Invasive Plant Distribution Report, Anguilla DPLUS125





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By Zoya Buckmire, Field Coordinator
Department of Natural Resources

DPLUS125: Protecting Anguilla's biodiversity by building capacity in invasive plant management

Background

This project aims to identify, map, and manage five focal species of invasive plants in Anguilla and its cays. These five plants are Brazilian jasmine (*Jasminum fluminense*), false puncture vine or Jamaican feverplant (*Tribulus cistoides*), Madagascar rubbervine (*Cryptostegia madagascariensis*), tropical bull nettle (*Cnidoscolus urens*), and yerba porosa (*Porophyllum ruderale*). Mapping is an essential first step as the distribution and invasion stage of each species will inform the management plans and actions to be taken under this project. Thus, field surveys have been a major ongoing activity over the last 2.5 years.

The project team have been conducting regular surveys in Anguilla since April 2022, after the completion of a training workshop on plant survey techniques. Led by Dr. Wayne Dawson of Durham University, this workshop covered species identification, use of GPS, systematic survey methods, and online data management tools, and was attended by the project team as well as other members of the Department of Natural Resources and the Anguilla National Trust. The initial team of Rhon Connor (Project Lead) and Zavier Morrishaw (Field Assistant) conducted all surveys between April 2022 and January 2023, after which they were occasionally joined by the newly hired Project Manager Nyasha Child. The final team member, Field Coordinator Zoya Buckmire, joined in April 2023, and all surveys have since been conducted by a subset of this team.

This distribution report presents the most up-to-date records of each of the focal species across Anguilla, to inform management actions throughout the remainder of the project. Four of the five focal species are too widespread across Anguilla to attempt eradication or control; only the tropical bull nettle was deemed a feasible target for eradication. The distribution, eradication feasibility, and ongoing treatment of tropical bull nettle are detailed in a specific Management Plan[1] that can be accessed from the DNaR. Recommendations for the other four species will be provided at the end of the project, which is scheduled for March 2025.

[1] Buckmire, Z., and Tye, A. 2024. Plan for the eradication of Tropical Bull nettle *Cnidoscolus urens* from Anguilla, version 2.0. Department of Natural Resources, Government of Anguilla.

Survey Effort

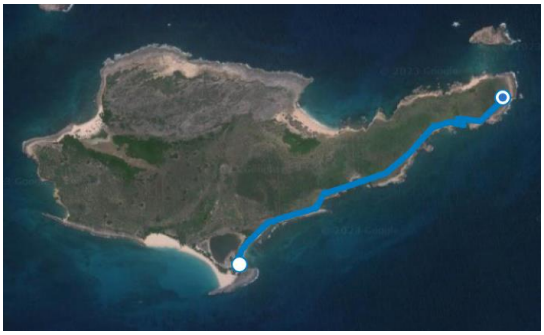
Mainland Anguilla

Between April 2022 and April 2023, approximately 80% of mainland Anguilla had been surveyed along the major and minor road networks in search of the focal species. In May 2023, the team met to identify any gaps in coverage for the mainland surveys, and we conducted targeted surveys to fill these gaps. All outstanding areas were covered between May and September 2023. Now, we continue to conduct periodic surveys to detect and record new populations of the five species in areas that were previously surveyed.

Offshore Islands

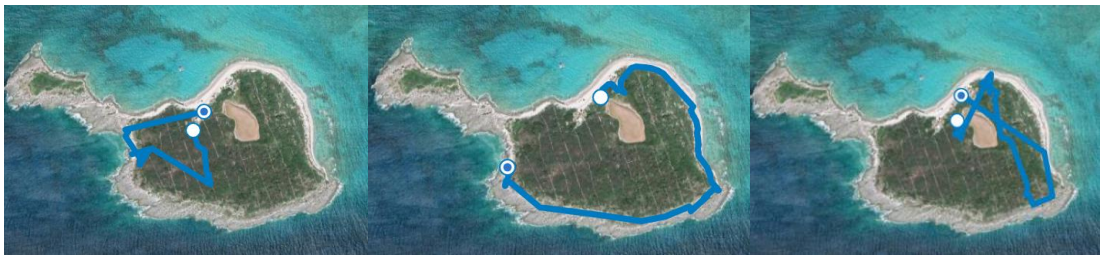
In 2023, the project team also worked closely with the Anguilla National Trust to survey the offshore islands. The ANT regularly visits most of the cays for their seabird, iguana, and rodent biosecurity surveys, so we aimed to combined efforts where possible. Our visits to each of the major cays were as follows, with maps highlighting the trails walked on each island:

