

# Puerto Rico: Ecological and Human Resilience

Puerto Rico Service Learning Trip, Summer 2022

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## N.E. Ecological Corridor

Even four years later, the damage Hurricane Maria had on the local ecosystems was undeniable. Heavy rainfall and soil saturation weakened many larger trees and due to the natural climate, vines and smaller plant growth significantly increased. In the Northeast Ecological Corridor, our work focused on cutting these low hanging branches and clearing mangrove areas in an effort to support resiliency. Having a healthy mangrove forest benefits water quality, the soil capacity for future flooding/rainfall and provides a sanctuary for other plants and animals.



## Projects

With the help and guidance of Dr. Ricardo J. Colón-Rivera and Edgardo Gonzalez our group was able to create forest stand improvements by cutting (primarily using pruning sheers) vines and branches around four feet from the ground. By trimming at this height, it effectively prevents future growth of unwanted species and encourages mangrove growth. The image above shows the trees after being cleared from vines. On top of this specific project, we also worked with species that benefited from mangrove health — specifically the Puerto Rican parrot. Increasing efforts that will allow stronger hurricane resiliency will benefit all these species. We learned that large scale deforestation practices in the past negatively impacted the number of both mangroves and the parrots. Although these two projects were through different organizations, it was clear to see the interconnectedness of the ecosystem in Puerto Rico.



The two photos above thanks to Wanda Crannell

## Impacts

- Agricultural expansion throughout the 1800s into the early 1900s decreased mangrove dense areas by 45%.<sup>1</sup>
- Fragmentation and wetland conversion due to urban expansion in the later 20th century has also contributed to mangrove loss.
- However, mangroves are extremely resilient and with legal protection and restoration efforts.
- Understanding the protection mangroves offer to communities and birds is undeniable and these projects demonstrated that.

The areas and communities we got to work with showed incredible resourcefulness and resiliency. Even working with the plants and animals themselves demonstrated strength in regenerating. Our group was even lucky enough to witness the first Puerto Rican parrot chick fledge. Being in the presence of a critically endangered species that had bounced back time and time again showed a level of resilience and management/conservation efforts that I've never seen before and something I am confident that I want to be a part of in the future.

## Looking Forward

The projects themselves evolved while we were there. For a while, the work with the Puerto Rican parrot was a specific group of people, however during the last couple days a lot more of the group was able to partake. I'm grateful for the flexibility in all the projects and the leadership skills that were shown truly inspired me. These projects showed me the level of change that can happen with dedication and also allowed me to make interdisciplinary connections between my passion of birds, law and policy, and my career goals.

## Acknowledgements & References

<sup>1</sup>: Martinuzzi, S., Gould, W. A., Lugo, A. E., & Medina, E. (2009). Conversion and recovery of Puerto Rican mangroves: 200 years of change. *Forest Ecology and Management*, 257(1), 75–84. <https://doi.org/10.1016/j.foreco.2008.08.037>

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