patrón ambiental con las condiciones de mayor perturbación en Chelem y zona interna de Río Lagartos (Cuyo), con la presencia y alta abundancia de varias especies oportunistas o tolerantes (Floridichthys polyomnus y Cyprinodon artifrons). Por el contrario, se registró un incremento consistente en la abundancia de especies marino-euríhalinas en Celestún (Eucinostomus spp. Sphoeroides testudineus), Bocas de Dzilam y zona marina de Río Lagartos con los valores más altos del índice. Las clases de integridad biológica obtenidas coincidieron con el grado de alteración antropogénica/natural que presentan los sistemas lagunares en su conjunto.

### PaV1 Detection by the Caribbean Spiny Lobster (Panulirus argus) and its Effect on Population Spatial Structure

**KEY WORDS:** Spiny lobster, PaV1, disease, bottleneck

**Detección de PaV1 por el Caribe Langosta (Panulirus argus) y su Efecto sobre la Estructura Espacial de la Población**

**PALABRAS CLAVE:** Caribe langosta, PaV1, estructura espacial

**Détection de PaV1 par la Langouste des Caraïbes (Panulirus argus) et de ses Effets sur la Population de Structure Spatiale**

**MOTS CLÉS:** Langouste des Caraïbes, PaV1, structure spatiale

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**ABSTRACT**

*Panulirus argus* virus 1 (PaV1) is a contact-transmitted pathogen that causes mortality in the gregarious Caribbean spiny lobsters (*Panulirus argus*). However, studies have shown that *P. argus* has the ability to detect and avoid shelters inhabited by infected conspecifics, thereby reducing infection risk but also causing increased mortality due to a lack of available (disease-free) shelters. Ultimately, disease avoidance and shelter limitations could have population wide affects through increased PaV1 transmission or increased predation. Based on its role in many other aspects of lobster ecology, olfaction is the most likely mode of PaV1 detection. To test the role of olfaction and determine the source of the olfactory cue in the PaV1 detection, we are using y-maze experiments. We are also exploring the effect of diseased lobsters on population spatial structure in nature and the effect flow has on this structure. Preliminary results show that diseased lobster avoidance is driven by olfaction, and moreover, the olfactory cue alone was equivalent in effectiveness to having a diseased lobster present and visible thereby causing shelter avoidance. Juvenile shelter avoidance in a shelter limited environment (sponge die-offs) could result in a population bottleneck that would affect the adult demographics along with the entire Caribbean spiny lobster fishery. This research is ongoing and additional results will be available by the time of the GCFI meeting.

### Observing Queen Conch Density and Behaviour in Barbados

**KEY WORDS:** Queen conch, density, behavior, Barbados

**Observando la Densidad y el Comportamiento del Caracol en Barbados**

**PALABRAS CLAVE:** Caracol, densidad, comportamiento, Barbados

**Observation de la Densité et du Comportement de la Lambi à la Barbade**

**MOTS CLÉS:** Lambi, densité, comportement, Barbade

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**ABSTRACT**

Queen conch, *Strombus gigas*, a slow moving marine gastropod, is vulnerable to depressed reproductive activity resulting from density dependent mechanisms such as the Allee effect. Now heavily exploited throughout most of its range, the density of remaining conch populations has become a matter of concern for conservation and recovery of depressed
populations, and for management of viable stock densities. In this study we observed individual behaviours and density of neighbours in a Barbados conch population, to determine any patterns and/or ranges in conch densities at which particular behaviours occur. Tagged conch were observed by SCUBA divers biweekly for one year from May 2009 through May 2010. On each occasion the individual’s behaviour (quiescent, buried, feeding, pairing or spawning), water depth and temperature were recorded, together with the number of neighbours within a 20 m radius. Pairing and spawning were only observed at medium (3 - 6 conch per circle or 25 - 50/ha) and high (≥ 7 conch per circle or ≥ 58/ha) densities. Feeding was only observed at high densities, whilst quiescent and burying behaviour was observed predominantly at low densities. These results corroborate previous findings of a minimum density threshold for conch spawning and confirm the importance of protecting spawning aggregations.

Seawall Construction Activities Cause a Localized Mass Mortality of Threatened Elkhorn Coral (*Acropora palmata*) at Vega Baja, Puerto Rico

KEY WORDS: *Acropora palmata*, mass mortality, patchy necrosis, seawall construction, turbidity

La Construcción de un Malecón Causa una Mortandad Masiva Localizada del Coral Amenazado Cuerno de Alce (*Acropora palmata*) en Vega Baja, Puerto Rico

PALABRAS CLAVE: *Acropora palmata*, mortandad masiva, coral amenazado

Les Activités de Construction de Digue Causent une Mortalité Massive Localisée du Corail Corne d’élan (*Acropora palmata*), Espèce Menacée, à Vega Baja, Puerto Rico

MOTS CLÉS: *Acropora palmata*, mortalité massive, digue, corail corne

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ABSTRACT

Improper implementation of sedimentation controls at a seawall construction site at Vega Baja beach, Puerto Rico, resulted in significant high turbidity followed by localized mass mortality of threatened Elkhorn coral (*Acropora palmata*) populations along an east-west gradient during August 13 - 20, 2010. A total of 63 tagged coral colonies along eight permanent transects (0.5 to 2.2 km downstream of the construction site) were unblemished before the event. Those located below 0.9 km away showed an increase in % frequency infections (22 - 78% with decreasing distance). None of the corals located farther away were impacted. Fifty more corals were tagged after the incident along two transects at 0.6 (east) and 0.8 km away (middle). A total of 90% of the corals were partially killed by patchy necrosis (PN) at each site, with 75% still showing active infections at the east and 50% at the middle site. Also, 45% of the colonies showed 26 - 50% recent tissue loss at the east, while 23% of those from the middle showed only 6 - 25% tissue loss. Live % coral cover was significantly lower at the east site (44%) than at the middle (66%). Recent mortality was higher at the east site (37%) in comparison to the middle (20%). Frequency of large lesions was significant at the east site. This event was more devastating than a previous one during the winter of 2008. Sea surface temperature anomaly was +2.0°C during this event, suggesting that the combined stress of high turbidity and warm temperature could have triggered such an impact.