



HAITI NATIONAL TRUST



SOCIÉTÉ AUDUBON HAÏTI

# Ecosystem Restoration in Grand Bois National Park

Haiti

Restauración Ecosistémica en  
el Parque Nacional Grand Bois

Haití

Anne-Isabelle Bonifassi & Joel C. Timyan



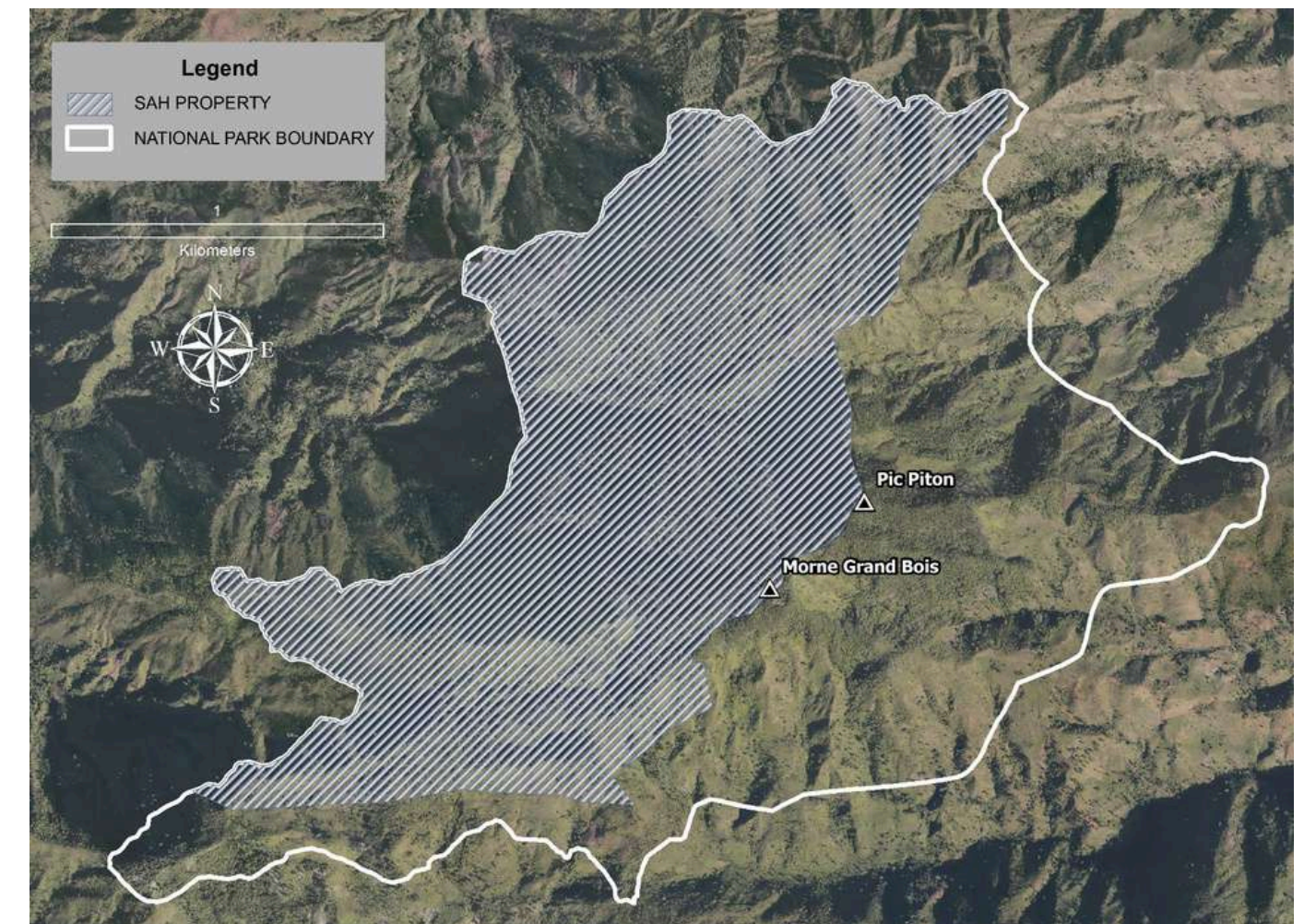
# Background

## Grand Bois National Park

- Tiburon Peninsula in southern Haiti, Massif de la Hotte
- Declared protected area in 2015, 370 hectares
- Ownership: SAH/HNT owns 205 hectares (2019)
- Governance: Ministry of Environment through the Agency of Protected Areas (ANAP)
- No involvement or protective efforts by the government
- **Management Shift:** 2020, management delegation contract between HNT/SAH and the Haitian government



**Grand Bois National Park**  
Parque Nacional Grand Bois



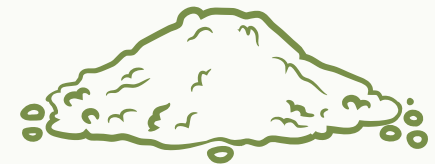
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## Ecosystems & Habitats

