

# 11<sup>TH</sup> U.S. SYMPOSIUM ON HARMFUL ALGAE

## CASE STUDY: A CARIBBEAN CIGUATOXIC EXPERIENCE IN PUERTO RICO

Ciguatera poisoning (CP) is predominantly caused by the consumption of finfish which have accumulated ciguatoxins (CTXs) and is the most common phycotoxin-borne seafood poisoning worldwide. Ciguatera has a global distribution and is endemic to many coastal reef ecosystems in tropical and subtropical regions. Limited case studies are reported in the literature, limiting our ability to evaluate etiological changes through time, so the objective of this work was to conduct a thorough ciguatera outbreak investigation that affected a family, fishermen, and pets in San Juan and a couple in Vieques, Puerto Rico. One individual was diagnosed with Ciguatera after consumption of a fish filet purchased from a local market, while the second family self-diagnosed based on prior personal experience with CP. In all cases DNA barcoding confirmed the ingested fish from both outbreaks to be *Scomberomorus cavalla*, a fish commonly implicated in ciguatera. Common symptoms disclosed on interview ranged from more general diarrhea and fatigue, to breathing difficulties, pruritus, and paresthesias of the hands, consistent with the known clinical indicators of CP. Remaining fish samples were provided for toxicological testing and confirmed high levels of sodium-channel specific activity by mouse neuroblastoma assay, which was further confirmed by LC-MS/MS and HRMS analyses. While CP remains prevalent worldwide with no treatment, it is crucial for the documentation of these cases to help us better understand the dynamics and implications of CP in human health.

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