

Progress in the Regional Queen Conch Fisheries Management and Conservation

Avances en el Ordenamiento y Conservación Regional del Caracol Rosado

Progrès dans la Gestion des Pêches Régionale Strombe Géant et la Conservation

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ABSTRACT

With the support of the Western Central Atlantic Fishery Commission, the Caribbean Fisheries Management Council, The CITES Secretariat, the Caribbean Fisheries Management Council and the Central American Fisheries and Aquaculture Organization, the Regional Queen Conch Fishery Management and Conservation Plan has been produced for further revision and formal adoption. The Plan presents a set of 14 management measures that can be applied at the regional or sub-regional level for the sustainability of queen conch populations, the maintenance of a healthy fishery and the sustenance of fishers and fishers' communities. These measures were supported by experts and managers members of the WECAFC/CFMC/OSPESCA/CRFM Working Group. Concerns about the status of this Caribbean resource and the need to implement a common regional management began nearly 20 years ago, but unfortunately, until now, tangible results of regional and sub-regional initiatives have been scarce due to the lack of cooperation and political support across the region. Given the ecosystem-based management approach recommended in this regional plan, it is expected that partnership and collaboration throughout the Wider Caribbean region would be enhance and lead to improvements in the long-term governance of queen conch fisheries. Considering that queen conch is already a relatively highly regulated fishery, the harmonized regional measures presented in this document will require minor adjustment only to achieve the broader objectives envisioned in the regional plan. This work is being made to build regional support among scientists, fisherfolk, and educators, all part of the GCFI community.

KEY WORDS: Queen conch, fisheries management, regional planning

EXECUTIVE SUMMARY OF THE REGIONAL QUEEN CONCH FISHERY MANAGEMENT AND CONSERVATION PLAN

The overall objective of this 10-year Regional Queen Conch Fishery Management and Conservation Plan is to guide the implementation of a set of identified management measures that can be applied at the regional or sub-regional level for the sustainability of queen conch populations and for the maintenance of a healthy fishery and livelihood of the people involved in the fishery.

The ecosystem approach forms the basis of this Regional Queen Conch Fishery Management and Conservation Plan, enhancing partnerships and collaboration throughout the Wider Caribbean region to improve the long-term governance of queen conch fisheries across the Caribbean.

The Regional Queen Conch Fishery Management and Conservation Plan was formulated with the following specific objectives:

- i) To improve the collection and integration of scientific data needed to determine the overall queen conch population status as the basis for the application of ecosystem-based management,
- ii) To harmonize measures aimed at increasing the stability of the queen conch population and to implement best-management practices for a sustainable fishery,
- iii) To increase coordination and collaboration toward achieving better education and outreach, monitoring and research, co-management and strengthening, optimizing and harmonizing regional governance arrangements, and
- iv) To adopt regional management measures, which incorporate the precautionary approach.

LOGICAL FRAMEWORK APPROACH

Overall Objective	Outputs	Indicators	Means of Verification	Assumptions
To guide the implementation of a set of management measures that can be applied at the regional or sub-regional level for the sustainability of queen conch populations and for the maintenance of a healthy fishery and livelihood of the people involved in the fishery.	To achieve a harmonized adaptive, ecosystem based regional management plan, enhancing partnership and collaboration in measures resulting in improved long term sustainability and governance in the Caribbean queen conch fisheries.	<p>Agreements and resolutions on regional cooperation and collaboration brokered by the Regional Queen Conch Working Group and other international organizations.</p> <p>Bi-lateral and multilateral agreements on marine resource conservation issues.</p> <p>Economic and trade statistics of queen conch.</p> <p>Agreement on Draft Regional Queen Conch Fishery and Conservation Management Plan and time frame for implementation of joint measures.</p> <p>Compliance with CITES Convention within three years of approval of the Regional Plan by WECAFC.</p> <p>Total of five (5) harmonized management measures implemented in five years.</p> <p>Bi-lateral agreements on monitoring sub-populations in first five years.</p>	<p>Agreements and resolutions registered by Regional Queen Conch Working Group and other international organizations in Meeting Reports and year reports.</p> <p>National economic performance data.</p> <p>National fisheries and trade legislation.</p> <p>National economic and trade statistics.</p> <p>Progress reports from the Queen Conch Working Group and International Organizations.</p> <p>CITES reports from the Animal Committee, Standing Commission and Significant Trade Review (STR) reporting.</p>	<p>Environmental issues remain prime concern in national politics.</p> <p>Political will by countries' legislators, defense forces and environmental authorities.</p> <p>Funding for critical components like scientific research, monitoring and enforcement.</p> <p>Continuous active participation by stakeholders in decision making processes.</p> <p>Willingness of fisheries departments to commit funds and staff.</p> <p>Inertia on part of government and stakeholders.</p>

