

seascapes are depth and the substrata proportions (sand, mud, limestone). The main drivers of the variability of benthic categories appear to be waves and currents.

Enhancing Condado Lagoon's Essential Fish Habitat with an Artificial 'Taíno' Reef Trail

KEY WORDS: Artificial-reef, habitat, coral, reef-fish, Puerto Rico

Mejorando el Hábitat Esencial para Peces en la Laguna del Condado con la Vereda 'Taíno' de Arrecifes Artificiales

PALABRAS CLAVE: Arrecifes artificiales, hábitat esencial, Puerto Rico

Amélioration de Condado Lagoon l'Habitat du Poisson Essentielles d'un Parcours Artificiel 'Taíno'

MOTS CLÉS: Parcours artificiel, habitat essentielles, Puerto Rico

MICHELLE SCHÄRER-UMPIERRE^{1*}, MICHAEL NEMETH², and HECTOR RUIZ³

¹*Sea Grant College Program, University of Puerto Rico, P. O. Box 9000, Mayagüez, Puerto Rico 00681 Puerto Rico. m_scharer@hotmail.com.* ²*Department of Marine Science, University of Puerto Rico, P. O. Box 9000, Mayagüez, Puerto Rico 00681 USA.* ³*HJR Reefscaping, P.O. Box 1126, Hormigueros, Puerto Rico 00660 USA.*

ABSTRACT

The Condado Lagoon is an important part of the San Juan Bay Estuary as it holds a link between the marine waters of the Atlantic Ocean and the estuary. The lagoon is important both in ecological function and economic potential to local tourism enterprises. As part of a fish habitat enhancement program a submarine snorkeling trail with artificial reef modules was created. In addition to providing habitat for coral reef and estuarine fishes the area provides an attraction that can be used to reduce intensive human impacts on nearby reefs. Forty-four artificial 'Taíno' reef modules deployed in near-shore sandy habitats have been colonized by a variety of corals, motile invertebrates and fishes. This study compares the fish community over time by conducting stationary underwater visual surveys (point counts) before modules were deployed and quarterly during a year afterwards. Fishes were numerated to the lowest possible taxonomic level and length was estimated to the nearest cm. The number of species increased throughout the study period with a triplication after deployment and at least 40 that were previously undetected. Grunts and surgeon fishes showed a consistent increase in the size distribution towards the end of the study period. The enhancement of fish habitat is a step towards the conservation of coral reef species affected by environmental degradation. The Condado Lagoon Taíno Reef Trail provides a useful tool for enhancing fish habitat while providing a recreational attraction.

Estado de Salud de las Lagunas Costeras de Yucatán, México: Índice de Integridad Biótica

PALABRAS CLAVE: Ictiofauna, áreas protegida, sistemas lagunares, costa Yucatán, Mexico

Health Status among Coastal Lagoons of Yucatan, Mexico: Index of Biotic Integrity

KEY WORDS: Icthyofauna, coastal lagoons, biotic integrity, Yucatan, Mexico

L'État de Santé des Lagunes Côtières du Yucatan, Mexique: Indice d'Intégrité Biotique

MOTS CLÉS: Lagunes côtières, d'intégrité biotique, Yucatan, Mexique

MA. EUGENIA VEGA^{1*} and MIRELLA HERNÁNDEZ DE SANTILLANA²

¹*CINVESTAV, IPN, Unidad Mérida km. 6 Antig. Carr. Progreso Mérida, Yucatan 97310 México.*
²*Centro de Investigación y de Estudios Avanzados del IPN Mérida Yucatán 97310 México.*

RESUMEN

En los sistemas lagunares de la costa de Yucatán, se realizan diversas actividades generadas por su productividad pesquera y biodiversidad. No obstante su carácter de reservas de la mayoría de ellas, se desconoce su estado de salud. Se integra la información ictiofaunística obtenida de varios años de estudio en localidades de Celestún, Chelem, Bocas de Dzilam y Ría Lagartos con el objetivo de proveer una medida de integración de la información de los atributos biológicos (métricas) que reflejen su condición y permita utilizar a los peces como indicadores ambientales. Las métricas seleccionadas se clasificaron en medidas de riqueza, abundancia, composición, espectro trófico, condición y tolerancia. Se observó un