

Birds Monitoring

Transect bird monitoring was established in 2015. The transects are located in and around some of the protected areas in the Maya Golden Landscape.



Four transect point counts and line transects, all 1km in length, are monitored by observing and listening with stopping points at every 200 meters. Indicator bird species are detected using sight and sound cues. The transects are visited twice daily: early morning and late afternoon.

Our target species lists include migratory birds, which helps us to measure the effects of habitat disturbance.



Bee Monitoring

Native bees support the landscape to remain diverse and productive. Bees also produce organic products which farmers can harvest and market.

In 2019, Ya'axché started the first inventory of native bee species for Belize. The inventory identifies species abundance and distribution across the Maya Golden Landscape.



The bee specimens were collected from transects in protected areas and agroforestry farms in nearby communities on a monthly basis.

The results contributes to the national species list for bee species and the establishment of a monitoring program of native bee population dynamics to facilitate bees research in the Maya Golden Landscape.



Ya'axché Conservation Trust

Harmony between nature and human development for the benefit of both

Ya'axché is a Belizean organization aiming to maintain a healthy environment with empowered communities through sustainable livelihoods, protected area management, biodiversity conservation and environmental education utilizing innovative approaches within the Maya Golden Landscape.

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All images have been captured by Ya'axché staff and field cameras deployed in wild places managed by Ya'axché in the Maya Golden Landscape.



Science program

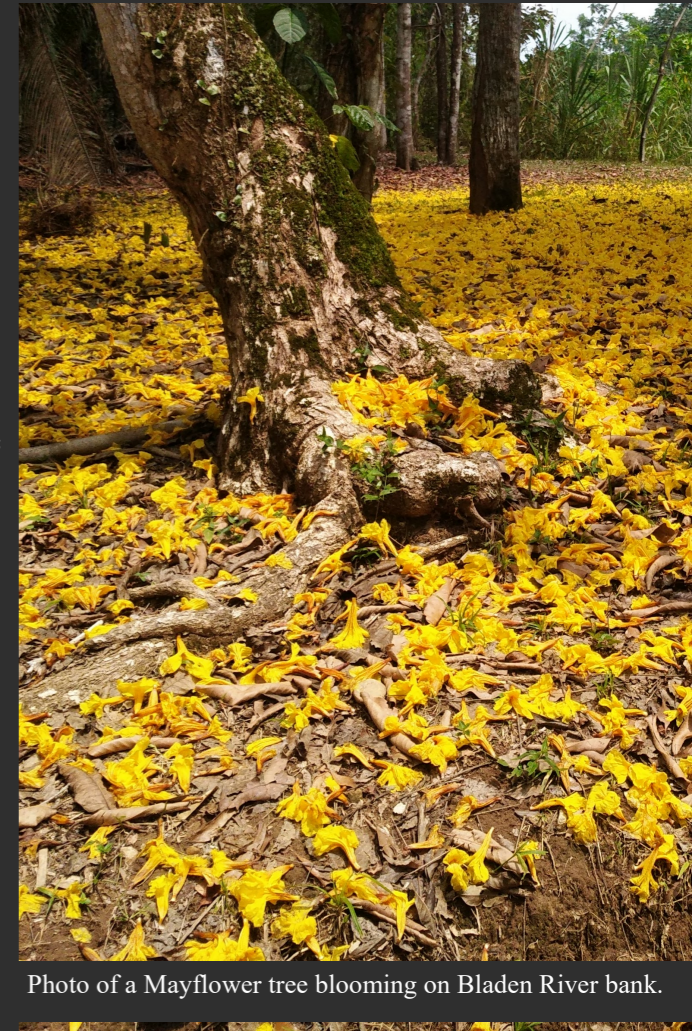


Photo of a Mayflower tree blooming on Bladen River bank.

Science program

Ya'axché's Science program was established in 2006 to strengthen and fortify the work of the Community Outreach and Livelihoods and Protected Areas Management programs.

Across the Maya Golden Landscape (MGL),



within protected areas and agroforestry farms, Ya'axché's Biodiversity Research and Monitoring Ranger team collects data on large mammals, birds, freshwater invertebrates and trees populations. The data collection of these species populations helps to detect changes in biodiversity's health over time and to maintain the integrity of vital ecosystems.

The information directly benefits communities buffering Bladen Nature Reserve, Maya Mountain North Forest Reserve and Golden Stream Corridor Preserve. This also guides local and national science-based management decisions, education and policy.



Camera Trapping

Camera traps survey monitors mammalian species, including carnivorous predators, prey species, various bird species, and reptiles through photos.



Since 2016, Ya'axché has deployed camera traps in protected areas and cacao-based agroforestry farms across the MGL for both dry and wet seasons. Photos of the 5 wild cats of Belize: jaguars, pumas, ocelots, jaguarundis, and margays have been documented, as well as endangered and rare species such as tapirs, keel-billed toucans and kinkajous and common game species like collared and white-lipped peccaries, paca, white-tailed and red-brocket deer, armadillos, and curassows.



The results of the survey provides solid evidence that the agroforestry farms is viable for the protection of wildlife than other models of industrial agriculture. This helps to promote wildlife protection and provided farmers with an album (photographic collection) of species that traverse and dwell on their farms.

Freshwater Monitoring

Freshwater invertebrates are biological indicators for watershed health. The water quality directly reflects the quality of habitat upon which biodiversity and the MGL communities depend.



The MGL communities directly depend on rivers for drinking water, washing, baths and fishing. The Ya'axché team monitors 4 major watersheds in southern Belize: Monkey River, Deep River, Golden Stream River and Rio Grande River.

Macro-invertebrate communities are an important component of a healthy river system, forming the core diet of many fishes and birds.

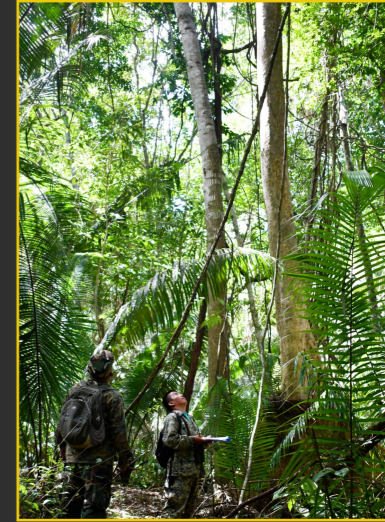
Macro-invertebrates help to detect changes associated with deforestation, mineral extraction and intensive agricultural practices that affect the landscapes. As a group, they



integrate conditions in a watershed over time and respond relatively quick to environmental stressors; they help to highlight immediate problems in the environment.

Trees Monitoring

Tree monitoring was established in 2012 to monitor a few threatened and rare tree species of plants. Among these species, we focus heavily on the life cycle of the rosewood, *Dalbergia stevensonii*, which is a tree species that has been threatened by over-extraction for timber.



Growth rates are recorded by measuring height and diameter (DBH) of the main stem for each tree. The flowers and fruits are observed and measured; its annual patterns and frequency events are also recorded. This data is to compare between rosewood species. Study sites are located along patrol routes in GSCP.

The data collected provides valuable information about species that lack life-cycle data which can be instrumental in the development of sustainable harvest and management plans of species.