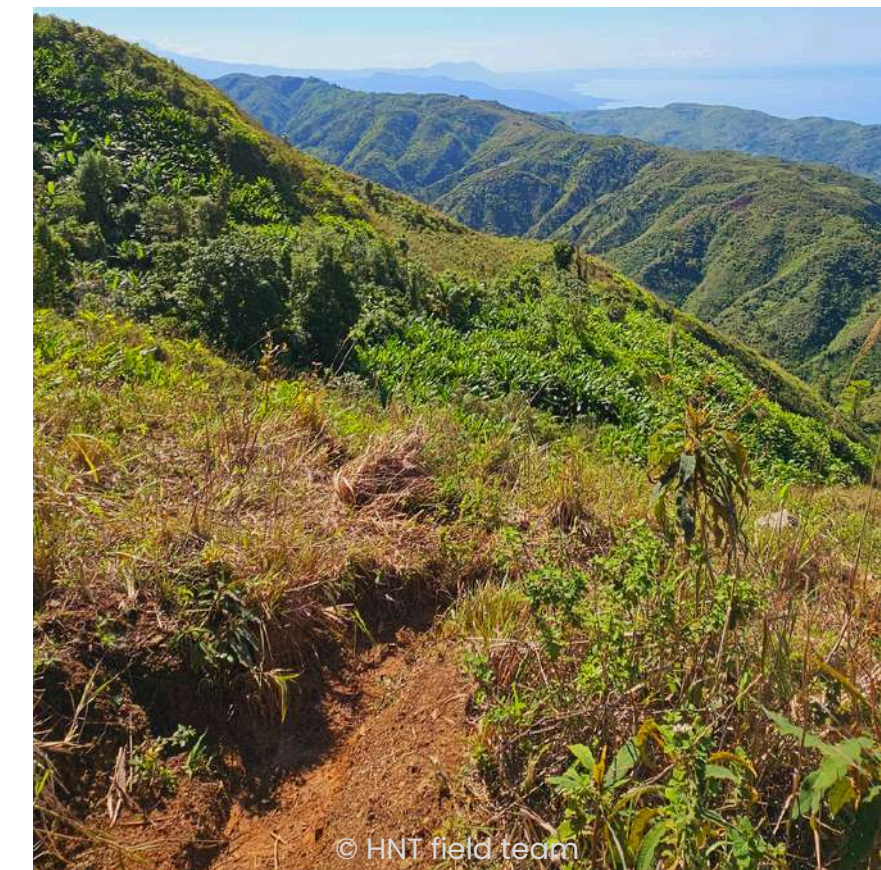
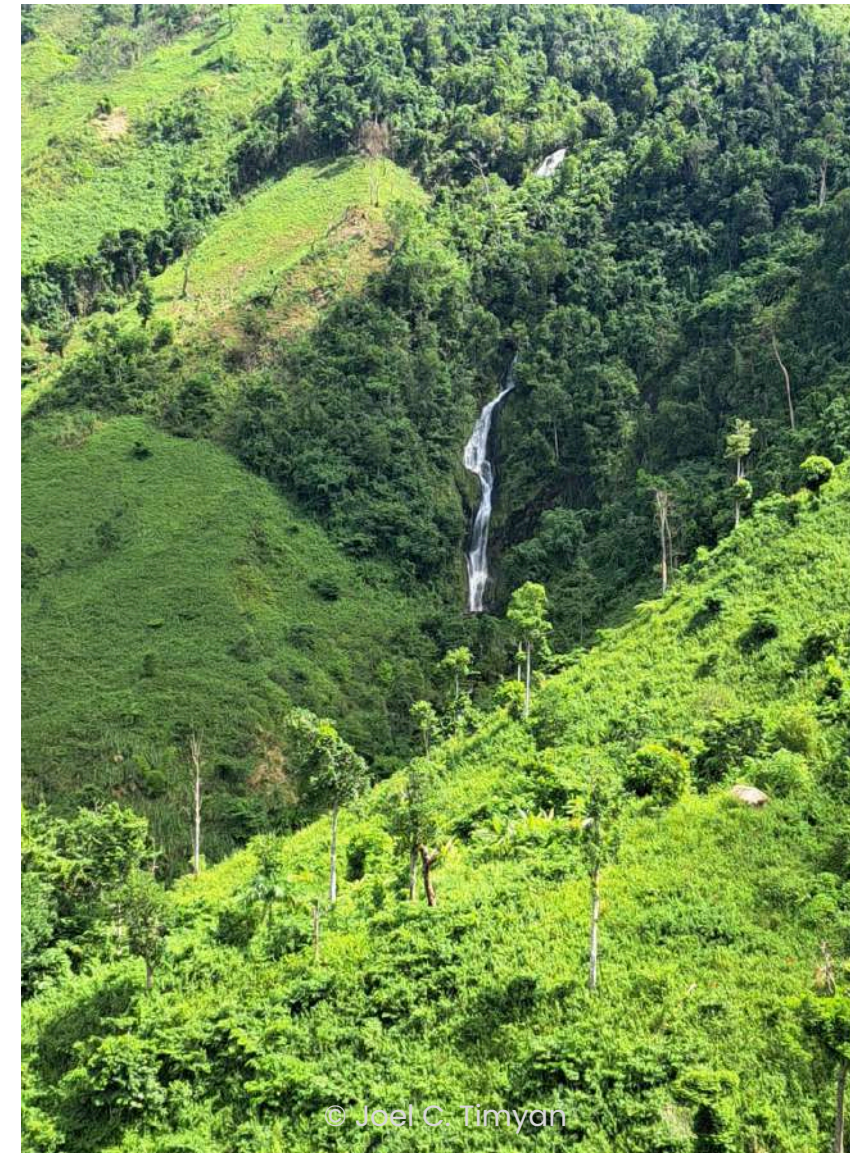
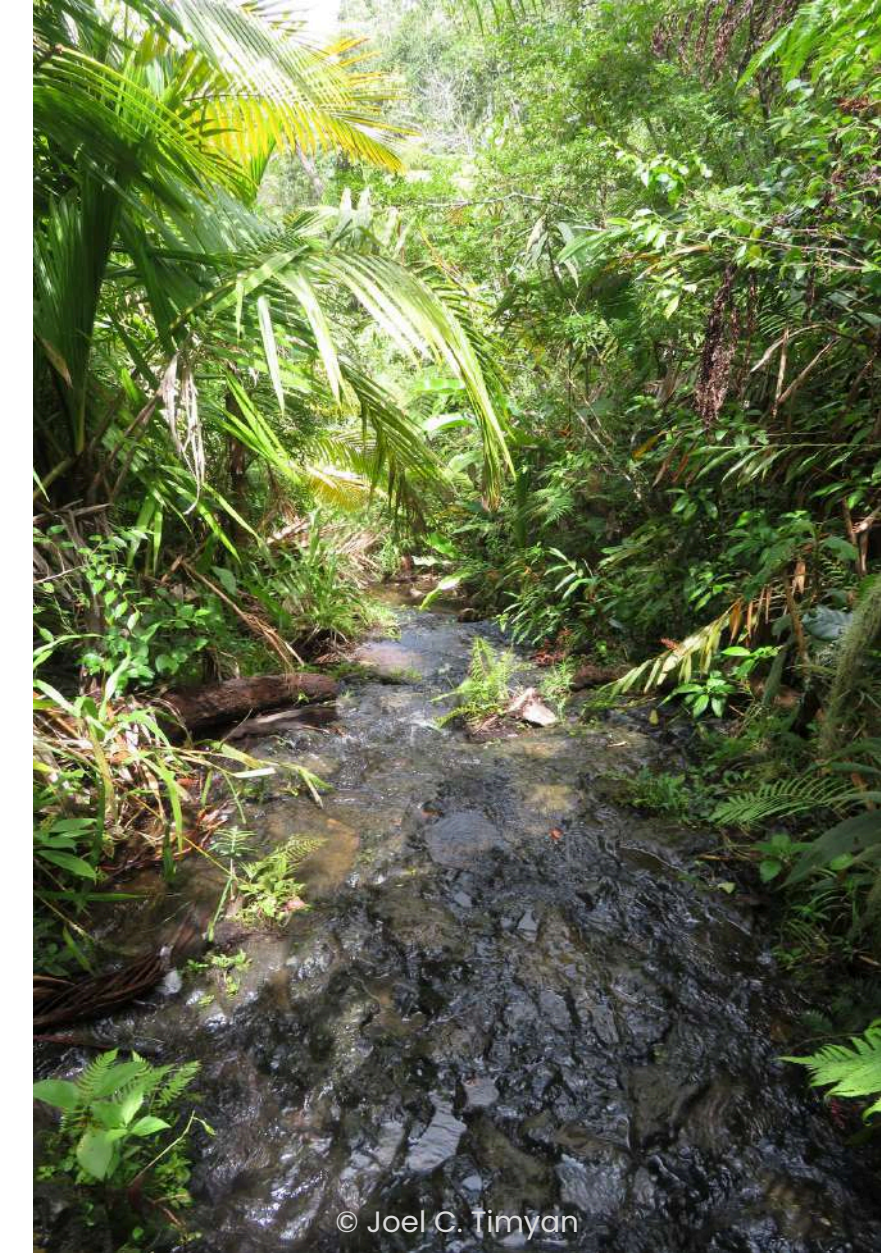
- 77% forest cover in 2000 (287 ha)
- Primary habitats: Rain forests
- Subtropical Lower Montane Rain Forests (higher altitudes), Subtropical Rain Forests (lower elevations)
- Highest peak at 1,256 meters



