



**U.S. FISH AND WILDLIFE SERVICE
CARIBBEAN ECOLOGICAL SERVICES FIELD OFFICE
MARCH 2019**

Conservation Measures for the Virgin Islands tree boa (*Chilabothrus granti*)

The endangered Virgin Islands (VI) tree boa (*Chilabothrus granti*, formerly *Epicrates monensis granti*) is a small, slender, nocturnal, arboreal non-venomous snake. The VI boa does not pose any life threatening danger to human beings. Although considered docile, some individuals might try to bite if disturbed or during capture and handling. Newborn and juveniles are a light grey with brown to black blotches along their bodies, and darken as they mature into adults. Adults may reach between 3 to 4 feet in length.



Adult Virgin Islands tree boa - *Chilabothrus granti*
Photo: Puerto Rico by USFWS - JP Zagarra

Within U.S. jurisdiction, VI boas are found on the northeast side of Puerto Rico, Culebra Island, east end of St. Thomas, and on a few offshore cays. They are also found in some islands in the British Virgin Islands. They generally live in xeric (dry) habitat, which is characterized by poor rocky soils, in scrub woodland or subtropical dry forest with high density of interdigitating branches and vines connecting adjacent tree canopies. The VI boa is difficult to detect in the wild and can be found moving among branches, vines, and crawling on the ground at night. During the day they are mostly sheltered and out of sight. Some individuals have been found in or close to houses, especially if near their habitat.

All projects should avoid affecting the VI boa and its habitat. The U.S. Fish and Wildlife Service (Service) has developed the following conservation measures with the purpose of assisting others to avoid and minimize adverse impacts to the species and its habitat. These

recommendations may be incorporated into new projects and under certain circumstances into existing projects. Depending on the project, additional recommendations can be made besides the ones presented in this document.

Conservation Measures for Puerto Rico:

1. Inform all project personnel about the potential presence of the VI boa in areas where the proposed work will be conducted. A pre-construction meeting should be conducted to inform all project personnel about the need to avoid harming this species as well as penalties for harassing or harming boas. An educational poster or sign with photo or illustration should be displayed at the project site.
2. Prior to any construction activity, including removal of vegetation and earth movements, the boundaries of the project area and areas to be excluded and protected should be clearly marked in the project plan and in the field in order to avoid further habitat degradation into forested and conservation areas.
3. Once areas are clearly marked and prior to any construction activity, including removal of vegetation and earth movements, a biologist or experienced personnel should survey the areas to be cleared to ensure that no boas are present within the work area.
4. The VI boa is considered more active at night. Thus, in order to maximize VI boa detection, the species can be searched for the night(s) prior to any vegetation clearing starts according to the construction plan and if snakes are found, they can be relocated accordingly (see #7).
5. Once the area has been searched for VI boas, vegetation should first be cleared by hand to the maximum extent possible. Vegetation should first be cut about one meter above the ground, prior to the use of heavy machinery for land clearing. Once land is cleared by hand, this will allow boas present on site to potentially move away on their own to adjacent available habitat. If there is no suitable habitat adjacent to the project site, any VI boas found need to be relocated accordingly (see #7).
6. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. VI boa data should also include a photo of the animal (dead or alive), relocation site GPS coordinates, the time and date of the relocation, and comments on how the PR was detected and its behavior.
7. If a VI boa is found within any of the working or construction areas, activities should stop at the area where the VI boa is found and information recorded accordingly (see #6). Boas should be safely captured and relocated at least 1 km within suitable habitat (forested) and away from construction areas. Potential boa relocation sites should be pre-determined before the project starts and sites shared with the Service for review. Relocation of boas should be done by trained and designated personnel, and shall not harm or injure the captured boa. Activities at other work sites, where no boas have been found after surveying the area, may continue.

8. If immediate relocation is not an option, project related activities at this area should stop until the boa moves out of harm's way on its own or call the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation (phone #'s: 787-724-5700, 787-230-5550, 787-771-1124). The potential use of the PRDNER staff for these purposes should be coordinated with them at least 30 days before the project starts. If a VI boa is captured by the PRDNER, record the name of the PRDNER staff and information on where the VI boa will be taken.
9. Measures should be taken to avoid and minimize VI boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (in staging) or near potential VI boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If VI boas are found within vehicles or equipment, boas need to be safely captured and relocated accordingly (see #7).
10. VI boas may also enter or occur within debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed in areas farthest away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If debris piles will be left on site, we recommend they be placed in an undisturbed area.
11. If the event a dead VI boa is found, immediately cease all work in that area and record the information accordingly (see #6). If the VI boa was killed as part of the project actions, please include information on what conservation measures had been implemented and recommendations on what will be done to avoid further killing more individuals. A dead VI boa report should be sent by email (see contacts below) to the Service within 48 hours of the event. If possible, place the dead VI boa in a container or bag and frozen for later collection by the Service (José Cruz-Burgos, Endangered Species Coordinator, mobile 787-510-5206, email: jose_cruz-burgos@fws.gov) or other partner.
12. Projects must comply with all state laws. Please contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) for further guidance.

Conservation Measures for the USVI:

1. Contact Government of the Virgin Islands, Department of Planning and Natural Resources, Division of Fish and Wildlife (DFW) (340)775-6762, for consultation.
2. DFW will come out for an on-site discussion. They need a copy of your building plans or a narrative of your intended project. DFW will coordinate via email so that all developers, owners, contractors, and other agencies, can follow along and provide input.
3. DFW will conduct a short VI Tree Boa training session for all individuals conducting hand clearing. This will involve discussions on what to do if a boa is encountered as well

as boa identification. This can be done any time prior to hand clearing but is often preformed the first day on site. Photographs of the VI Boa are to be prominently displayed at the site.

4. At least 5 days prior to the use of heavy equipment on the site, the site vegetation may be cut by hand. Any stone walls or naturally occurring rock piles must be carefully dismantled by hand as these are refuges for the snake. This will allow any boas present to vacate the site without injury.
5. Only hand clearing is to be performed. This allows the use of chainsaws cutting vegetation down to less than 36 inches off the ground.
6. If a VI boa is found within any of the working or construction areas, activities should stop at the area where the VI boa is found. DFW should be notified of any snakes observed or captured. Boas should be safely captured and relocated at least 1 km within suitable habitat (forested) and away from construction areas. Potential boa relocation sites should be pre-determined before the project starts and sites shared with DFW for review.
7. Another site visit will be performed by DFW to confirm that hand clearing has been completed to our standards. The waiting period clock starts after inspection.
8. The site is to be left undisturbed for 5 days prior to the use of heavy machinery. However manual work may continue to be performed during this time and any vegetation may be moved by hand.
9. Use of heavy equipment is only permitted to start after the agreed upon date.

If you have any questions regarding the comments above, please contact the USFWS Monday to Friday 8am-430pm:

- Marelisa Rivera, Deputy Field Supervisor
 - Email: marelisa_rivera@fws.gov
 - Office phone 787-851-7297 ext. 206 or mobile 787-510-5219
- José Cruz-Burgos, Endangered Species Coordinator
 - Email: jose_cruz-burgos@fws.gov
 - Office phone 787-851-7297 ext. 218 or mobile 787-510-5206