

ABSTRACT

The Effect of Habitat Degradation and Biological Invasion on Species Richness and Abundance of Anuran Communities in Trinidad, West Indies.

Shiva Adesh Manickchan

Amphibian populations are in decline. This can have far-reaching consequences, since amphibians are important contributors to our ecosystems as both predators and prey. The general topic of changes in composition of Neotropical anuran communities is investigated with respect to disturbance and biological invasion. The effect of human induced habitat alteration on anuran populations is investigated in Trinidad, West Indies. The type of habitat alteration investigated is selective tree removal in low elevation humid forest. Audio strip transect monitoring was carried out in these habitats. Statistical analysis reveals that habitat degradation leads to a net loss of biodiversity by decreasing anuran species richness, while allowing a net increase in the number of individuals of the remaining species. No significant change in the total number of individuals occurs.

Increasing attention is currently being directed towards the issue of biological invasions, since they can reduce biodiversity, cause economic loss, and add to global homogenisation. *Eleutherodactylus johnstonei* invaded Trinidad in 1980. Its local range did not increase significantly until after 1991. *E. johnstonei*'s spread negatively affected *E. gossei* in Bermuda, reduced the activity of *E. martinicensis* in Dominica, and is considered a threat to local

Eleutherodactylus in Jamaica. Hence, monitoring the spread of *E. johnstonei* is of great importance. So far the local range of *E. johnstonei* is restricted to the northwest portion of Trinidad with only a few areas of establishment.

Keywords: Trinidad; frogs; toads; amphibians; anuran populations; audio strip transect monitoring; loss of biodiversity; *Eleutherodactylus johnstonei*.