



National Science Foundation

June 29, 2023

U.S. Fish and Wildlife Service
Caribbean Ecological Services Field Office
ATTN: Dr. José Cruz-Burgos, Biologist
PO Box 491
Road 301 km5.1
Boquerón, Puerto Rico 00622

Subject: Section 7 Concurrence Request for Updates to Arecibo Site Operations (related to prior consultation under FWS/R2/CESFO/72-013-035)

Dear Dr. Cruz-Burgos:

This letter is to initiate informal consultation under Section 7 of the Endangered Species Act and to provide the determinations of the National Science Foundation (NSF) with regard to potential effects to listed species from Arecibo site operations under NSF's proposed transition from science-focused operations (with the operation of the 305-meter telescope) to education-focused operations (without operation of the 305-meter telescope) at the Arecibo site. In 2017, NSF obtained concurrence from your office on potential effects of such education-focused operations on federally listed species. The purpose of this consultation is to update that consultation and seek your concurrence.

Findings from 2017 Biological Assessment

After receiving technical assistance from your office, NSF developed a Biological Assessment (BA, Attachment 1) that describes each federally listed species that may occur at the Arecibo site, identifies potential impacts, and provides measures to minimize possible effects to protected species under each of five Action Alternatives for proposed operational changes being considered at that time. The Alternatives included Alternative 1- Collaboration with interested parties for continued science-focused operations and Alternative 2- Collaboration with interested parties for transition to education-focused operations, as well as additional Alternatives for mothballing, partial demolition, and full demolition. NSF's current proposal is consistent with the definition of Alternative 2 as previously evaluated, which could include partial or full use of the site, with potential demolition of buildings if they are not needed to support educational operations. Under the 2017 BA, Alternative 2, the 305-meter dish would be retained and maintained but not operated, which remains the case under the current proposal, although the dish is no longer fully intact. The following summarizes the conclusions of the 2017 Section 7 consultation with regard to Alternative 2:

- Effects of operation and any demolition activities would have **no effect** on *Tectaria estremerana*, the Puerto Rican broad-winged hawk, the Puerto Rican parrot, the Puerto Rican sharp-shinned hawk, beautiful goetzia, chupacallos, erubia, *Myrcia paganii*, *Schoepfia arenaria*,

Cordia bellonis, palo de nigua, palo de rosa, uvillo, *Daphnopsis hellerana*, or *Thelypteris verecunda*. Note that no forested areas, or areas not already maintained, would be cleared during any demolition activities and that NSF would not conduct demolition activities during the hawk nesting season, December through May.

- Effects of operation and any demolition activities **may affect but is not likely to adversely affect** the Puerto Rican boa. Conservation measures and protocols will be implemented to minimize effects of deconstruction activities to the boa. (See Attachment 2 for boa protocols, which have been amended to include a 2021 update from your office).

2021 Update

Due to the December 2020 collapse of the 305-meter telescope, NSF engaged in emergency clean-up activities and completed informal consultation with your office on potential effects to listed species from these activities in June 2021. The following updates on the presence of species are available due to that effort:

- The Puerto Rican boa, which was regularly observed by maintenance workers prior to the platform collapse, was observed two times by contractors during the 2021 emergency clean-up activities.
- Puerto Rican broad winged hawk surveys were completed in January 2021, which resulted in the observatio of a mated pair and a juvenile regularly flying over the Observatory. Continued observations of the species determined that there is no active nest within or adjacent to proposed work and access areas. It appears the mated pair may have nested along the Tanamá River, away from the Observatory. After the start of the nesting period, observations of the birds became less frequent, but the birds remained in the area. Note that no Puerto Rican parrots were observed during this survey.
- A qualified botanist conducted plant surveys in the work area below Tower 4 on 29 April, 3 May, and 5 May 2021. She surveyed for listed species including *Tectaria estremarana*, *Cornutia obovata*, Palo de rosa (*Ottoschulzia rhodoxylon*), Ausú (*Myrcia pagani*), Chupacallos (*Pleodendron macranthum*), Uvillo (*Eugenia haematocarpa*), *Varronia bellonis*, *Schoepfia arenaria*, and *Daphnopsis helleriana*. No listed plant species were identified in the work areas to remove the two pieces of the tower that fell or along the access route to the work areas.

2023 Update

NSF has implemented Alternative 1 since 2018, and is now considering a transition to Alternative 2 (continued education-focused operations), as defined in the 2017 BA. Under Alternative 2, boa protocols would continue to be implemented, there would be seasonal restrictions on any demolition activities to avoid the Puerto Rican broad-winged hawk nesting season (December-May), and no work would occur in undisturbed or forested areas in and around the site.

