

DECISION AND FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT: SAVANA ISLAND BLACK RAT ERADICATION PROGRAM

I. INTRODUCTION

The Virgin Islands tree boa (*Chilabothrus granti*) is a medium length, slender, nonvenomous snake that is native to Puerto Rico and the Virgin Islands. In 1970, the United States Fish and Wildlife Service (USFWS) designated the Virgin Islands tree boa as an endangered species pursuant to the Endangered Species Act due to its restricted and fragmented habitat, habitat disturbance, and the influence of non-native predators, such as cats (*Felis catus*) and black rats (*Rattus rattus*). As part of recovery efforts, the USFWS and its partners have reintroduced the Virgin Islands tree boa to islands and cays within the species historic range (USFWS 2022).

Savana Island is a small uninhabited island in the U.S. Virgin Islands (USVI) located approximately 2 to 3 miles west of St. Thomas Island. The government of the USVI manages Savana Island as a wildlife sanctuary. The USVI Department of Planning and Natural Resources (USVI DPNR) is working with the USFWS, the North Carolina Zoo (NCZ), and Island Conservation (IC) to introduce the Virgin Islands tree boa to Savana Island. However, non-native black rats currently inhabit Savana Island and are a primary threat to the introduction of the Virgin Island tree boa to the island.

II. PURPOSE AND NEED FOR ACTION

Rats (*Rattus* spp.) are recognized as a major threat to island biodiversity because they often lack natural predators, have high reproductive rates, and have a varied diet (Shiels et al. 2014, Harper and Bunbury 2015, Pacific Invasives Initiative 2020). In some cases, rat introductions to islands have resulted in the extinction of native plant and wildlife species (Duncan and Blackburn 2007, Bellard et al. 2016). The presence of black rats on Savana Island are a primary threat to the introduction of the Virgin Islands tree boa because rats are omnivorous and will feed on a variety of food sources, including the Virgin Island tree boa and their young. A previous introduction of the Virgin Islands tree boa on Cayo Ratones in Puerto Rico was lost due to the reintroduction of the black rat after the establishment of a Virgin Islands tree boa population (USFWS 2022). Similar to Savana Island, Cayo Ratones is an offshore island where the USFWS and its partners established a Virgin Islands tree boa population, which grew substantially for 10 years post release. However, between 2004 and 2018, the island was recolonized by rats, and by 2018, surveys could no longer find Virgin Islands tree boas on the island. Another survey conducted in 2021 also did not find any boas and the USFWS currently presumes the population on Cayo Ratones to be extirpated (USFWS 2022).

To ensure the successful introduction of the Virgin Islands tree boa to Savana Island, the U.S. Department of Interior Office of Insular Affairs (USDOI-OIA), IC, USVI DPNR, in cooperation with U.S. Department of Agriculture Animal and Plant Health Service (USDA-APHIS) Wildlife Services (WS), are proposing to eradicate black rats from Savana Island prior to the introduction of the Virgin Islands tree boa using ground and aerial applications of the rodenticide brodifacoum.

III. AGENCY ROLES AND REGULATORY CONSIDERATIONS

Efforts to eradicate black rats from Savana Island will consist of the primary eradication effort using a brodifacoum rodenticide followed by post-eradication activities that will increase the likelihood of eradication of the black rat. IC will be the lead entity for the eradication effort that includes all rodenticide applications with support from the USVI DPNR. IC will apply the rodenticide using various

aerial and ground-based application methods that are designed to increase the likelihood of a successful eradication and minimize the risk to human health and the environment. The USDOI-OIA is the lead federal agency that is providing funding for the proposed eradication of black rats from Savana Island. WS will be responsible for environmental monitoring post application of the rodenticide. Section 1.6 in the EA provides further information on the authority and roles of the various project participants.

Several regulations and executive orders would be relevant to eradication efforts on the island. Table 1 in Section 1.4 and Chapter 4 of the EA discuss several regulations and executive orders that would be relevant to activities, including activities conducted by WS. All management actions conducted and/or recommended by WS would comply with applicable laws and regulations in accordance with WS Directive 2.210.

