

## Guánica Forest Biosphere Reserve Wildland Core Site Guánica, Puerto Rico 17.9605N 66.84238W

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[www.gobierno.pr/DRNA/RecursosForestales/Bosques/BosqueGuanica](http://www.gobierno.pr/DRNA/RecursosForestales/Bosques/BosqueGuanica)

**History:** Early Taino people and Spanish colonizers used the forest as a wood source and had small settlements within its boundaries. The king of Spain declared it royal property and had its forest resources surveyed in the 1800s. This decree saved the forest from widespread clearing, although some farming, ranching, and cutting for firewood and charcoal did occur. In 1919 the forest was designated a reserve by the US government. The forest was designated a Biosphere Reserve in 1981. American research history began with Gleason in the 1920s.

**Key Contribution to Domain and Continental issues:** Guánica Forest will be useful for land use, invasive species, climate change, biodiversity, biogeochemical, and infectious disease studies. The site is proposed as a Core Wildland Site that represents the domain and anchors land use, elevation, and precipitation gradients. The forest is highly tuned to seasonal and episodic rainfall events and is expected to respond strongly to climate change in nutrient cycling, phenology, and carbon balance. The forest experiences frequent hurricanes. We have a good understanding of hurricane damage and recovery in forest growth and structure following Hurricane Georges in 1998. Hurricanes are the most common disturbance, but fire is invading the forest as exotic grasses spread. The forest shares a seasonally dry climate and dominant native and exotic species with South Florida and the Virgin Islands and therefore can represent the whole domain.

**Key Characteristics:** Excellent example of dry forest life zone. Forest cover is now a mosaic of mature native forest of > 100 y old, and secondary forests dominated by native and introduced species. The secondary forests have developed on agricultural lands abandoned over 60 years ago and are dominated by exotic legume species. Site shares both native and exotic species with South Florida and the Virgin Islands. Forest is home to endemic and endangered plant, reptile, amphibian, bird, and insect species. Soils are mollisols derived from limestone formed from marine deposits. Karst features are characteristic of domain and many low-lying and coastal tropical areas. The soils are extremely low in bioavailable P and high in organic matter. Intermittent streams carry large amounts of debris to coastal systems during heavy rains. Cactus species are currently under attack by *Cactoblastis cactorum* moth and a mealybug species. Mosquitoes vector dengue fever. Invasive *Bufo marinus* and mongoose negatively affect native, endemic, and endangered birds and herptile.

**Existing Infrastructure:** Aerial photos available for the area since 1936. Long term forest structure, tree growth, and disturbance response plots have been studied since the early 1980s. Breeding bird surveys have been performed in Guánica Forest for over 30 years. Site has three weather stations and seismic network sensors. Research conducted in the forest by 4 universities in PR, US Forest Service, US Fish and Wildlife Service, University of Pennsylvania, and others.

**Facilities:** On-site educational/conference center with a second one planned. Internet and phone at main office. Water and electric on site. Forest roads are gated and locked. Greenhouse and work/storage areas available. Hotels and guest houses available at the forest boundary. Two small houses available to develop for lab and on-site lodging.

