

Texas A&M University Galveston Campus & Punta Cana Ecological Foundation Dominican Republic Study Abroad Experience

Abstract

Graduate and undergraduate students from Texas A&M University Galveston Campus will be given the opportunity to travel, study abroad and work with the Punta Cana Ecological Society on projects that would extensively supplement their education and field work experience. The projects, described in detail below, would include coral reef restoration, lobster house construction and deployment, lionfish population management, Ridgway's Hawk habitat and protection, and the Zero Waste Initiative.

Grupo PUNTACANA and the Puntacana Ecological Foundation

Founded in 1969 by Ted Kheel and of his partners, Grupo PUNTACANA (GPC) was awarded approximately 30 sq. miles of undeveloped land in eastern Dominican Republic with the vision of creating a network of luxury resorts which would influence the local economy and increase tourism. It wasn't long after the creation of this developmental company that the environment was realized to be a necessity if a business in that area desired to remain profitable.

The Puntacana Ecological Foundation (FEPC), formed in 1988, is a not-for-profit entity which focuses on the protection and restoration of natural resources in the Punta Cana region and contributes to the sustainable development of the Dominican Republic. The FEPC and GPC form a close partnership led by FEPC's executive director and GPC's environmental director Jake Kheel, a close descendant to the aforementioned Ted Kheel.



PUNTACANA Center for Sustainability (www.puntacana.org)

FEPC Environmental Outreach Programs

Coral Reef Restoration

Endangered reefs off Punta Cana straddle the Mona Passage, which separates the Atlantic Ocean from the Caribbean Sea. In an effort to protect these reefs, the foundation paired up with the University of Miami Rosenstiel School of Marine and Atmospheric science and Counterpart International to develop in-water coral nurseries in Punta Cana's protected areas, then outplanting nursery-grown coral fragments back onto the reef to help reverse degradation by pollution, disease, siltation, human activity and other threats. (Uzzo)



Lobster House Construction and Deployment

The spiny lobster is important both ecologically to the coral reefs, as well as economically to the Dominican Republic and the Caribbean. The state of declining lobster populations throughout the Caribbean has resulting in a fishing ban during the spring reproductive season. Meanwhile, Mexican fishers have successfully implemented lobster casitas in their native Sian Ka'an region of Mexico, which are fixed concrete lobster traps that are placed away from sensitive coral reef areas damaged by conventional lobster fishing areas. The foundation facilitated an exchange program between these Mexican fishers and those of the Punta Cana region to demonstrate how to build a sustainable lobster fisher in Punta Cana that does not damage coral reefs. This has resulted in a management program for the spiny lobster to restore local populations within the reef while preserving the livelihood of the lobster fishers. (Uzzo)

Lionfish Population Management



The FEPC also initiated a lionfish control program through the commercialization and consumption of the invasive species in restaurants with scientific oversight of the Regional Commission for Lionfish Control. Lionfish are invasive to the Caribbean and consume a broad spectrum of reef fish exacerbating the decline of reef diversity and posing a serious, long-term hazard to the health of the reef. In response, the foundation has instituted a program which helps local fishers locate groups of lionfish through a network fixed cameras and deployable sensors. (Uzzo)

Ridgway's Hawk Conservation

The foundation has also teamed with the Peregrine Fund in an attempt to save the globally endangered Ridgway's Hawk from extinction. These raptors are unique to Hispanola and have diminished to only a small number of breeding pairs restricted to the Los Haitises National Park because of hunting and loss of habitat. FEPC is increasing their population through controlled relocations into the Punta Cana region coupled with the comprehensive environmental monitoring and education program and it is hoped that a viable breeding population will be established in the foundationally operated Indigenous Eyes Preserve. (Uzzo)

Zero Waste Initiative

The goal of the Zero Waste Initiative is not just to provide compost to agricultural operation, but to improve the classification of waste at the source to reduce sorting and eliminate landfill practices altogether, redirecting it into 100% renewable and recyclable production streams. (Uzzo)

Vision

Students from TAMUG would not only have the opportunity to gain experience in preexisting programs described above, but also the establishment of instructor and graduate student led research projects that follow,

Sargassum Conversion to Beneficial Resources

The Dominican Republic usually experiences a moderate amount of Sargassum landing across its eastern coastline each year due to the natural current circulation through the area but has been experienced a much heavier season in 2015. Much like the general reaction to the heavy Sargassum season that Galveston experienced during the summer of 2014, the people of Dominican Republic are seeking to remedy their similar situation. Students and instructors from TAMUG would establish a program designed to educate and assist in the conversion of Sargassum into resources that locals will find beneficial, such as fish food and nutritional foundations for sea grass dunes.

Neritic Waters Nutrient Testing

As an expansion of a current project being led by Dr. Tom Linton, groups will be deployed into the waters just off the coastline of the Dominican Republic to gather and analyze water samples for nutrient and oxygen content in an attempt to better understand what factors contribute to the growth of Sargassum and indicative precursors to its arrival.

Local Fisheries Development and Outreach

Due to overexploitation of the local environment, populations of fish indigenous to the region and commonly sought after to be sold at market are dwindling at best. Students from TAMUG, working closely with local fisherpersons and fisheries, will work to develop and implement a process with the goal of improving the health of the current fish stock and expand fishery populations.

Existing University Programs in the Punta Cana Region

Cornell University

Cornell University operates its Minorities Research Training program funded by the National Institutes of Health (NIH) to support undergraduate research in biodiversity, along with undergraduate courses in ornithology from the Cornell Laboratory of Ornithology.

Harvard University

Harvard University runs the Consortium for Caribbean Biodiversity committed to improving scientists understanding of insects and plants of Hispaniola and the Caribbean, as well as running sustainable architecture courses for Harvard and Syracuse University.

Leiden University

Located in the Netherland's city by the same name, Leiden University is conducting archeological research in the nearby El Cabo area.

References

Uzzo, S. M. 2013. Puntacana Ecological Foundation and the scaling of sustainable tourism development. *Ecology and Society* **18**(4): 73. <http://dx.doi.org/10.5751/ES-06259-180473>

PUNTACANA Ecological Foundation. (n.d.). Retrieved July 9, 2015.