



The Newsletter of the Caribbean Regional Fisheries Mechanism - **Special Scientific Issue, June 2011**

THE ROLE OF CRFM'S SCIENTIFIC MEETINGS IN FISHERIES MANAGEMENT

Fisheries form an integral part of life in the Caribbean by providing food, employment and recreation. Over 680 types of fish are caught as well as conch, lobster, squid, and octopus. Fishing pressure has increased within the last 30 years due to a greater number of fishers, modernized fishing fleets, growing tourism industries, and expanding export markets.

As a result, fisheries management is now faced with the challenge of ensuring that fisheries are not overexploited, while at the same time maintaining jobs, income generation and food security. In order to achieve these tasks, fisheries managers depend on advice from fisheries scientists.

The annual CRFM Scientific Meetings provide the opportunity for fisheries experts to examine information and data from important commercial fisheries, determine how well they are performing and if management objectives are being met. The outputs of these meetings guide fisheries managers and help them to make informed decisions. The Meetings are also used to discuss and develop fisheries initiatives at the national, regional and international levels.

CRFM's mission is "To promote and facilitate the responsible utilization of the region's fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region".

CRFM was established in 2003 and is the successor of the CARICOM Fisheries Resource Assessment and Management Program (CFRAMP) which was a sustainable fisheries development initiative created in 1991 and completed in 2002.



Inside this issue:

Fisheries Assessments: 2005-09	2
Age & Growth Studies of Fish	3
Data, Methods & Training	4
Data Collection Initiatives	6
Editor's Note	7

Regional participants being addressed during the opening ceremony of the fifth Scientific Meeting.

FISHERIES ASSESSMENTS THROUGH THE YEARS 2005-2009

Assessing the performance of fisheries calls for special scientific expertise, and this is why CRFM fisheries assessments are handled by a number of special working groups, each established to deal with the major groups of fishery resources. There are five CRFM working groups: Conch & Lobster Resource Working Group (CLWG); Reef & Slope Fish Resource Group (RSWG); Shrimp & Groundfish Resource Working Group (SGWG); Small Coastal Pelagic Fish Resource Working Group (SCPWG); and the Large Pelagic Fish Resource Working Group (LPWG).

These groups analyze fisheries data which have been collected by countries over time and include:

- Fisherman's catches
- Fishing effort— usually number of fishing trips or

amount of time at sea

- Biological- fish lengths, sex, maturity, age (only collected for very important species and sometimes only for a limited time period)

Based on the results of the analysis, it can be determined if:

- Catches are at sustainable levels
- Fishing effort is at a sustainable level
- The sizes of fish in the catches are changing
- The size of the fish population is changing

These results also allow conclusions to be made about the health of fish stock/population and facilitate the development of appropriate management responses.

Summary of the fisheries assessments/analyses by country which have been conducted during the first five CRFM Scientific Meetings.

Country/Region	2005 Meeting	2006 Meeting	2007 Meeting	2008 Meeting	2009 Meeting
Belize	Spiny lobster		Nassau grouper		
The Bahamas	Spiny lobster	Spiny lobster		Spiny lobster	
Grenada	Scads (jacks & rob-ins)				
Guyana		Atlantic seabob; Red snapper	Atlantic seabob; Bangamary; Sea trout	Atlantic seabob	Atlantic seabob
Jamaica		Queen conch	Spiny lobster	Spiny lobster	Spiny lobster
Montserrat					Red hind;
					Queen trigger-fish
St. Kitts & Nevis				Snappers; Hinds	
St. Lucia		Spiny lobster	Queen conch	Queen conch	Queen conch
St. Vincent & the Grenadines	Red hind (butterfish)				
	Scads (jacks & rob-ins)				
Suriname			Shrimp	Atlantic seabob	Atlantic seabob
The Turks & Caicos Islands	Spiny lobster	Queen conch	Queen conch; Spiny lobster	Snappers; Hinds	
Trinidad & Tobago	Southern pink shrimp; Atlantic seabob	Shrimp	King mackerel	Creville jack	
	Serra spanish mackerel			Whitemouth croaker	
Eastern Caribbean	Wahoo	Dolphinfish	Wahoo		

UNDERSTANDING FISH AGE & GROWTH

When fish grow, this adds to the weight of fish populations, which, in turn, adds to the weight of fisherman's catches.

Scientists studying fish age and growth measure how fast fish grow at different stages of their lives, the ages of different-sized fish, and how large fish can become if they live to reach the oldest age possible for them. Scientists then examine how fishing activities affect this natural growth cycle, just so that they could advise on ways of keeping the two in balance.

