This training module includes an explanation of the threat posed by the BTS and the WS role in prevention of accidental export.

8. PROGRAM MANAGEMENT

Although the panel's report had no specific recommendations for DoD in this section, DoD has been an active participant in the alliance of federal and state agencies and organizations working together on an integrated BTS program. DoD is a signatory to the current "Memorandum of Agreement on Brown Tree Snake Control," and is an active member of the BTS Control Committee, which includes all signatories to the Memorandum of Agreement. The stated purpose of the Memorandum of Agreement is to acknowledge the importance of BTS control in the Pacific region and the need for cooperative efforts to solve problems caused by BTS. Additionally, the Memorandum of Agreement establishes a policy framework and working relationship between the signatories to facilitate implementation of the BTS Control Plan. The Department of the Interior, Department of Defense, Department of Agriculture, Department of Commerce, Department of Transportation, Government of Guam, State of Hawaii, and the Commonwealth of Northern Mariana Islands signed the Memorandum of Agreement, and all have been active participants in the BTS Control Committee. The BTS Control Committee meets twice yearly to share research findings and needs, discuss funding and other shared resources, report control results, and plan for the future of the integrated BTS Control Program.

II. Plans to Address the Military Personnel Increase in Guam

The Joint Guam Program Office (JGPO) was established within the Department of the Navy in August 2006 and it has responsibility for planning and executing the military development on Guam. The impacts of the military build-up on Guam on both the BTS program and on invasive species as a whole are being evaluated under the Joint Guam Program Office (JGPO) Environmental Partnering Team efforts.

The Navy is currently working with the USDA and the Air Force to evaluate combining the Military Services' BTS programs into a single Guam-wide DoD program as part of the implementation of the Base Realignment and Closure 2005 action for joint installation management on Guam. Both the Navy and the Air Force recognize that funding BTS interdiction efforts is part of the cost of conducting military operations on Guam, and are planning, programming, and budgeting accordingly. The Air Force has programmed for annual requirements based on 100 percent inspection of outbound cargo, to include all interdiction-related costs such as salaries, detector dog and handler training, snake trapping, fence line snake capture, veterinary services, vehicles, and supplies. Kennel facilities and other in-kind services will continue to be provided.

The DoD also has several projects planned and funded in anticipation of the mission expansion on Guam. As previously mentioned, the Navy is planning to construct additional dog kennels for USDA interdiction teams and to develop projects for permanent snake barriers at the Naval Base. The Air Force plans to construct BTS barrier systems in cargo areas and to develop a cargo identification system to aid in tracking BTS inspections.

III. Results of Past Actions Under the Pilot Program

The National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2004 (Public Law 108-136) amended Section 101(g) of the Sikes Act (16 U.S.C. 670a(g)) by adding a requirement for a pilot program for invasive species management on Guam. Language for the pilot program is as follows:

(1) INCLUSION OF INVASIVE SPECIES MANAGEMENT.—During fiscal years 2004 through 2008, the Secretary of Defense shall, to the extent practicable and conducive to military readiness, incorporate in integrated natural resources management plans for military installations in Guam the management, control, and eradication of invasive species—

(A) that are not native to the ecosystem of the military installation; and

(B) the introduction of which cause or may cause harm to military readiness, the environment, or human health and safety.

(2) CONSULTATION.—The Secretary of Defense shall carry out this subsection in consultation with the Secretary of the Interior.

The Navy's integrated natural resources management plan (INRMP) for Navy Lands, Guam outlines a program to protect the remaining endangered Mariana gray swiftlets, which reside in three caves located on Navy property on Guam. Intensive snake management around these sites minimizes the number of swiftlets lost to BTS predation. Under this program, 152 snakes were captured in the swiftlet caves in 2007 alone, and swiftlet populations have increased.

The Air Force's INRMP for Andersen Air Force Base supports endangered species recovery within their munitions storage area (MSA). This \$200,000 per year program funds WS to remove BTSs from within the MSA. This will eventually allow populations of native Guam wildlife, including federally endangered Mariana crows, Guam rails, and eventually Micronesian kingfishers, to recover in a place safe from BTS.

Additionally, Andersen Air Force Base is working with U.S. Fish and Wildlife Service personnel on a new wildlife Habitat Management Unit enclosed by a permanent BTS barrier. Siting has been completed and approved, and construction is anticipated this year.

Conclusion

The DoD has a long history of successful work on the BTS with a multi-pronged approach involving BTS interdiction, trapping, research, and species restoration. Perhaps most importantly, the close cooperation and sharing of resources between DoD and the other federal agencies and governments working on the BTS problem have resulted in a highly integrated, island-wide program to control BTSs on Guam. DoD's planned expansion on Guam will carry with it a greater focus on BTS control, including increased funding. DoD fully understands the importance of preventing the BTS from leaving Guam, and remains committed to ensuring that military activities do not increase the potential for this to occur.