Although Alternative 2 was included in the 2017 informal consultation, as described above, due to the time that has elapsed since the 2017 consultation, NSF generated a new species list through the Fish and Wildlife Service's Information for Planning and Compliance tool (see Attachment 2). This list identified two endangered bird species (Puerto Rican broad-winged hawk and Puerto Rican parrot), one endangered reptile (Puerto Rican boa), two endangered flowering plants (*Cordia bellonis* and Palo de Nigua), and one endangered fern (*Tectaria estremarana*). There is no critical habitat present. All of these

species were previously evaluated in the 2017 BA. NSF also inquired with your office about the current status of the Puerto Rican parrot. You confirmed via email on 11 April 2023 that the Puerto Rico Department of Natural and Environmental (Resources Departamento de Recursos Naturales y Ambientales [DRNA]) has documented the closest parrot sighting as less than one mile from the Arecibo site, between the site and Tanama River. DRNA anticipates that additional parrot sightings will be documented in the near future.

NSF finds that the 2017 BA adequately addresses potential impacts of the current proposal on federally listed species. Parrots may be more likely to occur now than at the time of the 2017 BA and warrant additional consideration. As noted in section 5.3 of the BA, this species is a cavity-nesting, frugivorous species that is rarely seen far from the forest. The current recovery plan for the Puerto Rican parrot¹ states that nesting occurs seasonally in late February or early March, during the driest time of the year when sierra palms fruit; this fruit is identified as a primary food for parrots during breeding. Fledgling occurs between 8-11 weeks. No activities are proposed that would involve clearing of forest, so parrot nesting and foraging activities would not be affected by continued operations. Should demolition of buildings occur in the future, seasonal restrictions to protect nesting birds from disturbance would ensure that construction-related noises would not occur during December-May, which is also inclusive of typical parrot nesting season. Therefore the proposed operations under Alternative 2, including any future demolition activities, would not affect this species.

The 2017 BA also did not anticipate that the 305-meter telescope would be only partially intact. Areas around the remnants of the 305-meter telescope dish will continue to be maintained as they have been, to the extent that this can be done safely, at least until a long-term historic preservation plan for the remaining components has been determined. Other areas that the dish no longer covers may be allowed to revegetate, returning to natural conditions, which could potentially create new habitat for listed species. In the future, NSF may consider historic preservation options for the remaining components of the 305-meter telescope, subject to any executed Programmatic Agreement (with the Puerto Rico State Historic Preservation Office and other parties) prepared under Section 106 of the National Historic Preservation Act. If at that time NSF proposes to conduct any activities that involve clearing of undisturbed areas (including any newly vegetated areas), NSF will conduct new Section 7 consultation under ESA as appropriate.

Summary and Request for Concurrence

Under the proposed transition to Alternative 2, education-focused operations, NSF would continue to require implementation of BOA protocols and would conduct any demolition of buildings outside of the Puerto Rican broad-winged hawk and Puerto Rican parrot nesting seasons (December-May). No clearing of forest would occur under the proposed operations, and the site would continue to be maintained as it is; if, in the future, changes are proposed at the remaining components of the dish that could have the potential for adverse effects to listed species, such as through the clearing of vegetation, NSF will initiate new Section 7 consultation as appropriate.

¹ U.S. Fish and Wildlife Service. 2009. Recovery Plan for the Puerto Rican Parrot (*Amazona vittata*). Atlanta, Georgia. 75 pp.

NSF therefore requests your concurrence on a finding of **no effect** on *Tectaria estremerana*, the Puerto Rican broad-winged hawk, the Puerto Rican parrot, the Puerto Rican sharp-shinned hawk, beautiful goetzea, chupacallos, erubia, *Myrcia paganii*, *Schoepfia arenaria*, *Cordia bellonis*, palo de nigua, palo de rosa, uvillo, *Daphnopsis bellerana*, and *Thelypteris verecunda* and a finding of **may affect but is not likely to adversely affect** the Puerto Rican boa.

The NSF point-of-contact for this Endangered Species Act Section 7 informal consultation is Ms. Kristen Hamilton, who can be reached at (703) 292-4820 and krihamil@nsf.gov. We appreciate your assistance in this matter and look forward to your response. If you require any additional information or documentation, please contact Ms. Hamilton.

