



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

HIGHLIGHTS OF CRFM SIXTH SCIENTIFIC MEETING

The sixth CRFM Scientific Meeting was held in St. Vincent and the Grenadines from June 7th-16th, 2010. Eleven CRFM Member States participated: Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, The Bahamas, and The Turks and Caicos Islands.

Regional and international institutions represented were:

- National Marine Fisheries Service – South East Fisheries Science Center (NMFS SEFSC), Miami
- French Research Institute for Exploration of the Sea (IFREMER), Martinique
- Universidad del Oriente, Venezuela
- University of the West Indies (UWI) Cave Hill, Barbados
- Universidade Estadual, Brazil
- Department of Fisheries and Oceans, Canada

This year's work involved:

- The Reef and Slope Fish Resource Working Group-RSWG, which examined data from Montserrat
- The Large Pelagic Fish Resource Working Group-LPWWG, which examined data on the Eastern Caribbean dolphinfish fishery, and the blackfin tuna fishery
- The Small Coastal Pelagic Fish Resource Working Group-SCPWWG, which planned activities for an inter-sessional flyingfish/dolphinfish fisheries assessment
- The Data Methods and Training Working Group-DMTWWG, which completed training in R statistical software.

An inter-sessional study on the economics of the Turks & Caicos Islands queen conch fishery was also completed.



Members of the RSWG during the Sixth Scientific Meeting

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RSWG- MONTSERRAT'S REEF & SLOPE FISHERY

The reef and slope fishery accounts for up to 60% of fish landings in Montserrat. In this analysis, five years of catch and effort data for the reef and pot fisheries from 2003-2008 were used. Previously, these data were recorded and stored on paper. The major task of computerizing these data was completed during the inter-sessional period.

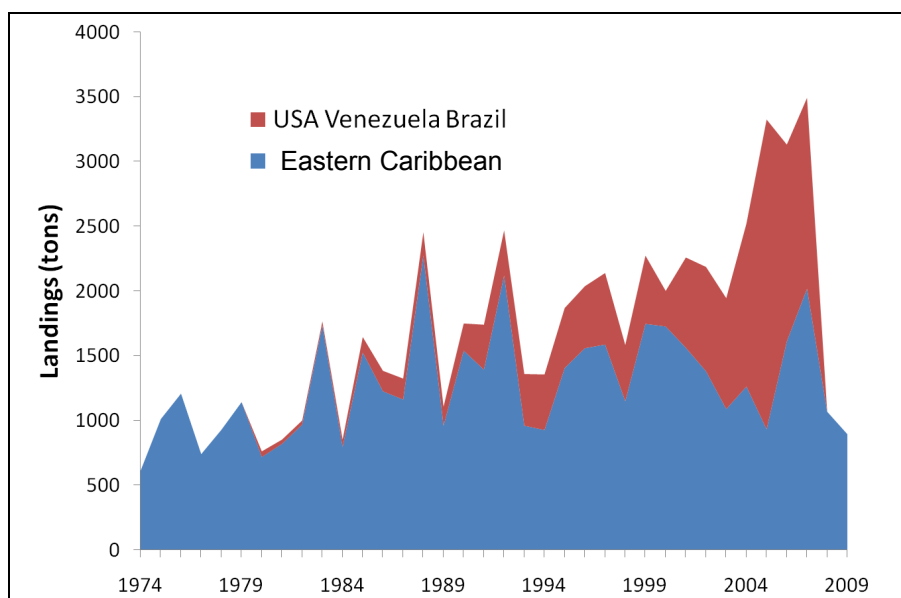
The main focus of this exercise was to determine if catches were increasing or decreasing through the years. Seven species were common in the catches: Red hind, Queen Triggerfish, Longjaw Squirrelfish, Honeycomb Cowfish, Blue Tang, Coney and Doctorfish. The catch rates for these species were highly variable across the months and the years and no clear trend could be seen. In order to improve future analyses, it was recommended that in addition to the collection of landings and effort data, lengths of these species should be sampled to determine if fish sizes are changing.



Red hind (spotted fish -left) and queen triggerfish (fish with blue markings- top right) are the most important reef and slope fishery species by catch and value. There has been a marked increase in demand for these fish over the last five years.