Specific Objectives	Outputs	Indicators	Means of Verification	Assumptions
To improve the collection and integration of scientific data needed to determine the overall queen conch population status as the basis for the application of ecosystem-based management.	Integrated national and regional databases with population status data, based on accepted research and survey protocols.	<p>National databases for queen conch ready for regional integration.</p> <p>Protocols agreed upon to calculate population dynamics.</p> <p>Harmonized and integrated catch and fishing effort monitoring programs.</p> <p>Level of reporting by respective sectors.</p> <p>Number of (sub-) regional habitat maps.</p>	<p>Framework design of an integrated regional database.</p> <p>Agreements on protocols for population dynamics and monitoring.</p> <p>Volume and quality of production reports by respective sectors.</p> <p>Habitat maps.</p>	<p>Availability of skilled laborers to keep data base running with up-to-date data.</p> <p>Ability within the region to agree between various models/protocols on data gathering and monitoring.</p> <p>Traditional resistance to providing quantitative production data.</p> <p>National security issues in elaboration of marine habitat maps.</p>
To harmonize measures aimed at increasing the stability of the queen conch population and to implement best-management practices for a sustainable fishery.	Set of harmonized practical regional best management measures to guarantee sustainability of resource, which form the basis for a regional conservation policy.	<p>Harmonized regional closed season.</p> <p>Harmonized regional meat conversion factors.</p> <p>Protocol to establish adequate adult density per hectare.</p> <p>Standardized NDF format for all countries and all queen conch products.</p>	<p>Number of countries with a national regulation on annual closed seasons.</p> <p>National statistics applying conversion ratios.</p> <p>FAO and CITES official statistics.</p> <p>Annual NDF reports in consensus formats submitted to CITES.</p> <p>Implementation, level and historic trend of applied precautionary principle.</p>	<p>Lack of collaboration from stakeholders.</p> <p>Delays in legislation processes for issuance of national regulations.</p> <p>National data gathering systems which allow for quantification of landings in different product forms.</p>

Specific Objectives	Outputs	Indicators	Means of Verification	Assumptions
To increase coordination and collaboration toward achieving better education and outreach, monitoring and research, co-management and strengthening, optimizing and harmonizing regional governance arrangements.	Regional resource governance scheme supported by an ecosystem based management approach.	License systems for artisanal and industrial fishers. Regional agreement on use of different fishing gears and protocols on its application. Multilateral agreements on joint application, monitoring and enforcement of satellite VMS systems. Number of bilateral and multilateral agreements to counteract and eliminate IUU fishing and trade. Traceability protocols to determine origin and combat IUU fishing and trade.	Data bank with information on license owners. National legislation and international agreements on the use of types of gear and their geographical application. Protocols on the use of diving gear. Number of countries with satellite VMS obligation for fishing vessels. Cases of integrated satellite VMS system and data exchange. Signed treaties for joint patrolling and enforcement. Number of coordinated and/or joint patrols. National traceability schemes implemented by countries according to international requirements.	Collaboration of stakeholder groups to comply with license requirements and due diligence. Delicate national security issues can be mitigated in coordinated (joint) activities, data exchange and enforcement issues. Patrolling for IUU fishing subordinate to drug controlling efforts. Lacking and/or inadequate monitoring of reports on traceability.
To adopt regional management measures, which incorporate the precautionary approach.	Regional clearing house on biological, economic, social and cultural issues related to the extraction, processing and trade in queen conch and derivatives.	Educational programs and outreach activities tailored to specific stakeholder group, applicable in countries of the region. Level of participation by stakeholders. Regional adaptive, participative and ecosystem based Queen Conch Fishery Management and Conservation Plan.	Educational programs incorporated in national educational curriculums. Co-management agreements. Meeting and course reports with list of participants and evaluation of activities. Significant number of signatory parties to Regional Queen Conch Fishery Management and Conservation Plan	Interest by stakeholders. Time required to reach consensus on regionally developed educational and outreach programs.