- Dog Island – the project team was invited to an unrelated field trip to Dog Island in mid-May, wherein we covered the southern coast of the island. None of our focal invasive plants was detected along the trail, and while we acknowledge that we only covered a small portion of the island, through discussions with ANT we have determined that the rest of the island is not suitable potential habitat for our species and thus not worth revisiting.

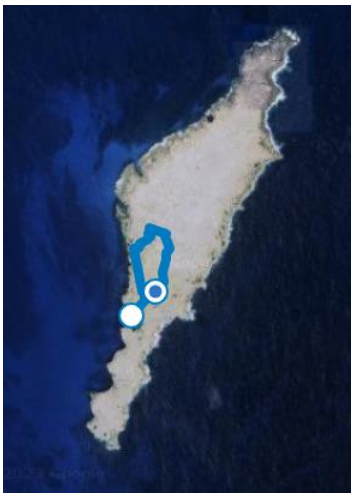


- Prickly Pear Cays – the abovementioned field trip also included a short visit to Prickly Pear East, wherein we covered about half of the island in search of iguanas. The team chose to return to Prickly Pear East in early July to complete our survey of the island, using the ANT's established trails to cover as much area as possible. The existing flora and fauna list for the Prickly Pears[2] identifies and details four invasive plants on the island, but does not document any of our focal species nor did we detect them in our surveys.

[2] K. Questel & J. Hochart. 2018. Annotated list of flora and fauna on the Prickly Pear Cays, Anguilla BWI.



- Sombrero Island – we visited Anguilla's most outlying cay in early July, surveying a corridor in the center of the island deemed most likely to have vegetation. The legacy of mining on Sombrero has left it largely inhospitable to any but the toughest scrubs/vines and only 12 plant species are documented[3]. There is an ongoing project by the ANT to reintroduce several plant species to the island, with regular monitoring of the vegetation there, so if any of the focal invasives manage to arrive, they will be quickly detected, allowing for easy removal before establishment.



- Great Scrub Island – this island is not typically covered by the ANT's offshore surveys, and so we requested their services to transport us to and guide us on Scrub Island in mid-July. We split into two teams to cover as much ground as possible, and were able to survey the entire island in one trip. The vegetation there is very similar to the east end of mainland Anguilla, meaning there is potential for the establishment of the focal invasives, but the island is privately owned and most visitors remain on the beach/coast, so the risk of introduction of new species is low.

We decided against surveying several of the smaller cays for various reasons. Sandy Island, Scilly Cay, Anguillita, and Seal Island were considered too small and/or sparsely vegetated to be worth

[3] K.C. Lindsay. 2021. On the flora of Sombrero Island and opportunities for vegetation restoration.