LPWG- EASTERN CARIBBEAN DOLPHINFISH ASSESSMENT

Thirty-five years of annual dolphinfish landings data were reviewed from Barbados, St. Lucia, St. Vincent & the Grenadines, Trinidad & Tobago, Grenada, the USA, Venezuela, and Brazil. As shown in the graph below, there were no significant decreases in catches throughout these years and overall, the catches have been increasing.



Dolphinfish landings by regions (1974-2009). In the Eastern Caribbean dolphinfish catches have increased from 700t in the 1970's to 1500t in recent years. When catches from the USA and South America are included the totals have exceeded 3000t in recent years.

LPWG- EASTERN CARIBBEAN DOLPHINFISH ASSESSMENT CONT'D

Further analysis of the Eastern Caribbean data showed no clear yearly patterns in the size of the dolphinfish population. It was therefore recommended that the fishing pressure should not be increased until more data become available. The additional data are necessary to determine a sustainable level of harvest.

New information has also suggested that dolphinfish move between the south-east USA and the Eastern

Caribbean. It is therefore likely that the same dolphinfish population is being fished by these countries.

Venezuela, Brazil, and USA have large dolphinfish fisheries and land almost twice as much as the Eastern Caribbean countries. Given this fact, it was highly recommended that future dolphinfish assessments should include data from these countries.

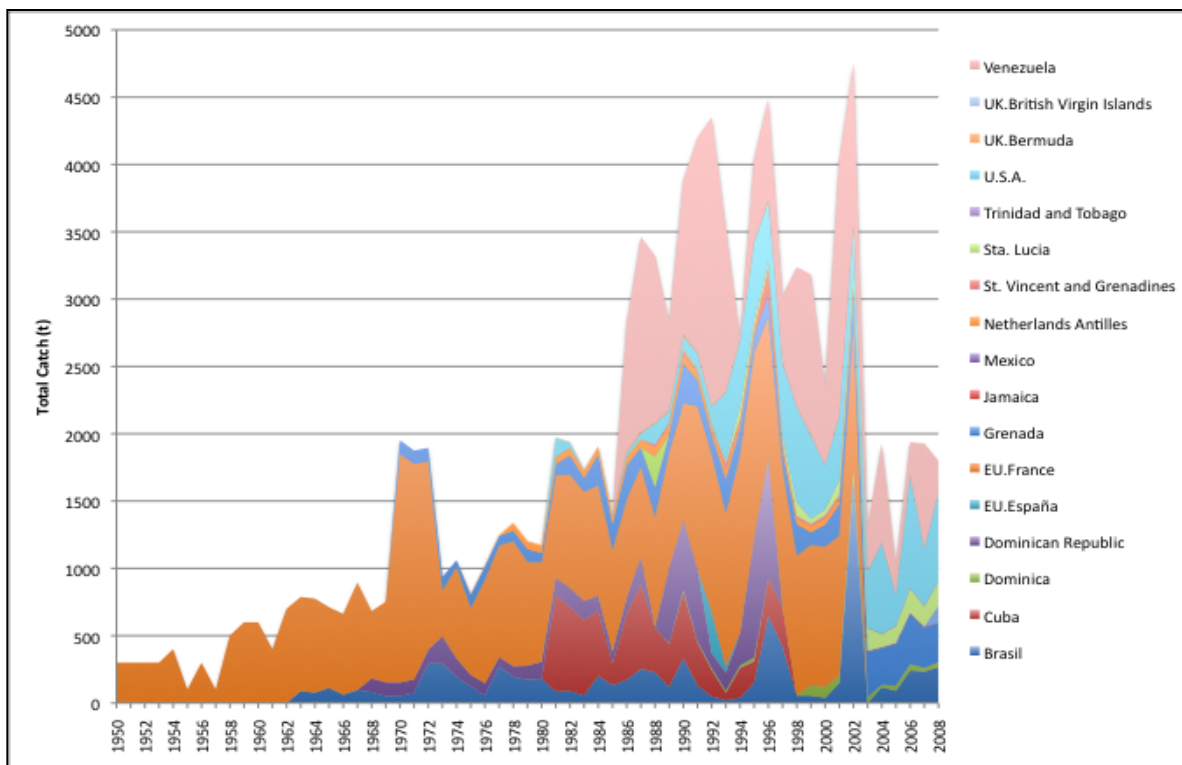
LPWG— BLACKFIN TUNA DATA REVIEW

Blackfin tuna is one of the most frequently landed small tunas in the Eastern Caribbean. Large fisheries also exist in Brazil, Colombia, Cuba, Dominican Republic and Venezuela.