Annual rainfall: 1600 to 2400 mm



Soils: Diverse composition of soft and hard limestones, serpentine, and laterite



# Background

## Drivers of Biodiversity Loss



Land use: Housing, agriculture, livestock grazing



Resource exploitation: Wood cutting mostly for lumber and charcoal production



Human migration: Travel through forests to reach remote locations



Others: Non-native invasive species, Wildlife poaching, Natural disasters (hurricanes, earthquakes, landslides, wildfires)



# Fauna & Flora

## And IUCN Status

	Total	NT	CR	EN	VU
<b>Birds</b>	<b>48</b>	1			4
<b>Plants</b>	<b>498</b>	1	3	12	6
<b>Reptiles &amp; Amphibians</b>	<b>39</b>	3	16	4	5
<b>Invertebrates</b>	<b>1</b>				1



*Phoenicophilus poliocephalus* (NT)  
Chales Davies (ebird)



*Magnolia ekmanii* (CR)  
Eladio Fernandez



*Aegiphila nervosa* (NT)  
Martin Reith



*Anolis monticola* (VU)  
Jurgen Hoppe



*Eleutherodactylus semipalmatus* (CR)  
Miguel Landestoy



*Epilobocera haytensis* (VU)  
Joel C. Timyan

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1 endemic to Haiti: Grey-crowned Palm Tanager (*Phaenicophilus poliocephalus*) - NT



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Key protein sources for cuckoos and raptors.  
 All endemic to Hispaniola - 60% frogs are La Hotte  
 endemics



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→ Hispaniola freshwater crab (*Epilobocera haytensis*)