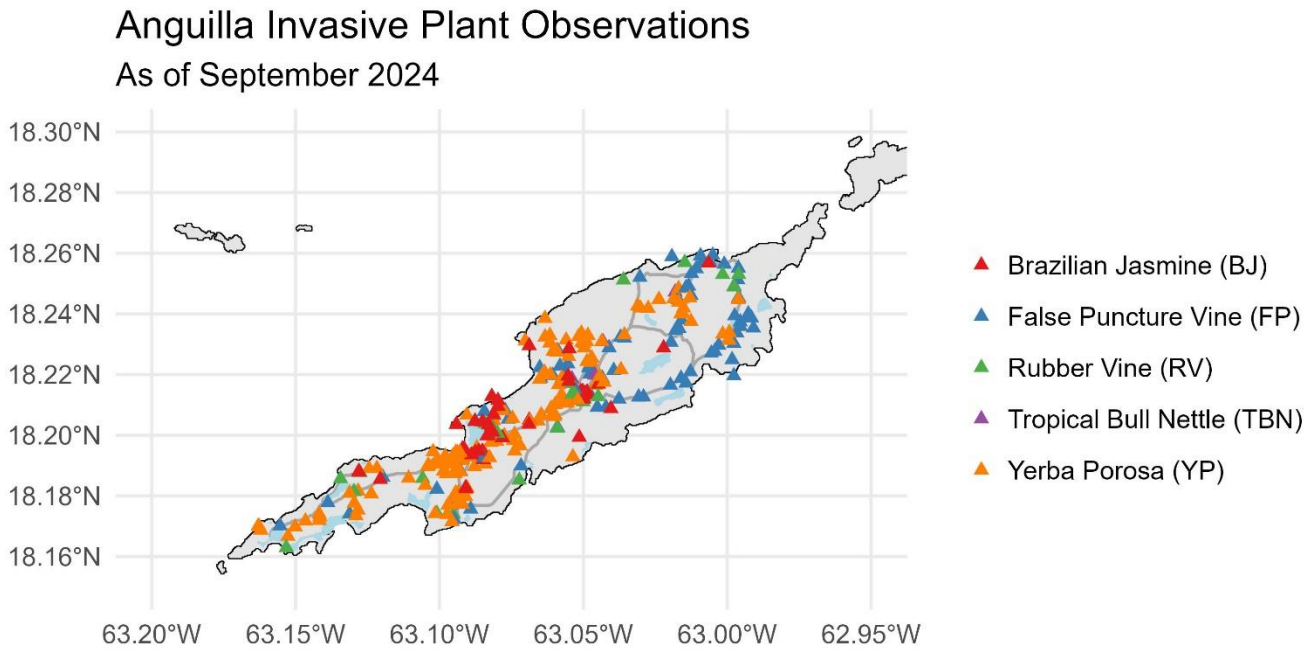
visiting. Little Scrub was also excluded for these reasons, as well as the existence of a detailed vegetation list for this cay[4], which does not include any of our focal species.

To prevent the spread of these five species, and other potential invasive plant species, to the offshore cays, we are working on developing an inter-island biosecurity protocol as an output of this project. A consultant is being contracted to put together this document and the anticipated completion date is December 2024.

[4] K.C. Lindsay. 2021. Suggestions for Restoring and Maintaining Plant Cover on Little Scrub Island, Anguilla and Protection of Natural Habitat at Fountain Cavern.