During a well-known CARICOM regional fisheries project (CFRAMP) conducted in the 1990s, and through its partnership with the Institute of Marine Affairs (IMA) located in Trinidad and Tobago,

Did you know?

Otoliths are small paired bones found in the head of fin-fish used for hearing and maintaining balance in the water. The otoliths are made of minerals and proteins and the rate at which they are accumulated is dependent on the growth of the fish. When otoliths are removed, cleaned, sectioned (thinly sliced), polished and seen under a microscope, the growth of the fish can be recorded as rings (like the growth rings seen in tree trunks). The number of rings allows the age of the fish to be determined in years or days. The thickness of these rings generally indicates how fast the fish grows.

there was a big investment in effort and time to carry out age and growth studies on over 20 fish species of economic importance. At the time, the IMA agreed to house a regional age and growth laboratory, where samples of fish hard parts (mainly otoliths) were processed and studied.

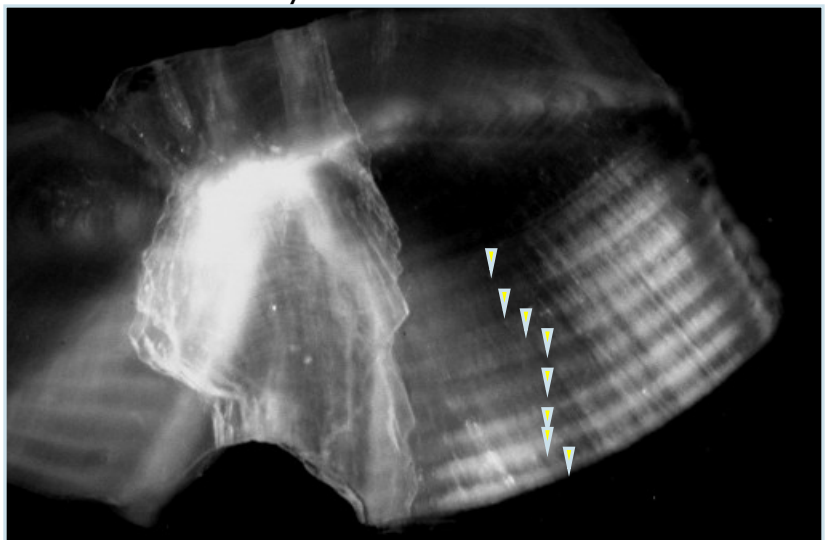
Not surprisingly, interest in fish age and growth studies was re-energized when the CRFM scientific meetings began in 2004, aimed at examining fishing activities and how best to keep these activities in balance with the natural growth cycles of fished resources. At present, the CRFM and the IMA are working together to continue the important regional-level fish age and growth work started by CFRAMP.



IMA scientists viewing a magnified otolith image on a computer (above).

Magnified otolith image of a lane snapper— actual otolith size is 0.4cm and the fish measured 25.5 cm in length.

Eight presumed annuli (yearly growth rings) are shown by the white arrows. Fish aged by the IMA Fish Age and Growth Laboratory.



OUR FOCUS ON DATA, METHODS & TRAINING

In the Caribbean, the types of fisheries data typically collected are:

- License and registration of fishing vessels and fishers
- Fisherman's catches
- Fishing effort— usually number of fishing trips or amount of time at sea

Biological data such as fish lengths, sex and maturity are not collected by countries on a routine basis.

Data collectors work at specific landing sites (usually the major ones) and capture data based on individual fishing trip activities. Fish landings data are also collected through the fish markets or cooperatives.



Data collector at work

Limited staff and finances have often affected data collection activities. This has resulted in some fisheries not being monitored effectively, causing a 'data poor situation' in many cases. Conventional assessment methods require detailed data which are not usually available in the Caribbean. The importance of making the best use of the various types, amounts and quality of data collected in the Caribbean was discussed during the 2004 Scientific Meeting and it was agreed that a special group was needed to look at the best methods for 'data poor' fisheries.

A CRFM Ad Hoc Group on Methods was established in 2006 and given the importance of data, methods and training, a permanent Data, Methods and Training Working Group (DMTWG) was established three years later in 2009.