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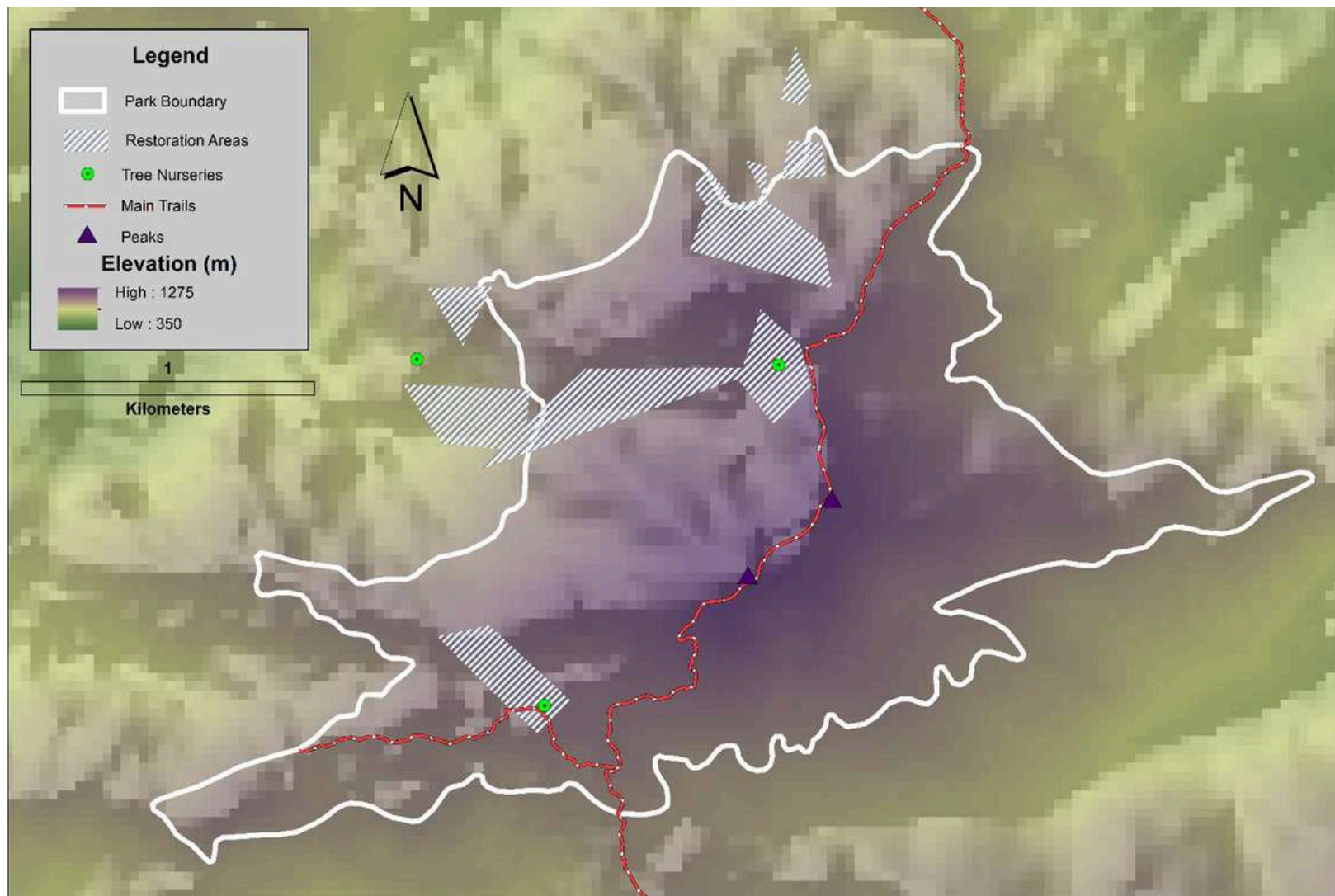
***Eleutherodactylus semipalmatus*** (CR)  
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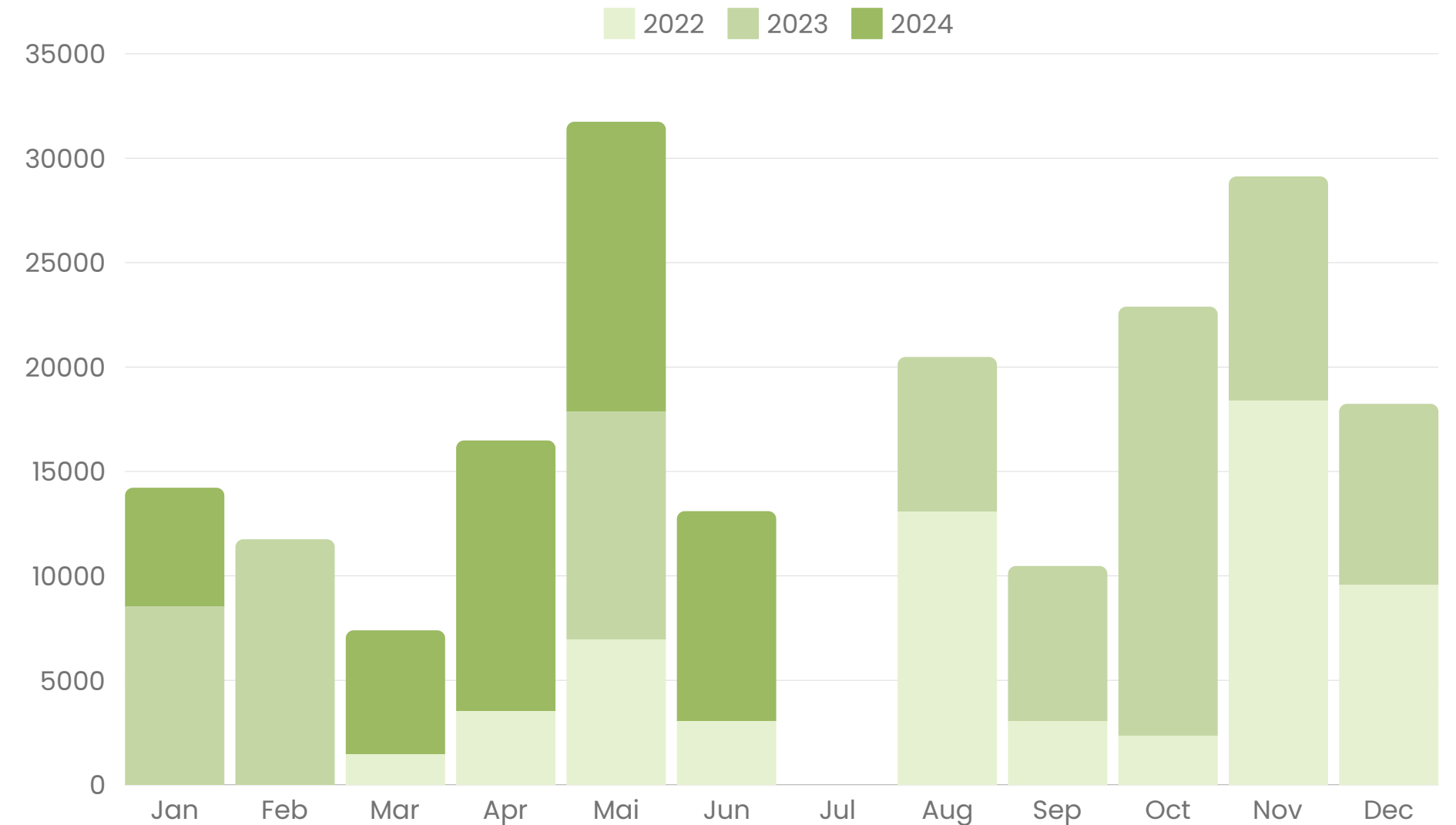
***Epilobocera haytensis*** (VU)  
Joel C. Timyan

# Conservation & Restoration efforts

Reforestation areas 2022-2024  
Áreas de reforestación 2022-2024



Reforestation in GB (Number of Plants)  
Reforestación en GB (Número de Plantas)