Current Species Distribution

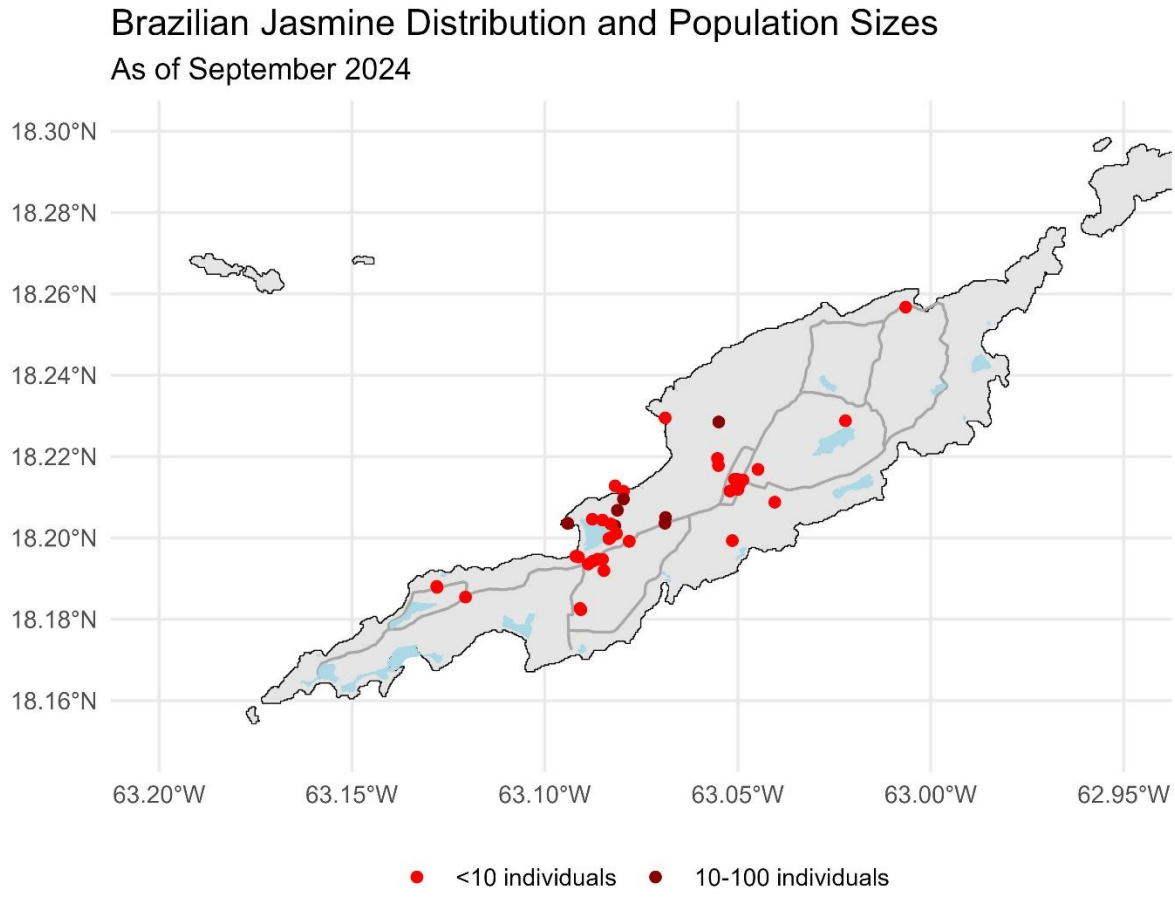
The general distribution of the five focal species across the main island of Anguilla is shown below. We did not detect our focal invasives on any of the offshore islands we visited. Updated observations for some species, in particular the Brazilian jasmine, can be found on the project's iNaturalist page.



Overall, our focal invasive plants are distributed across all of mainland Anguilla, in all communities and across a range of ecosystems. Yerba porosa was the most frequently found species, with 155 detections so far, while the tropical bull nettle is the least common with three known locations.

Species	**Number of observations (from survey efforts)**
Brazilian Jasmine	50
False Puncture Vine	90
Rubber Vine	26
Tropical Bull Nettle	4
Yerba Porosa	155

