Dynamics of Ecuadorian Amazon butterflies: implications for conserving the world’s richest fauna

Methodology

- Studied the community ecology of sympatric butterflies, a group often used in bioconservation and education, during one year in Yasuni National Park (Fig. 1).
- Bait traps were used to measure species abundance in different habitats and strata. Temperature and precipitation were recorded over the year to determine the relationship between these variables and butterfly communities.
- Bibliographical research was done to determine the conservation status of Yasuni forest habitats and current threats.

Results

Biological study

- This study generated information about temporal and spatial patterns of butterflies (where and when they occur) and resulted in new species and new records for Yasuni (Fig. 2).
- Butterfly populations fluctuated over the year, with a peak of butterfly abundance and species richness in September, showing that scientific or commercial research may be best concentrated during this time (Fig. 3).
- Temperature and rainfall are closely related to butterfly abundance, with temperature being the most important, despite varying by only one degree during the year. Amazonian butterflies will therefore likely be strongly affected by projected global climate change.
- Ecological information was applied in a pilot project of butterfly farming in the region, which set up the basic guidelines for future initiatives.

Discussion

- These results will be useful to better determine the IUCN threat status of butterfly species and possible effects of climate change in Neotropical insects, topics important for conservation but still poorly researched.
- Studies about climate change in Yasuni are very useful as this park lies within an area thought to have retained moist forest during past dry climatic periods, and thus perhaps has a particular potential to serve as a refuge for Amazonian species during the coming decades, if it remains preserved.
- This study may contribute to implement a sustainable strategy through butterfly farming (butterfly rearing in green houses for exhibition) in the Ecuadorian Amazonia and promote conservation.

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