As shown in the graph below, blackfin tuna landings have increased continuously up until 2002 to a maximum of 4500t after which there was a significant decline.

The LPWG group reviewed landings data which were submitted to ICCAT by 17 countries, of which Dominica, Grenada, St. Vincent & the Grenadines, St. Lucia, and Trinidad & Tobago were included.

The collection of length data for blackfin tuna is planned for the inter-sessional period in preparation for an assessment during the Seventh Scientific Meeting.



Annual blackfin tuna landings by country (1950-2008). These data are reported to ICCAT by countries, and are an under-estimation of total catches.

SCPWG— ECONOMIC & ECOLOGICAL LINKAGES BETWEEN THE REGIONAL FLYING FISH & DOLPHINFISH FISHERIES TO BE EXAMINED

Dolphinfish is the most important large pelagic species in the Eastern Caribbean by weight in landings and value, while flyingfish is the most important small pelagic fish by value in the southern Lesser Antilles. These two fisheries have an interesting relationship as flyingfish and dolphinfish are usually caught on the same fishing trips with different fishing gears and flyingfish is one of the major food items for dolphinfish.

This assessment is seeking to link economic aspects such as cost of fishing and profits for the two fisheries along with the predator-prey relationship between these species. Different types of management strategies for the flyingfish and dolphinfish fisheries will also be considered given that in addition to fishing, a range of factors such as weather, temperature, food availability and fish population sizes may affect the fisheries. The risks of success or failure associated with each of these management strategies will be investigated to determine which is the best option.

These analyses will build on the dolphinfish assessment completed during the Sixth Scientific Meeting as well as a flyingfish bio-economic study completed during 2009. The outputs of this assessment will be a major contribution to the Caribbean Large Marine Ecosystem and Adjacent Regions (CLME) Project, which is focused on improving the governance of fisheries. More information on the CLME Project can be obtained from <http://clme.iwlearn.org/>. Preparatory work for this assessment will involve updating catch, biological and economic information for both the flyingfish and dolphinfish fisheries.



Flyingfish (left) and dolphinfish (right) ready for sale!

CLWG- ECONOMIC STUDY OF THE QUEEN CONCH FISHERY IN TCI

Catch and effort data from 1974-2008, as well as economic data (fishery investment and operation costs, and profits) were used in this analysis. The economic data were collected during fisher and processor surveys completed in 2010.

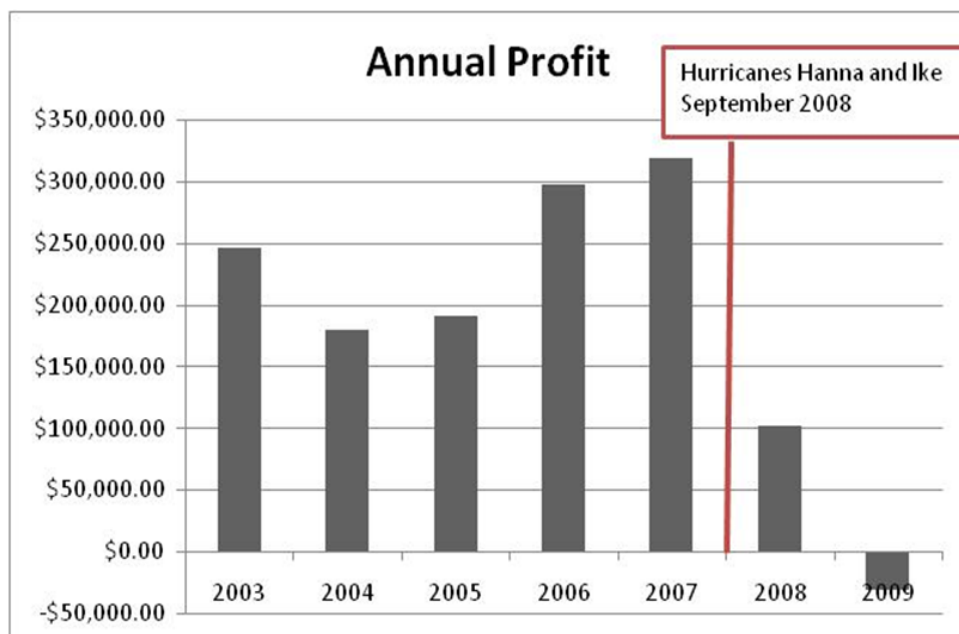
Queen conch is not considered overfished in the Turks & Caicos Islands, however the analyses showed that the fishery is close to the point at which operations are not profitable. The last fishing season 2009/2010 has seen a reduction in the number of boats from 176 in 2008/2009 to 113, which also supports the conclusion that the profitability of the fishery has been reduced. Two major hurricanes in 2008, Hanna and Ike have also affected the fishery.