SUMMARY OF THE REGIONAL QUEEN CONCH FISHERIES MANAGEMENT AND CONSERVATION PLAN: MEASURES VALIDATED BY THE CFMC/WECAFC/CRFM/OSPESCA QUEEN CONCH WORKING GROUP

I. Recommended Short-term Management Measures

1. Harmonized and simplified categories of queen conch meat conversion factors.

Justification — In the queen conch fishery, the main commodity is the meat fillet or muscular foot of the gastropod. Differences in the processing of queen conch meat affect the estimation of its catch data in terms of overall yield and numbers of individuals. Therefore, uniform conversion factors need to be determined and applied to catch data so that more accurate and precise, regionally comparable landing estimates can be generated. Specific conversion factors exist only in some countries (i.e., Antigua and Barbuda, Bahamas, Belize, Dominican Republic, Jamaica, Honduras, Martinique, Mexico and Nicaragua), but they are necessary for all countries.

Implementation advice — All countries and territories should report their queen conch landings and imports/exports utilizing standardized definitions and conversion factors. If available at the national level, those factors are preferable. In absence of national conversion factors, data should be expressed utilizing agreed regional conversion factors. FAO has proposed the following regional conversion factors:

Processing grade	Processing definition	Conversion factor
Dirty meat	Animal without the shell	5.3
50% clean	Removal of the operculum (claw) and the visceral bag.	7.9
100% clean	Only the white meat remains	13.2

Countries should continue to collect weight data by processing grades to update and improve the proposed conversion factors.

2. Improvement of catch and effort monitoring programs.

Justification — Queen conch catch data are often poor or incomplete, as they are often not organized with statistical rigor, represent only short time periods and/or are based on processors' purchase reports. Local consumption is seldom included in the catch statistics. Fishing effort is a key variable, particularly because most models use catch per unit of effort (CPUE) as a measure of abundance. The efficiency of effort often changes over time by changes in fishing techniques and fishing grounds.

Implementation advice — Agree to form a regional advisory group that will carefully analyze catch and effort databases existing at sub-regional levels and propose strategies and applications for the improvement of data collection and processing, including optimizing possibilities for collaborative work and increasing compliance for reporting. Resulting strategies may need to include:

- i) Design of better-structured queen conch survey formats;
- ii) Improving mechanisms to facilitate and increase fishers' reporting;
- iii) Compiling, organizing and digitizing historical queen conch fishery data from analogue formats;
- iv) Applying conversion factors and determining the degree of queen conch products used for local consumption;
- v) Interviewing experienced fishers and recreating a history of changes in typical fishing techniques and the likely effects on the efficiency of fishing effort; and
- vi) Work on improving existing digital databases at national and sub-regional level.

3. A synchronized regional closed season.

Justification — Queen conch can potentially reproduce year round. High water temperature (28 - 29°C) is associated with the peaks in queen conch reproduction and gametogenesis. A harmonized regional closed season would help reduce overall fishing mortality and contribute to the success of queen conch mating and spawning thus supporting reproduction and population replenishment, while at the same time facilitating the monitoring and patrolling needed to counteract illegal fishing. Most countries have a closed season at some time during the calendar year. The maximum benefit is only achieved if the temporal limitation in fishing effort is exercised equally over broad areas, thus allowing for population resilience and connectivity.