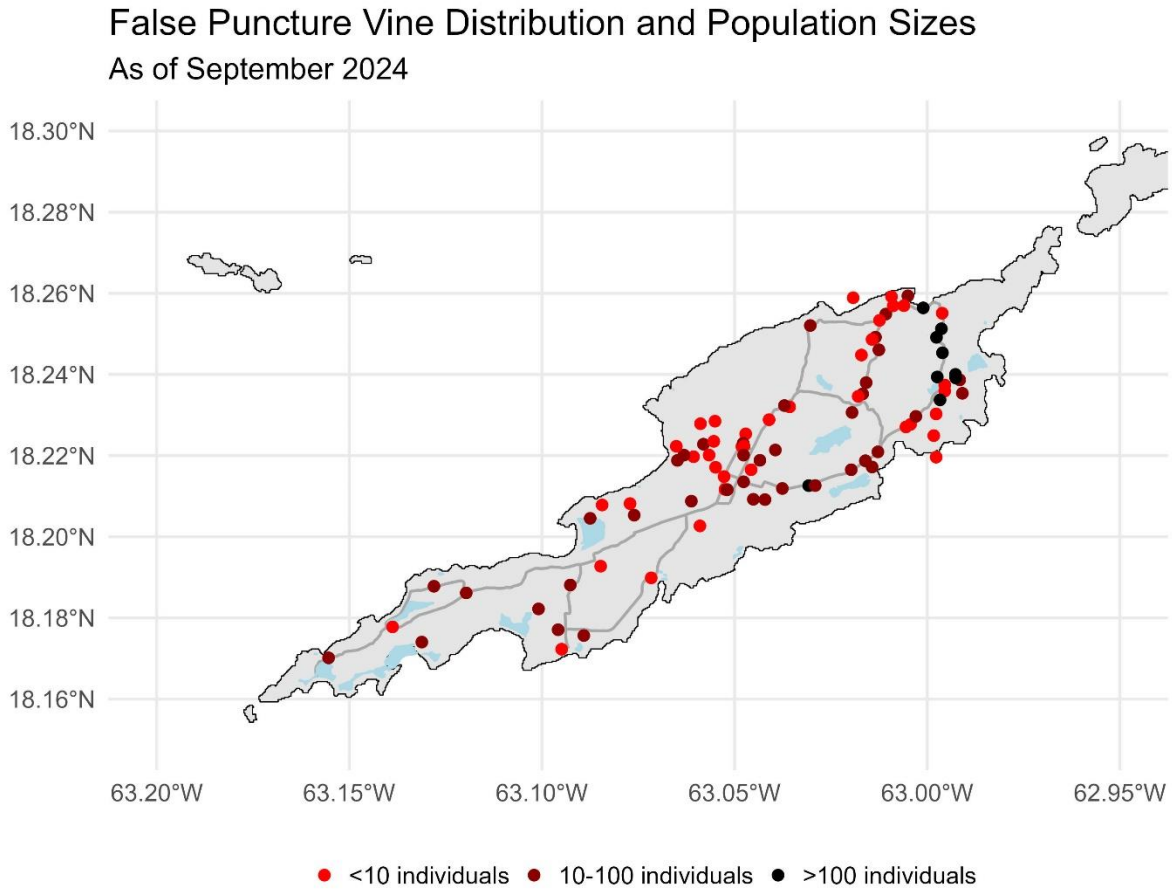
Brazilian Jasmine



For the first year of project surveys, Brazilian jasmine proved to be rather elusive and was not detected until late May 2023, when it was spotted in the Sandy Ground area on an unrelated outing with the ANT. After this confirmation that it was indeed present on island, we redoubled survey efforts and revisited some key areas in search of the species. Targeted areas included South Hill and Sandy Ground, and hotel grounds in Shoal Bay and West End, all of which were either suggested as potential sites for the jasmine during the training workshop or were sites where other species of jasmine were previously reported (e.g., *Jasminum officinale, J. laurifolium*).

To date, we have found Brazilian jasmine populations as far east as Island Harbour and as far west as Long Bay. It is most concentrated in the center of the island particularly The Valley and surrounding areas including The Quarter and Sandy Ground. The plant is much more widespread than we anticipated, and forms dense thickets that climb over the other vegetation and often extend further into the vegetation than we can see from the road. Given its dispersal by birds and already widespread distribution, management of the Brazilian jasmine does not appear likely at this time.