IV. NATIONAL ENVIRONMENTAL POLICY ACT AND WS' DECISION-MAKING

Pursuant to the National Environmental Policy Act (NEPA), the USDOI-OIA, in cooperation with the USDA-APHIS, prepared an Environmental Assessment (EA) to document alternative approaches to meeting the need for action and to document the potential environmental effects associated with implementing those alternative approaches. The EA provides evidence and analysis to determine whether the potential environmental effects to the human environment might be significant requiring the preparation of an Environmental Impact Statement (EIS). Therefore, the analyses in the EA helped inform agency decision-makers, including making an informed decision on whether the alternative approaches would require the preparation of an EIS, or the EA process concludes with a Finding of No Significant Impact (FONSI). This Decision document provides notification of WS' choice of an alternative approach to implement and determination regarding the environmental effects of the chosen approach. The EA, along with this Decision, document WS' compliance with the NEPA, with the Council on Environmental Quality guidelines (see 40 CFR 1500), and with the implementing regulations for the NEPA of the USDA (7 CFR 1b) and the APHIS (see 7 CFR 372).

Public Involvement

Another major purpose of the NEPA is to include the public during the planning process to support informed decision-making. WS made the Draft EA available to the public for review and comment by a legal notice published in the *Virgin Islands Daily News* newspaper from December 12, 2023 through December 14, 2023 and a notice of availability published on the APHIS website. WS also made the Draft EA available to the public for review and comment on the federal e-rulemaking portal at the regulations.gov website (Docket Number: APHIS-2023-0085). WS also sent out an electronic notification to stakeholders registered through the APHIS Stakeholder Registry. The public involvement process ended on January 16, 2024.

During the public comment period, the USDOI-OIA and the WS received three comment responses from the public on the regulations.gov website related to the Draft EA. WS considered all comments received. The comments did not specifically address activities that WS would conduct. The comments primarily supported or opposed the overall activities of removing rats from Savana Island and involved the use and application of the rodenticide brodifacoum, which would not occur by WS. WS will make this Decision and FONSI, and the final EA, available to the public using the same methods that WS used to notify the public that the Draft EA was available for public comment.

V. ISSUES CONSIDERED

Issues are concerns regarding potential effects that might occur from a proposed activity (see Section 1.5 of the EA). Federal agencies, including WS, must consider such issues during the decision-making

process of the NEPA. The USDOI-OIA and USDA-APHIS identified several issues during the development of the Draft EA. The following issues were identified as relevant to the scope of impacts analysis in the EA:

- human health and worker safety,
- cultural resources,
- physical environment: soil, water, and air quality,
- biological resources: animal and plant communities,
- potential impacts to threatened and endangered species,
- potential impacts to birds protected under the Migratory Bird Treaty Act,
- potential impacts to marine mammals protected under the Marine Mammal Protection Act,
- potential impacts to trust resources managed by federal agencies, and
- compliance of the Agency's regulatory status decision with Executive Orders and environmental laws, and regulations to which the action is subject.

VI. ALTERNATIVE APPROACHES CONSIDERED IN DETAIL

The USDOI-OIA and USDA-APHIS analyzed the environmental consequences associated with implementing a preferred alternative (proposed action) and a no action alternative.

Preferred Alternative (Proposed Action)

To eradicate black rats from Savana Island, the proposed action is the use of aerial and ground-based rodenticide applications by IC. Brodifacoum would be the primary toxicant used for the eradication of black rats. IC will be the lead entity in the primary and post eradication activities with assistance from USVI DPNR. Entities have successfully used rodenticides containing brodifacoum to eradicate black rats from islands across the globe (see Section 2.1 in the EA). Brodifacoum was chosen as the primary active ingredient due to its successful use in previous eradication efforts and is the preferred rodenticide used in island rodent eradication programs in the United States because of its high toxicity to rodents after just one feeding.

Lessons learned from previous eradication efforts have been used to develop principles and best management practices to increase the likelihood of successful eradications during future eradication projects. While each eradication project provides a unique set of challenges, there are basic principles that can be applied to all of them (Parkes 1993, Howald et al. 2007, Keitt et al. 2015, Broome et al. 2017, Pacific Invasives Initiative 2020). Key principles to eradicate invasive species on islands are:

- Every individual targeted must be put at risk with the proposed removal technique(s).
- The technique(s) must remove individuals at a rate faster than they can replace themselves.
- Immigration must be zero, or effectively be managed to zero.
- Deliver a highly palatable bait containing a toxic rodenticide into every potential rodent territory.
- Ensure bait is available for long enough that every rodent has access to a lethal dose.
- Time the baiting operation to when the rodent population is most likely to consume the bait.
- Minimize the short-term risks and impacts to nontarget wildlife, people, and the environment from disturbance and the rodenticide wherever possible.
- Biosecurity procedures must be able to sustain the eradication with effective prevention, detection, and response to any incursion.