Sincerely,

B. Ashley Zauderer-VanderLey, Ph.D.
Senior Advisor for Facilities
Division of Astronomical Sciences
National Science Foundation
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Alexandria, VA 22314

Attachments: Biological Assessment on NSF's Proposed Changes to Operations at Arecibo Observatory, May 2017

Puerto Rican Boa Protocols to be Implemented Prior to Intrusive Work at Arecibo Observatory, Puerto Rico (with 2021 update from DRNA)

FWS IPaC Species List, June 2023



United States Department of the Interior

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In Reply Refer To:
FWS/R4/CESFO/72013-035

Submitted Via Electronic Mail: bevander@nsf.gov

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Re: Section 7 Concurrence Request for Updates
to Arecibo Site Operations (related to prior
consultation under FWS/R2/CESFO/72-013-
035)

Dear Ms. Zauderer-VanderLey:

We have reviewed your Section 7 consultation letter requesting concurrence with the effect determination on listed species associated to the NSF's proposed transition from science-focused operations (with the operation of the 305-meter telescope) to education-focused operations (without operation of the 305-meter telescope) at Arecibo Observatory. Our comments are provided under the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 United States Code 1531 et seq.), and in accordance with the Fish and Wildlife Coordination Act (47 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

On June 23, 2017, the U.S. Fish and Wildlife Service (Service) provided concurrence with the effects determination included in the Biological Assessment (BA) addressing potential impacts and providing measures to minimize possible effects to protected species associated to the five (5) different alternatives under consideration for proposed operational changes; (1) Collaboration with Interested Parties for Continued Science-focused Operations, (2) Collaboration with Interested Parties for Transition to Education focused Operations, (3) Mothballing of Facilities, (4) Partial Deconstruction and Site Restoration, and (5) Full Deconstruction and Site Restoration.

Since 2018, NSF has implemented Alternative 1, and is now considering a transition to Alternative 2 (continued education-focused operations), as defined in the 2017 BA. However, the 2017 BA did not anticipate that the 305-meter telescope would be only partially intact. Areas around the remnants of the 305-meter telescope dish will continue to be maintained as they have been, to the extent that this can be done safely, at least until a long-term historic preservation plan for the

remaining components has been determined. Other areas that the dish no longer covers may be allowed to revegetate, returning to natural conditions, which could potentially create new habitat for listed species. Although Alternative 2 was included in the 2017 informal consultation, as described above, due to the time that has elapsed since the 2017 consultation, NSF generated a new species list through the Fish and Wildlife Service's Information for Planning and Compliance tool (IPaC). This list identified the following listed species, the Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*), the Puerto Rican parrot (*Amazona vittata vittata*), the Puerto Rican boa (*Epicrates inornatus*), *Cordia bellonis*, Palo de Nigua (*Cornutia obovata*) and *Tectaria estremerana*. New available information indicates the Puerto Rico Department of Natural and Environmental (DNER) has documented parrot sighting less than one mile from the Arecibo site, and DNER anticipates that parrots may expand its range and habitat use within this area in the near future.

Under the proposed transition to Alternative 2 (education-focused operations), NSF would continue to require implementation of boa protocols and would conduct any demolition of buildings outside of the Puerto Rican broad-winged hawk and Puerto Rican parrot nesting seasons (December-May). In addition, no clearing of forested habitat would occur under the proposed operations, and the site would continue to be maintained as it is; if, in the future, changes are proposed at the remaining components of the dish that could have the potential for adverse effects to listed species, such as through the clearing of vegetation, NSF will initiate new Section 7 consultation as appropriate. Therefore, the NSF has determined that the proposed action will have no effects on, the Puerto Rican broad-winged hawk, the Puerto Rican parrot, *Cordia bellonis*, Palo de Nigua (*Cornutia obovata*) and *Tectaria estremerana*, and may affect but is not likely to adversely affect the Puerto Rican boa.

Based on the information provided and the scope of the actions, we concur with the NSF effect determinations for the transition to Alternative 2 (continued education-focused operations), as defined in the 2017 BA. Therefore, no further consultation is required. Nevertheless, if the project is modified or if information on impacts to listed species becomes available this office should be contacted concerning the need for the initiation of consultation under section 7 of the Act.

Thank you for the opportunity to comment on this project. We appreciate your interest in protecting endangered species and their habitats. It is the Service's mission to work with others to conserve, protect, and enhance marine life, wildlife, plants and their habitats for the continuing benefit of our people. Please do not hesitate to contact Jose Cruz at 305-304-1386, should you have any questions concerning our comments.

Sincerely yours,

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Edwin Muñiz
Field Supervisor

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cc:
DNER, San Juan
Kristen Hamilton, email (krihamil@nsf.gov)