False Puncture Vine

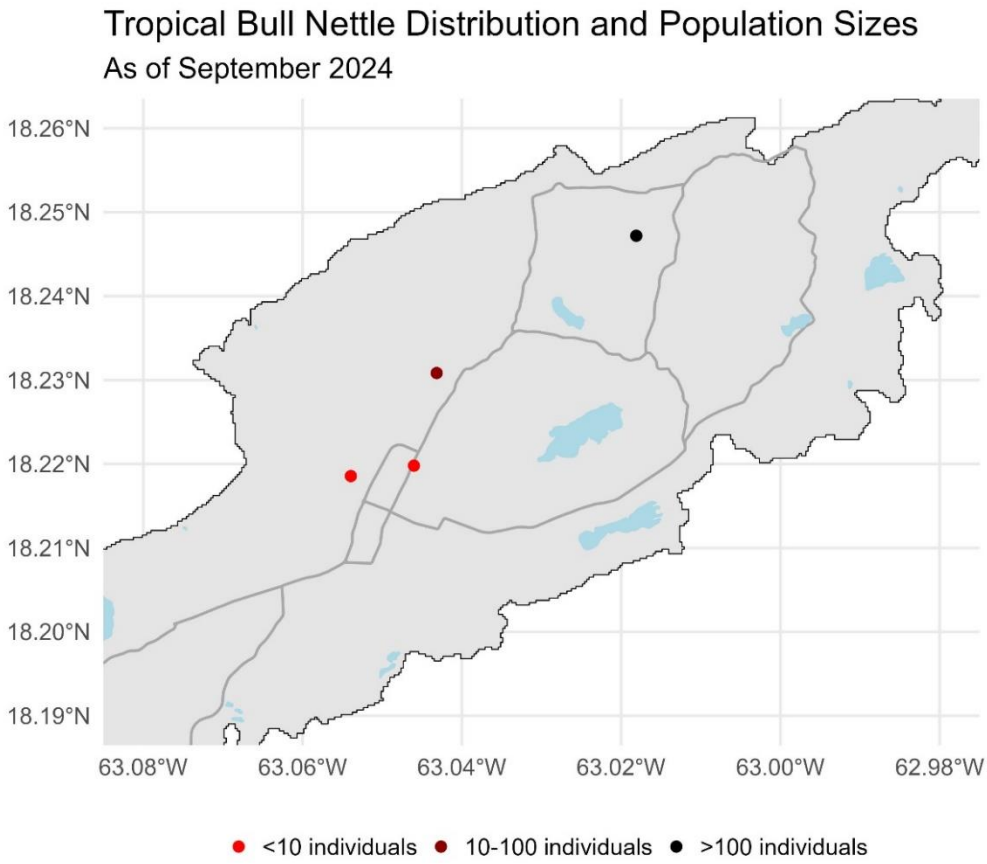


This low-running vine is very widespread across Anguilla, especially along roadsides and within private yards. When not flowering, the leaves are easily confused with other ground vines (like *Mimosa pudica*), but their bright yellow flowers are distinctive when present; flowering begins in the mid-rainy season (around late June). Anecdotally, we have received several reports of false puncture vine within people's yards and properties, especially noting the "stickiness" of the seeds as they catch onto shoes and are carried into the house.

Given this species' widespread distribution and dispersal by vehicles and foot traffic, management is unlikely. There are two documented biocontrol agents for the false puncture vine, namely *Microlarinus lypriformis* and *M. layeynii*[5], two species of weevils, which should be explored by the DNaR as an option for long-term control of the population.

[5] Great Britain Nonnative Species Secretariat. 2020. Invasive Species Management Plan: Eradication of the false puncture vine *Tribulus cistoides* from Anguilla.