The tasks of the DMTWG are the:

- Improvement of data collection
- Improvement of data storage and management
- Testing of different fisheries assessment methods
- Provision of training for fisheries officers in assessment methods

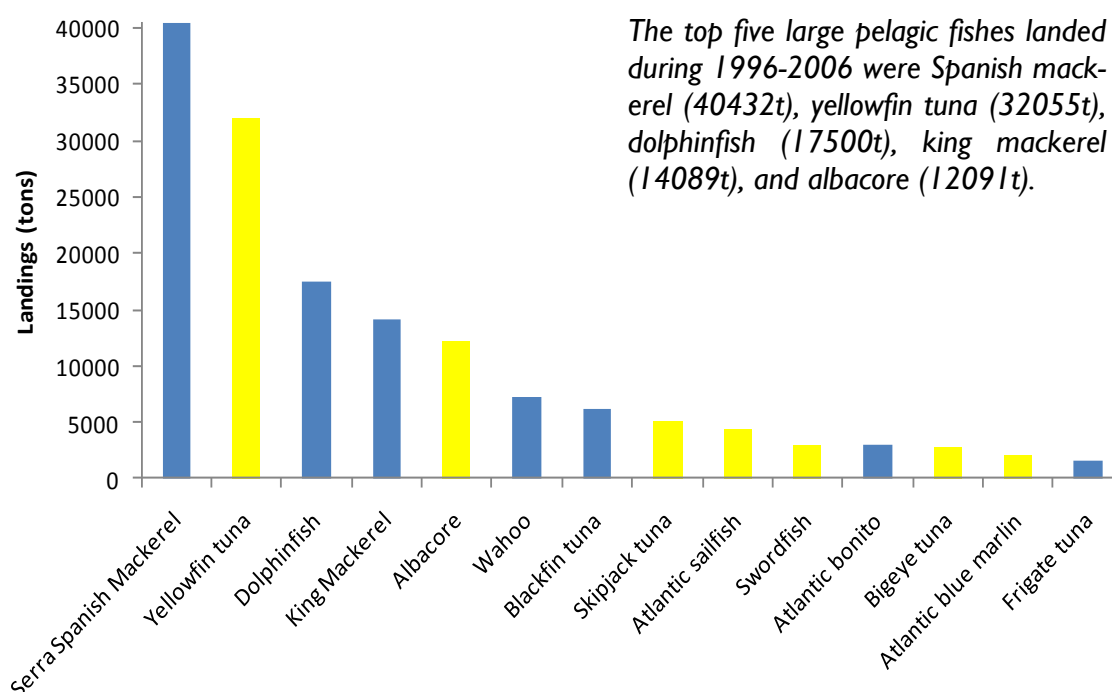


Consultant and CRFM staff analysing data during a Scientific Meeting

CRFM DATA COLLECTION INITIATIVES FOR LARGE PELAGIC FISH

Large pelagic species account for the majority of fish landed by weight and commercial value in the Caribbean (see Figure below). The International Commission for the Conservation of Atlantic Tunas (ICCAT) manages many of these species and countries are required to submit annual fisheries statistics on catch and effort. ICCAT is an inter-governmental fishery organization responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and its adjacent seas which includes the Caribbean Sea.” In February 2009, an ICCAT training workshop was completed in collaboration with CARICOM/CRFM. The workshop provided training for fisheries officers in data collection and basic fisheries analysis and was part of a program designed to improve the statistics countries provided to ICCAT. During the workshop, participants considered ways to improve national data collection systems and reporting to ICCAT. Improved sampling of commercial tuna fishing fleets was identified as a priority task for Barbados, Belize, St. Vincent and the Grenadines and Trinidad and Tobago which are members of ICCAT. A proposal for funding from ICCAT to establish a port sampling programme in Trinidad and Barbados where vessels from these contracting parties operate was prepared during the 2009 Scientific Meeting and submitted to ICCAT.

“The International Commission for the Conservation of Atlantic Tunas (ICCAT) is an inter-governmental fishery organization responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and its adjacent seas which includes the Caribbean Sea.”



Landings by CRFM Member States from 1990-2006 of large pelagic fishes. Species regularly assessed by ICCAT are in yellow and species NOT regularly assessed are in blue.

EDITOR'S NOTE

This newsletter provides updates on the progress made regarding activities and initiatives that were undertaken/addressed by the first five annual CRFM Scientific Meetings. The Newsletter is published by the Caribbean Regional Fisheries Mechanism Secretariat. The full meeting reports for each Scientific Meeting are published as: Volume 1 which contains the proceedings of the plenary sessions and the reports of the CRFM Resource Working Groups ;and Volume 2 which contains the management summaries.

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