



# Fisheries learning exchanges and sea turtle conservation: An effort between Mexico, Cuba and the U.S. to engage Cuban coastal communities in non-consumptive alternative behaviors



Fernando Bretos<sup>a,g,\*</sup>, Julia Azanza Ricardo<sup>b</sup>, Félix Moncada<sup>c</sup>, S. Hoyt Peckham<sup>d</sup>, Jorge A. Angulo Valdés<sup>e</sup>, Antonio Diego<sup>f</sup>, Katie R. Thompson<sup>g</sup>

<sup>a</sup> Patricia and Phillip Frost Museum of Science, 3280 South Miami Avenue, Miami, FL 33129, USA

<sup>b</sup> Instituto Superior de Tecnologías y Ciencias Aplicadas (INSTEC), Quinta de los Molinos, Ave. Salvador Allende, corner Luaces, Plaza de la Revolución, Havana, Cuba

<sup>c</sup> Centro de Investigaciones Pesqueras, 5ta. Ave. y 246, Santa Fé, Playa, Havana, Cuba

<sup>d</sup> Center for Ocean Solutions, Stanford University, Pacific Grove, CA 93950, USA

<sup>e</sup> Centro de Investigaciones Marinas, Universidad de la Habana, Calle 16 #114, entre 1era y 3era, Miramar, Playa, Havana, Cuba

<sup>f</sup> ConservArte, Bahía Magdalena, Baja California Sur, Mexico

<sup>g</sup> Cuba Marine Research and Conservation Program of The Ocean Foundation, 1320 19th Street, N.W. 5th Floor, Washington, D.C. 20036, USA

## ARTICLE INFO

### Article history:

Received 17 May 2016

Accepted 18 May 2016

Available online 2 June 2016

### Keywords:

Fisheries

Fisheries bycatch

Sea turtle conservation

Marine conservation

## ABSTRACT

The purpose of this short communication is to describe the Third International Workshop on Sea Turtle Conservation and Fisheries Exchange that took place from April 22–30, 2009 on Cuba's *Isla de la Juventud* [Isle of Youth]. A group of 28 fishers, conservationists, marine scientists and fisheries managers from Cuba, Mexico and the U.S. gathered at Siguanea Bay off the island's southwest coast. The goals of the exchange were to 1) provide a forum for sea turtle experts and fishing communities in Cuba, Mexico, and the U.S. to share experiences on conservation activities, 2) develop the scientific basis for future conservation in this highly biologically important region of Cuba, and 3) increase support by Cuban fishers for local sea turtle conservation efforts. During the exchange, participants met with local Cuban fishers about the challenges of conserving sea turtle populations while maintaining their fishing livelihoods, shared solutions developed by fishers to accomplish the same in Mexico, and undertook field and cultural activities. Key outcomes for the exchange include an improved understanding of sea turtle bycatch off the *Isla de la Juventud*, enhanced collaboration among the three nations in turtle conservation, and increased motivation by fishers to participate in sea turtle research and conservation. Additionally, as a direct result of this exchange, the community of Cocodrilo on the *Isla de la Juventud* has hosted annual sea turtle festivals that increase support for turtle conservation efforts by the local community.

© 2016 Elsevier Ltd. All rights reserved.

## 1. Introduction

### 1.1. Sea turtle fisheries and conservation in Cuba

Cuba's sea turtle fishery historically occurred across the country and served as a source of food and income for its coastal communities. From 1968 to 1975, the unregulated fishery reached more than 1000 t in total catch volume of mainly three sea turtle species: the green turtle (*Chelonia mydas*), loggerhead (*Caretta caretta*) and hawksbill (*Eretmochelys imbricata*) [1]. At this time,

there was little understanding by the Cuban government about the status of the country's sea turtle populations.

In response to this lack of data, in the early 1980s Cuba's *Centro de Investigaciones Pesqueras* [Center for Fisheries](CIP) began to monitor the sea turtle fishers' catch throughout the Cuban shelf. These studies increased fisheries officials' and scientists' understanding of the country's sea turtle fishery and provided data to inform management of the fishery. Some of the management measures put in place as a result of these initial studies include modification of the fishing seasons, reduction of fishing effort, establishment of minimum size limits and reduction in catch quotas. Because of these new measures implemented in the 1980s, the total catch for each sea turtle species began to gradually decrease [1].

\* Corresponding author at: Patricia and Phillip Frost Museum of Science, 3280 South Miami Avenue, Miami, FL 33129, USA.

E-mail address: [fbretos@frostsscience.org](mailto:fbretos@frostsscience.org) (F. Bretos).

In 1995, Cuba declared a ban on sea turtle fisheries throughout the country with the exception of two sites—one of which was the village of Cocodrilo, located on Cuba's Isla de la Juventud. Cocodrilo, an isolated fishing community of just over 300 residents, was founded by turtle fishermen from the Cayman Islands in 1904 (Personal Communication, Antonio Diego). Hence, sea turtles had always been Cocodrilo's main means of subsistence and continued to be so even after the nationwide ban in 1995 and until the beginning of the 21st century when Cocodrilo fishers were catching an average 18 annual tons of green, hawksbill, and loggerhead sea turtle species [2,3].