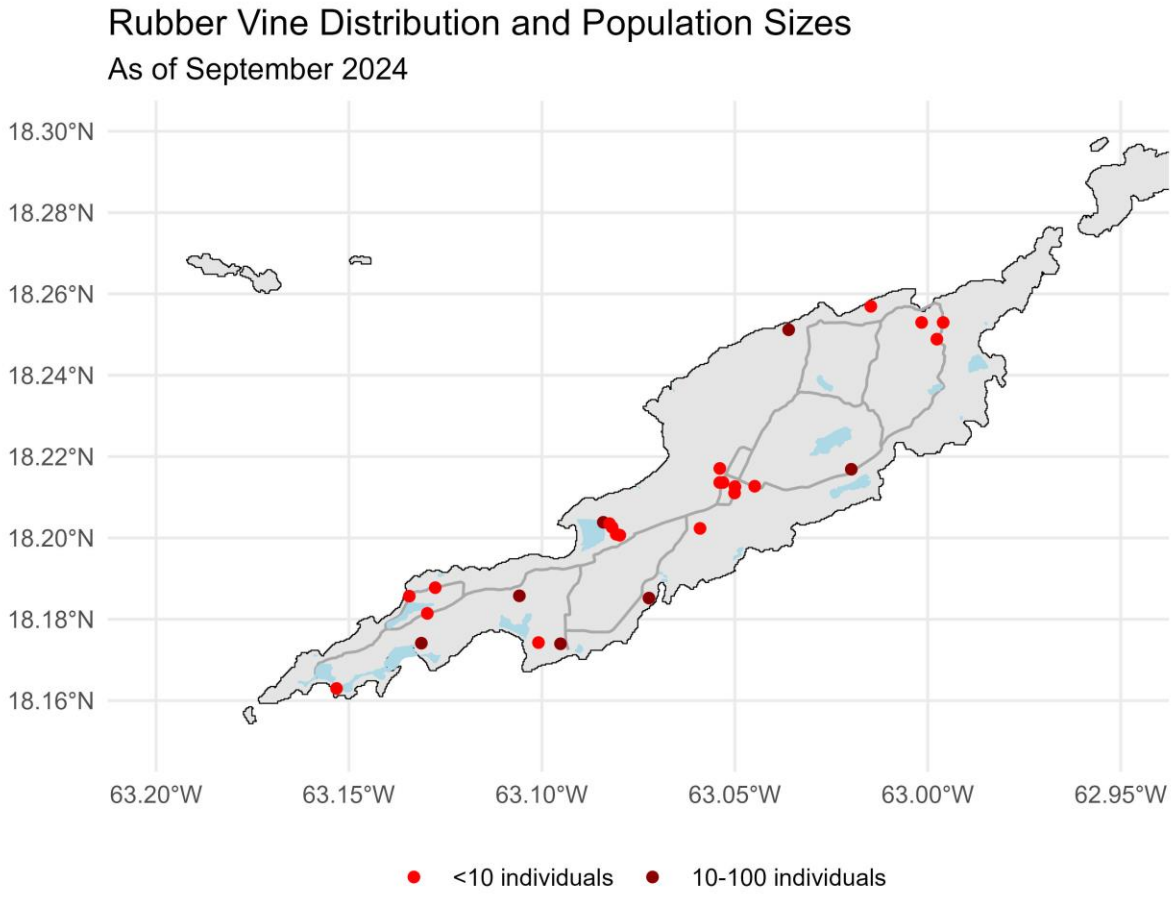
Tropical Bull Nettle



The tropical bull nettle is currently confirmed at four sites on Anguilla, and this limited distribution is fortunate, as it is the most dangerous plant targeted under this project (from a human health perspective). The approximate sizes of the populations, before any eradication action was taken, was 80 m^2, 1,450 m^2, 620 m^2, and 310 m^2 for the Valley, Welches, North Side, and Tackling respectively. One population is contained within the government-managed Agriculture grounds in the Valley, while the other three are on private property. The Tackling population was not found until May 2024, about 6 months after treatment began at the other sites.

In October 2023, we evaluated the feasibility of eradicating this species based on the data we had collected to date, and determined that eradication is possible within our timeframe. We contacted the private landowners and received permission to survey their lands and to treat the species, and have been carrying out herbicide treatments since November 2023. We are still diligently conducting surveys and following up on all suspected reports of the species, as we want to ensure we are aware of and treating all populations of the species to increase our chances of eradication success. Monitoring and follow-up treatments for the tropical bull nettle are ongoing.