The primary eradication effort will consist of two aerial applications of Brodifacoum-25D Conservation (B-25D; EPA Reg. No. 56228-37) conducted by IC. IC will aurally drop pellets of B-25D across the

entire land area of Savana Island at up to 26.76 pounds per acre (30 kg/ha) per application, with an interval of approximately 14 to 24 days in between applications. Aerial broadcast will occur using a helicopter (see Section 2.2.2.1 in the EA) or an Uncrewed Aerial System (see Section 2.2.2.2 in the EA). The IC could use ground applications of B-25D pellets to supplement aerial applications (see Section 2.2.3 and Table 2 in the EA). Ground applications would consist of hand baiting applications of B-25D pellets using bait bolas/sachets, broadcast, bait trays, and bait station. The implementation of mitigation measures described in the draft EA will protect human health and environmentally sensitive areas.

Post eradication efforts will include hand baiting or ground broadcast applications of B-25D pellets up to 26.76 pounds per acre (30 kg/ha) in areas with continuing evidence of rat activity. Ground applications of B-25D pellets will occur using either bait bolas/sachets, broadcast, bait trays, and/or bait stations in areas with continuing evidence of rat activity, and implementation of a biosecurity plan to ensure rodents are not reintroduced to Savana Island in the future.

Section 2.2.4 in the EA discusses the protection measures that IC will implement during rodenticide applications to reduce risks to human health and safety, aquatic resources, and bird species that may also be present on the island. WS and IC will implement a monitoring program to evaluate the efficacy of the rodenticide application and to monitor for potential impacts to nontarget species. WS and IC will monitor bait availability, bait degradation, and target species mortality to evaluate effectiveness. IC and WS will also collect nontarget species carcasses that are observed during and after rodenticide applications, where feasible. Depending on the age and condition of the carcasses, the carcass may be necropsied to determine cause of death and submitted for analysis to determine brodifacoum tissue residue levels. WS and IC will collect environmental samples to determine potential brodifacoum residues after application, including water and biological samples of relevant ecological compartments.

No Action Alternative

Under the no action alternative, no application of brodifacoum rodenticide would occur on Savana Island; therefore, WS would not participate in environmental monitoring of brodifacoum applications on the island.

VII. ALTERNATIVE APPROACHES CONSIDERED BUT NOT ANALYZED IN DETAIL

The USDOIOIA and the USDA-APHIS considered additional alternative approaches; however, the USDOIOIA and USDA-APHIS did not consider those alternative approaches in detail for the reasons provided in Section 2.4 of the EA.

VIII. ENVIRONMENTAL CONSEQUENCES

Chapter 3 of the EA analyzes the environmental consequences of the two alternative approaches in comparison to determine the extent of actual or potential direct, indirect, and cumulative effects on the issues. The project is proposed to begin during the spring of 2025. Spring is generally the dry time of the year on Savana Island, which reduces the chance of brodifacoum runoff into the marine environment and maximizes the efficacy of the baits because other food sources are limited. Based on the analyses in Chapter 3, the proposed action will not result in adverse effects to the public or to workers involved with applications of rodenticides and monitoring activities. Savana Island is a remote island and maintained as a wildlife sanctuary by the government of the USVI; therefore, public access to the island is restricted. The IC and cooperators will follow applicable label requirements for the application of brodifacoum rodenticide, which will minimize risks to applicators. In addition, IC and its cooperators will follow all applicable guidelines regarding the safe use of all aerial aircraft and will comply with applicable Federal Aviation Administration requirements during aerial bait applications.