**+ 196,000 plants**



**43 ha**



**24 species**



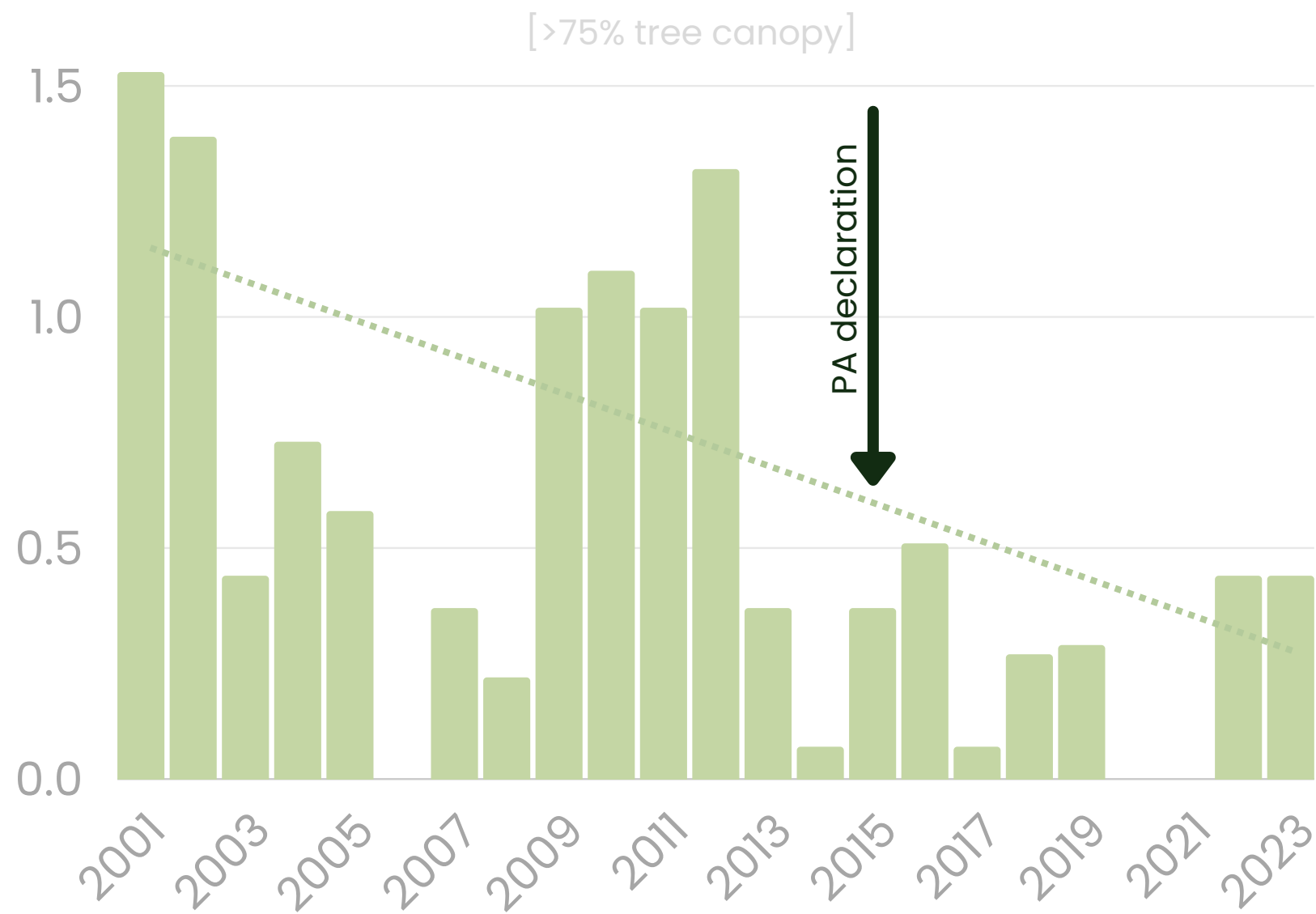
**Forest rangers**



# Environmental Survey & Findings (2023)

## Forest Cover

**Grand Bois forest loss (Ha)**  
Pérdida forestal en Grand Bois (Ha)



- 23-year period: 13.7 hectares deforested (3.7% of the park)
- Natural forest cover: stable, deforestation on the decline for the park as a whole
- Deforestation occurs where land pressure is greatest
- Areas cleared: relatively small & rapid recovery

**Recovery of forest ecosystem in GB (9 years)**  
Recuperación del ecosistema forestal en GB (9 años)



Source: Global Forest Watch

\*Deforested plot: tree cutting, drought, wind damage, landslides etc.