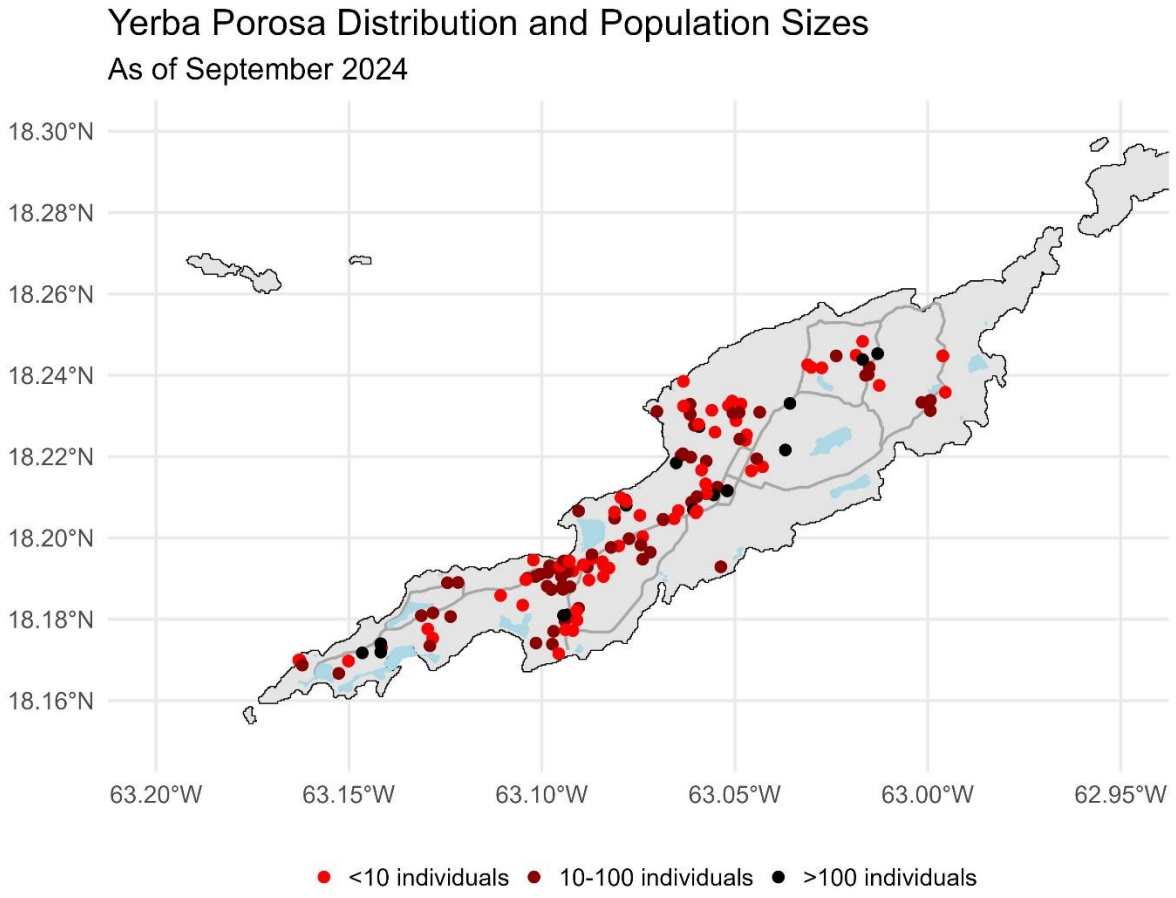
Rubber Vine



The rubber vines (*C. madagascariensis* and *C. grandiflora*) are widespread in Anguilla, especially as they are widely planted as ornamentals. Most populations we have found are either within private property or just outside, where they appear to have "jumped the fence". One population, in the Long Path area, is just outside the fence of an apparently abandoned plant nursery, with the rubber vine plants within the fence still in nursery pots. In other areas, there are individual plants far away from obviously cultivated ones, suggesting that the species' airborne seed dispersal is contributing to natural establishment in new areas. Some vines were identified high in the canopy of mature trees (15−20 ft. high) so it is possible that there are even more plants that we have not yet noticed due to their position in the trees.

We have not yet identified our rubbervine observations to species to determine which ones are *C. madagascariensis* and which are *C. grandiflora*, but we aim to do so once we finalize our diagnostic key. Either way, however, because of their value as ornamental plants, management will be difficult, and for now, we are encouraging persons to plant similar-looking native plants instead of the rubbervines.

Yerba Porosa



Yerba porosa is widely distributed, especially in pasture areas and along roadsides, forming dense patches in some places. The species is still identifiable when dry, as a single stemmed brown herb with distinctive seeds and scent, but can be confused for other similar dried out herbs in the dry season. As of mid-July, new growth of green plants has made them easy to identify once more.

Control of this species is unlikely, but we are encouraging persons to use it as an herb, as it is used in some other parts of its range.