The proposed action will assist in the Virgin Islands tree boa recovery efforts and will benefit natural resources on the island that black rats are currently negatively affecting. The brodifacoum pellets pose a risk to birds and other wildlife that consume the pellets or consume prey that contain residues of brodifacoum. The risks to birds and other wildlife will be reduced by the implementation of protective measures designed to minimize exposure to brodifacoum and disturbance from the proposed action. Label restrictions and protective measures to mitigate rodenticide contamination of the marine environment will minimize the risks to nontarget marine species.

WS will participate in monitoring the efficacy of the proposed action by monitoring bait availability, bait degradation, and target species mortality. WS will also collect carcasses of nontarget species and depending on the condition of the carcass, may submit those carcasses for necropsy or tissue samples to determine brodifacoum residues. Collecting carcasses for residue testing would not result in additional non-target mortalities. Environmental monitoring may also include the collection of some terrestrial invertebrates for tissue residue analysis; however, the number of invertebrates collected will be low and will not result in any short-term or long-term effects.

In addition, WS will collect water samples and biological samples of relevant ecological compartments to determine brodifacoum residues. The collection of water and other biological samples would not adversely affect those resources and collection would not occur at an intensity that would result in adverse effects to those resources.

IX. DECISION

I have carefully reviewed the EA prepared to meet the need for action and input resulting from the public involvement process. I find the preferred alternative (proposed action) to be environmentally acceptable, addressing the issues and needs while balancing the environmental concerns of management agencies, property owners, advocacy groups, and the public. The analyses in the EA adequately address the identified issues, which reasonably confirm that no significant impact, individually or cumulatively, to animal populations or the quality of the human environment are likely to occur from implementing the preferred alternative, nor does implementing the preferred alternative constitute a major federal action. Therefore, the analyses in the EA do not warrant the completion of an EIS.

Based on the analyses in the EA, implementation of the preferred alternative would best address the issues identified in Section 1.5 of the EA. The preferred alternative does not adversely impact the environment, cultural resources, property, human health and safety, target species, nontarget species, including threatened or endangered species, and/or the physical environment. Changes that broaden the scope of the project, changes that affect the natural or human environment, or changes from the issuance of new environmental regulations would trigger further analysis. Therefore, it is my decision to implement the preferred alternative as described in the EA.

X. FINDING OF NO SIGNIFICANT IMPACT

Based on the analyses provided in the EA, there are no indications that implementing the preferred alternative would have a significant impact, individually or cumulatively, on the quality of the human environment. I agree with this conclusion and therefore, find that an EIS should not be prepared. I base this determination on the following factors:

1. WS' participation in collecting efficacy and environmental samples would not be regional or national in scope. WS' activities would only occur on Savana Island as part of efforts by the

USVI Department of Planning and Natural Resources (USVI DPNR) working with the USFWS, the NCZ, and IC to introduce the Virgin Islands tree boa to Savana Island.

2. Based on the analyses in the EA, the efficacy and environmental monitoring activities conducted by WS would not adversely affect human health and safety (see Section 3.1.1, Section 3.2, and Section 3.3.1 in the EA).
3. The preferred alternative (proposed action) would not significantly affect unique characteristics, such as ecologically critical areas on the island. WS' adherence to applicable laws and regulations would further ensure that activities conducted under the preferred alternative (proposed action) would not harm the environment (see Section 3.2 and Section 3.3.2 in the EA).
4. The effects on the quality of the human environment under the preferred alternative (proposed action) are not highly controversial, including those aspects of the efficacy and environmental monitoring conducted by WS. Although some people are opposed to aspects of managing an invasive species using rodenticides, the failure of a particular special interest group or person to agree with every act of a federal agency does not result in a controversy. Methods and impacts of implementation of the preferred alternative (proposed action) are not controversial among experts in the field of managing conflicts caused by wildlife (see Section 1.1, Section 1.2, Section 1.3, Section 1.6, and Section 4.1 in the EA).
5. Based on the analysis documented in the EA, the effects of implementing the preferred alternative (proposed action) on the quality of the human environment are not highly uncertain and do not involve unique or unknown risks (see Section 1.1, Section 1.2, Section 1.3, Section 1.6, Section 3.1, Section 3.2, Section 3.3, and Section 4.1 in the EA). WS activities would be limited to collecting efficacy data on brodifacoum applications and collecting environmental samples for residue testing.
6. The preferred alternative (proposed action) would not establish a precedent for any future action with significant effects or represent a decision in principle about future considerations. The EA does not set a precedent for making decisions on other islands or cays. Decisions on activities to manage invasive species in other areas are made independently and are based on specific information on wildlife populations and ecosystems of those areas; specific land use patterns; state, local, and tribal regulations and policies; state specific wildlife management plans and objectives; and, other state and local factors, including the types of activities requested and authorized by federal, tribal, state, and local (*e.g.*, county) management entities.
7. The EA did not identify significant cumulative effects associated with activities conducted by WS. The EA analyzed cumulative effects and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned (see Section 3.1, Section 3.2, and Section 3.3 in the EA). All environmental samples will be collected under a research and monitoring special use permit issued by the USVI DPNR.
8. WS activities under the preferred alternative (proposed action) would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would WS activities likely cause any loss or destruction of significant scientific, cultural, or historical resources (see Section 3.1.1, Section 3.2.4, and Section 4.1 in the EA).
9. USDA-APHIS consulted with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act and NMFS has concurred with the effects determination (see