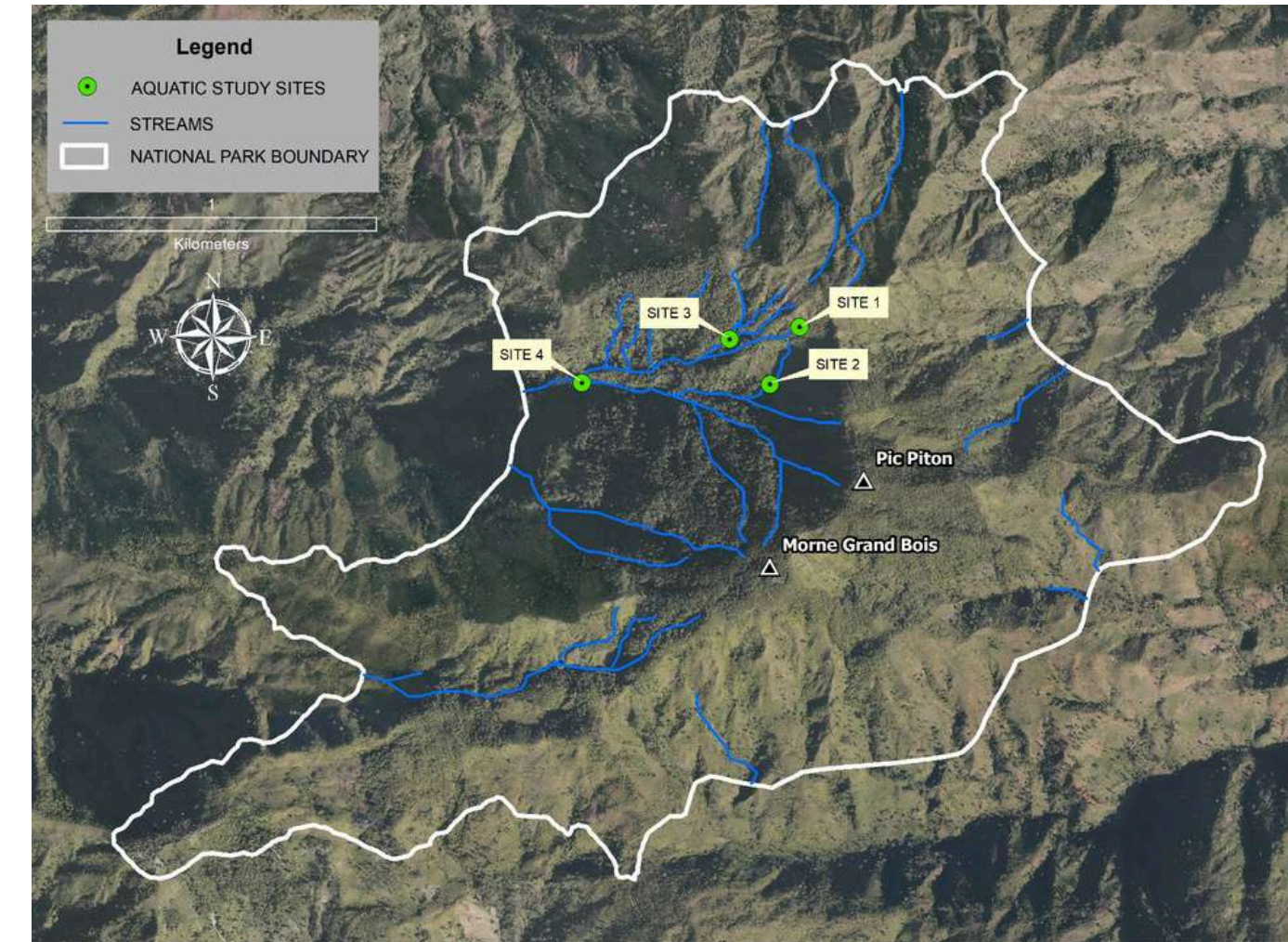
\*\*Natural disasters have played an insignificant role in the loss of forest cover

# Environmental Survey & Findings (2023)

## Springs & Riparian Ecosystems

### Streams in Grand Bois Arroyos en Grand Bois

Sites	E. coli Contamination	Water quality	Habitat quality	Threats
1	High	Good	Highly disturbed	Fecal sources, invasive plants
2	Low	Excellent	Partially disturbed	Sedimentation, invasive plants
3	None	Excellent	High quality	Crab harvest
4	Low	Excellent	High quality	Crab/Shrimp harvest



Year-round availability of water & food resources: important for birds that migrate to GB during the North American winter or during the local dry season.