In 2007, the Cuban government announced closure of the two remaining sea turtle fisheries, including Cocodrilo, and they were completely closed by January 2008 [3]. Even so, incidental catch and poaching continue to pose problems to Cuba's sea turtle populations [4]. In order to minimize the impacts of these threats and to assist Cuba's transition away from its sea turtle fisheries and towards non-consumptive alternative behaviors, sea turtle researchers and conservationists from Cuba and around the world have organized and participated in meetings and workshops with fishers in order to strengthen Cuba's sea turtle conservation efforts. In this article the authors focus specifically on the Third International Workshop on Sea Turtle Conservation and Fisheries Exchange (Sea Turtle Exchange) on Cuba's Isla de la Juventud. This unique informational exchange between Cuba, Mexico, and the U.S. was a project of the Sea Turtle Working Group of the Trinational Initiative for Marine Science and Conservation in the Gulf of Mexico and Western Caribbean – an unprecedented tri-national research and conservation group led by The Ocean Foundation to study and conserve shared marine resources by the three nations of the Gulf of Mexico [5]. The Sea Turtle Working Group has organized various exchanges as part of an exchange series, as explained below [6,7].

### 1.2. History of the International Workshops on Sea Turtle Conservation in Cuba

Since the 1990s, Cuba has hosted exchanges related to sea turtles. These first exchanges in the 1990s were focused on sustainable fishing and the conservation of sea turtles. After the 2008 closure of Cuba's sea turtle fishery, the *Ministerio de la Industria Pesquera* [Ministry of Fisheries](MIP) and the World Wildlife Fund (WWF) organized a workshop for the fishers of Cocodrilo and Nuevitás that focused on identifying alternatives to sea turtle fishing (Personal Communication, Félix Moncada).

While these exchanges and workshops were successful in bringing Cubans together to share information, sea turtle researchers in Cuba also felt an international aspect was important when discussing migratory species such as sea turtles. The Sea Turtle Exchange was the third of an international series of workshops held by *Centro de Investigaciones Marinas* [Center for Marine Research](CIM) of the University of Havana and The Ocean Foundation since 2002 [7]. The first two workshops in 2002 and 2005 took place at Guanahacabibes Peninsula, a National Park and UNESCO biosphere reserve on Cuba's extreme western coast. The goal of the 2002 workshop was to bring together international experts to advance sea turtle monitoring work at Guanahacabibes conducted by CIM. The goal of the 2005 workshop was to develop CIM's wildlife tagging and community education work in and around Guanahacabibes [6,8]. Shortly after this workshop, in 2006, three Cuban biologists representing CIM and CIP traveled to Mexico as part of an exchange to learn more about Grupo Tortuguero, a network of fishers and community members dedicated to protecting local sea turtles, and its effective fisher engagement and community outreach models in Baja California Sur [9]. With the idea of replicating the Grupo Tortuguero model in Cuba,

representatives from Mexico, Cuba, and the U.S. organized the Sea Turtle Exchange in 2009. Fisher exchanges have proven effective particularly in more isolated, small-scale fisheries where management is limited, such as on the Isla de la Juventud. Additionally, through these exchanges, fishers facing similar biological and political challenges exchange perspectives and strategies that can help in reducing sea turtle bycatch [10,11].

## 2. Methodology

The Sea Turtle Exchange took place from April 22–30, 2009 in the Bay of Siguanea and Punta Francés, a nature reserve on the southwest corner of Cuba's Isla de la Juventud. Isla de la Juventud is the second largest island in the Cuban Archipelago and is located 90 miles southwest of Havana [6]. The Ocean Foundation and CIM provided support for the exchange and The Christopher Reynolds Foundation and Bay and Paul Foundations provided funding. The goals of the exchange were to 1) provide a forum for sea turtle experts and fishing communities in Cuba, Mexico, and the U.S. to share experiences on conservation activities, 2) develop the scientific basis for future conservation in this highly biologically important region of Cuba, and 3) increase support by Cuban fishers for local sea turtle conservation efforts. The group of 28 exchange participants included fishers, conservationists, marine scientists, and fisheries managers from Cuba, Mexico (specifically the Mexican states of Baja California Sur, Yucatan, and Quintana Roo), and the U.S. The fishers were selected based on the fact that they were former fishers now involved in conservation efforts in their home countries. The senior author (FB) and co-author (JAR) previously of CIM, facilitated the exchange [6,12]. JAV conceived the idea for the floating workshop and advised on its design and implementation. It was the first international fisheries exchange in Cuba.

During the exchange, participants gathered information from local Cuban fishers about their perspectives on sea turtles and fishing. They had discussions with fishers about the types of fishing implemented in the region, best fishing practices, gear selection, the likelihood of bycatch, and the general attitudes Cuban fishers have for sea turtles. The exchange organizers termed the exchange *taller flotante* or “floating workshop” because fishers and conservationists from Mexico boarded Cuban lobster and bonito fishing vessels to informally exchange information. Fishing vessels were selected opportunistically. Exchange participants went from vessel to vessel as they encountered them in the Punta Francés region. Furthermore, participants made a day-long boat tour of the Punta Francés National Park to snorkel and dive its reefs and meet with park rangers. The organizers chose this specific region because it is biologically productive and fishing vessels from both mainland Cuba and the Isla de la Juventud fish there. This diversity of fishing vessels allowed participants to gather viewpoints that represented different regions in Cuba.

Off the water, both Cuban government officials and fishers had the opportunity to present as part of the exchange. The government officials presented on the sea turtle research and conservation projects that have been conducted by government agencies over decades. The presentations specifically addressed sea turtle research and conservation developments since Cuba closed the sea turtle fisheries in 2008.

## 3. Exchange outcomes

The organizers perceived the Sea Turtle Exchange as successful because its goals were achieved. Participants from all three countries exchanged knowledge and experiences, Cuban scientists and fisheries managers developed a scientific basis for future

Download English Version:

<https://daneshyari.com/en/article/5118249>

Download Persian Version:

<https://daneshyari.com/article/5118249>

[Daneshyari.com](https://daneshyari.com)