Section 4.1 in the EA). There are no species designated by the USFWS as threatened or endangered on Savana Island (see Section 4.1 in the EA).

10. WS' activities conducted under the preferred alternative (proposed action) would comply with all applicable laws and regulations (see Section 1.4 and Chapter 4 in the EA) (WS Directive 2.210).

I based this decision on several considerations. This decision considers public comments, social/political and economic concerns, public health and safety, and the best available science. The foremost considerations are that 1) WS would only conduct activities related to collecting efficacy data and environmental sampling, 2) WS activities would be consistent with applicable laws, regulations, policies, and orders, and 3) the analyses did not identify significant effects to the human environment.

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XV. LITERATURE CITED

- Bellard, C., Cassey, P., and Blackburn, T. M. 2016. Alien species as a driver of recent extinctions. *Biology Letters*, 12:20150623. Accessed December 21, 2022 from <https://www.ncbi.nlm.nih.gov/pubmed/26888913>.
- Broome, K. G., Golding, C., Brown, K. P., Corson, P., and Bell, P. 2017. Rat eradication using aerial baiting current agreed best practice used in New Zealand. New Zealand Department of Conservation. Accessed December 23, 2020.
- Duncan, R. P., and Blackburn, T. M. 2007. Causes of extinction in island birds. *Animal Conservation*, 10:149-150.
- Harper, G. A., and Bunbury, N. 2015. Invasive rats on tropical islands: Their population biology and impacts on native species. *Global Ecology and Conservation*, 3:607-627. Accessed December 16, 2022 from <https://doi.org/10.1016/j.gecco.2015.02.010>.
- Howald, G., Donlan, C. J., Galván, J. P., Russell, J. C., Parkes, J., Samaniego, A., Wang, Y., Veitch, D., Genovesi, P., Pascal, M., Saunders, A., and Tershy, B. 2007. Invasive Rodent Eradication on Islands. *Conservation Biology*, 21:1258-1268. Accessed December 15, 2022.
- Keitt, B., Griffiths, R., Boudjelas, S., Broome, K., Cranwell, S., Millett, J., Pitt, W., and Samaniego-Herrera, A. 2015. Best practice guidelines for rat eradication on tropical islands. *Biological Conservation*, 185:17-26. Accessed February 2, 2023.
- Pacific Invasives Initiative. 2020. Pacific Invasives Initiative. Retrieved December 29, 2023 from <http://pacificinvasivesinitiative.org/>.
- Parkes, J. P. 1993. Feral goats: Designing solutions for a designer pest. *New Zealand Journal of Ecology*, 12:71-83. Accessed December 23, 2020 from

https://www.researchgate.net/publication/279674880_Feral_goats_Designing_solutions_for_a_designer_pest.

Shiels, A. B., Pitt, W. C., Sugihara, R. T., and Witmer, G. W. 2014. Biology and Impacts of Pacific Island Invasive Species. 11. *Rattus rattus*, the Black Rat (Rodentia: Muridae). Pacific Science, 68:145-184. Accessed January 17, 2023 from <https://doi.org/10.2984/68.2.1>.

USFWS. 2022. Virgin Islands Tree Boa (*Chilabothrus granti*) Species Status Assessment Version 1.1. U.S. Fish and Wildlife Service. Accessed October 16, 2023.