*Also true for the locals that migrate up to the park with their animals when forage is no longer available in low elevations – a threat to the park*



Site 1



Site 2



Site 3



Site 4

# Birds & Forests

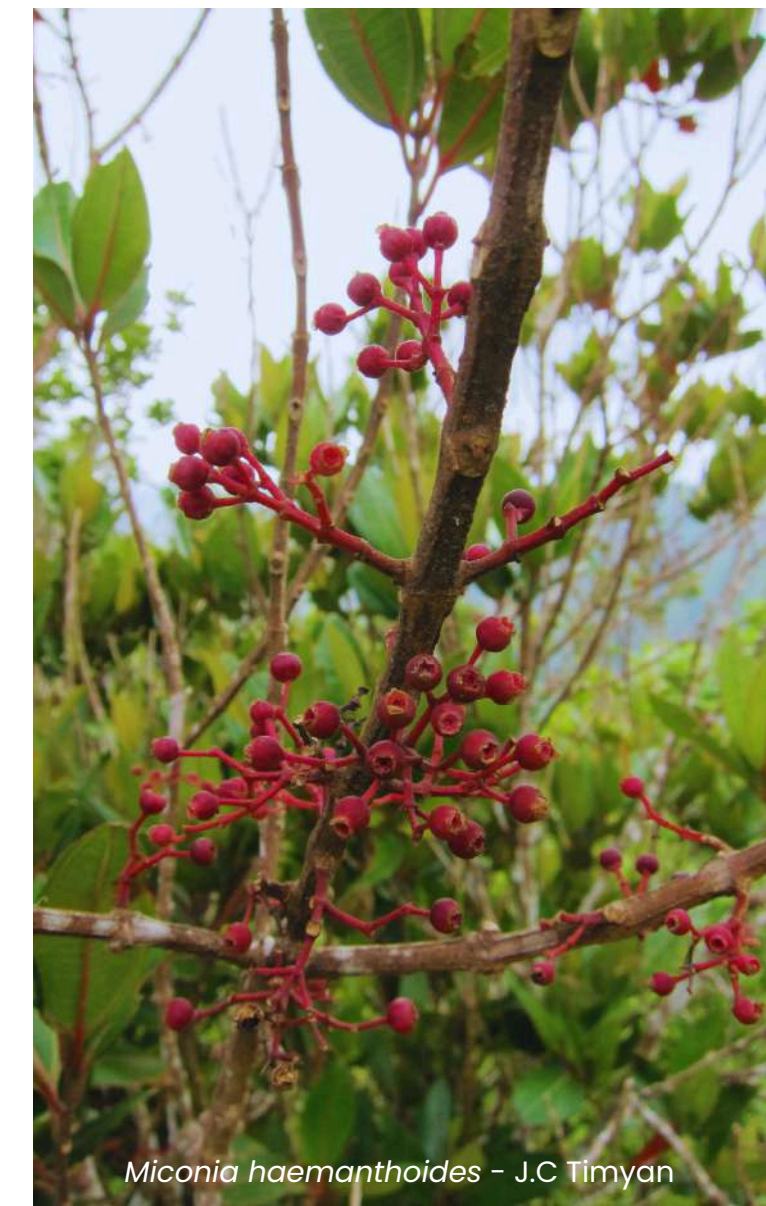
- Important seed dispersers: spread native species outside the park
- Enhance germination of many species difficult to germinate in the nursery (eg. *Zanthoxylum*, *Ocotea* spp)
- Selection of restoration trees/shrubs that attract birds
- Create their own tree nurseries where they perch and discard fruit & seed
  - At GB, seed collectors gather seeds of *Prunus* species discarded by birds under the canopy
  - For certain species (eg. *Calyptronoma rivalis* palm), all fruit is consumed by wildlife, leaving nothing for our nurseries



*Guarea guidonia* – Joel C Timyan



*Prunus occidentalis* – Joel C Timyan



*Miconia haemanthoides* – J.C Timyan



*Ocotea coriacea* – Joel C Timyan

# Birds & Habitat Quality

- Several plant species provide abundant fruit in GB for birds (and bats) – eg. *Didymopanax morototoni*, *Ocotea* spp, *Guarea guidonia*, *Anthurium scandens*, *Dendropanax arboreus*
- Some species fruit abundantly throughout the year (eg. *Miconia*, *Phoradendron*, *Schefflera*, *Prestoea*) – important when preferred fruits are not seasonally available

*Tabebuia conferta* – Eladio Fernandez



*Mellisuga minima* – Simon Best (ebird)



Nectar of *Tabebuia conferta* (EN) is an important food source for bees and hummingbirds.

3 hummingbird species in GB

*Prestoea acuminata* – Joel C Timyan



*Amazona ventralis* – Jim McCormick (ebird)



An important food source of the Hispaniola Parrot (*Amazona ventralis*) is our most common palm in Grand Bois (*Prestoea acuminata*)

Also a source of thatch for roofing & palm heart

*Heliconia bihai* – Joel C Timyan



Hispaniolan mango – Matthew Garvin (ebird)



Hispaniolan mango (*Anthracothorax dominicus*) is primary pollinator for *Heliconia bihai* – also important habitat for amphibians

# CONCLUSION



GB rainforest is an important biodiversity hotspot for unique species

GB is an important year-round oasis for birds

Birds are key to restoration efforts and share our native biodiversity far & wide

Restoration efforts are critical for the future of the GB rainforest





# THANK YOU

ANY QUESTIONS?



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