A quota system, which sets the total amount (weight) of queen conch that can be harvested annually, is used to manage the fishery. This quota system does not control fishing effort, and as a result the economic benefits of the fishery are not optimal. The study results suggest that in addition to the quota system, restrictions on the number of boats (effort) may be necessary to ensure that the best possible economic benefits from this fishery are achieved.



Queen conch landed without their shells (top) and being weighed (bottom).

Annual profits for the TCI queen conch fishery from 2003-2009 in USD shown on the right. Over the six years, profits have ranged from approximately \$250 000 to \$310 000. A loss of approximately \$ 40 000 was seen in 2009.



FIRST MEETING OF THE DATA METHODS & TRAINING WORKING GROUP

The DMTWG met for the first time since its establishment in 2009. A training session in R, a statistical software used in the analysis and presentation of fisheries data was successfully completed and a follow up is scheduled for the Seventh Scientific Meeting.

Communication and exchange of ideas among group members during the inter-sessional period is one of the major issues being addressed by the DMTWG and an e-group has been set up to facilitate these activities. Members of the DMTWG will also be able to access online training and reference materials through a CRFM notebook and toolbox located on the CRFM website: www.caricom-fisheries.com. The CRFM notebook will contain fisheries analyses completed by countries during the Scientific meetings, while the toolbox will contain literature and worksheets for various assessment methods.

The DMTWG was established in 2009 to continue the work of the Ad Hoc Methods Working Group. This involves reviewing assessment methods, training fisheries officers and networking with other agencies, institutions and projects.

The importance of complete and accurate datasets was a focal point in the use of assessment methods and fisheries officers were reminded to review all datasets prior to the Scientific Meetings. The need to increase awareness about the work of the Scientific Meetings and capture the outputs in a reader-friendly manner was also discussed. As a result, two newsletters have been prepared during the inter-sessional period (an issue covering the first five Scientific Meetings and the current issue).

FLYINGFISH & SPINY LOBSTER STUDIES COMPLETED UNDER THE UNU-FTP IN

The CRFM and the United Nations University-Fisheries Training Program (UNU-FTP) have partnered to strengthen fisheries institutional capacity in the Caribbean. Three studies have been completed during the 2009-2010 period and the results were presented at the sixth Scientific Meeting.

-Harvesting of flyingfish in the Eastern Caribbean: a bio-economic perspective: A bioeconomic model based on the predator-prey relationships among flyingfish, dolphinfish and other commercial fish species in the eastern Caribbean was developed and used to answer the management question of whether direct harvest of flyingfish (the prey) or indirect harvest through converted predator biomass (dolphinfish) is more profitable, given the low price of flyingfish compared to that of dolphinfish. The results showed that direct harvest of flyingfish is the better management strategy.

-Assessment of the spiny lobster of Belize based on fishery dependent data: The results showed that declines over a ten year period (1999-2009) in catches and abundance of lobster have occurred and it is believed that the resource is overfished. However, the results of the study were uncertain due to limited data. The management recommendations from this study were a reduction in fishing effort and an increase in the minimum size of harvested lobster.

-The use of production models and length frequency data in stock assessments in Jamaican fisheries– building on the Caribbean spiny lobster observations: Four methods were used to analyze the lobster data set and the results showed that a large portion of landings were below the minimum legal size and the current fishing effort was too high. It was recommended that both the current effort and catches should be monitored to avoid over-exploitation of the lobster resource.

EDITOR'S NOTE

This newsletter provides updates on the progress made regarding activities and initiatives that were undertaken/addressed by the sixth annual CRFM Scientific Meeting. The Newsletter is published by the Caribbean Regional Fisheries Mechanism Secretariat. The full meeting reports for the Sixth 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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