Implementation advice — The adoption of a closed season at regional or sub-regional levels can be developed through existing mechanisms like CRFM, CFMC, OSPESCA, OLDEPESCA and WECAFC. It can be adjusted in response to variability in spatial/temporal patterns once monitoring data become available. Special protocols should be in place in order to enforce this regulation. Fisheries managers can facilitate compliance through better communication and education within the communities and beyond.

Biological studies on the spawning seasons in the western central Caribbean, e.g. Cuba, Haiti and the Cayman Islands provide a good indication of when queen conch are congregating to spawn and, therefore, most vulnerable to overfishing. Enforcement will be vastly improved if trading of queen conch during the closed season is limited to validate inventories (all kind of fishers, processors and traders), following the OSPESCA Resolution OSP 02 09. This regulation can be extended across the wider Caribbean.

4. Non-Detriment Finding (NDF) for export of queen conch meat and its by-products.

Justification — Any country wanting to export queen conch specimen, in whatever form, is required under CITES to provide a permit based on an updated NDF, which demonstrates that the level of export is not detrimental to the queen conch stocks of the country concerned and that the product is obtained in accordance to the prevailing laws of that country. Thus, in order to export queen conch, a country must develop and demonstrate sustainable management and ongoing monitoring of the stock.

Implementation advice — It is recommended that the queen conch range States of the region develop mutually-agreed upon standardized NDF guidelines to be considered as a minimum standard for complying with the export NDF requirement. A proposal for NDF guidelines was presented and supported by the Regional Queen Conch Working Group in the 2014 meeting.

5. Licensing of all queen conch fishers, processors and exporters.

Justification — It will be possible through national licensing or permit schemes to get an estimation of the number of people involved in the fishery and ensure their compliance with reporting and management measures. Licensing will enhance efforts for data and information collection and enforcement. In the fight against Illegal, unreported and unregulated (IUU) fishing, the use of licenses can prove to be instrumental and essential.

Implementation advice — Information on the national licensing programs should be shared on a regional level to promote queen conch conservation. This information should be in a format acceptable to all countries.

6. Adoption of stricter regulations on autonomous diving techniques.

Justification — Diving for queen conch has implications for the safety of fishers. There is ample anecdotal evidence of many diving related accidents in the region. Lack of training, improper equipment, poor maintenance and work under strenuous physiological conditions all contribute to the accident rate.

Implementation advice — Several measures are proposed:

- i) Require dive certification and training (oxygen provider, emergency first response, etc.) for all queen conch fishers as a condition for licensing;
- ii) Require training in diving equipment and maintenance;
- iii) Require annual equipment safety inspections of queen conch fishers who scuba dive,
- iv) Display a dive flag on the dive site; and
- v) Require scuba divers to dive with a buddy.

7. Coordination in patrolling.

Justification — As with any open water marine fisheries, the enormous size of the maritime space of the region represents a challenge. IUU fishing is a serious problem and regional cooperation in coordinated patrolling is greatly needed, as many countries of the region lack the resources to enforce their maritime space.

Implementation advice — To address this issue, bilateral and multilateral agreements should be put in place between range States, possibly by sub-region. This protocol should include, *inter alia*, linkages between enforcement/coast guard, customs, fisheries and port authorities and relevant fisherfolk groups.

8. Extended use of satellite based VMS systems for boats with a length exceeding 10 meters.

Justification — Caribbean fisheries are increasingly relying on satellite based vessel monitoring systems (VMS) because the technology facilitates rescue responses to emergencies at sea and the identification of potential illegal fishing activities, while at the same time providing data to analyze spatial/temporal patterns of the fishery. Regional coordination is a requisite and if it is to be effective, systems and data information have to be compatible regionally.

Implementation advice — Queen conch range States should implement a satellite based VMS system for fisheries management. The region should explore ways to integrate these systems. Development and implementation of satellite based VMS systems should be linked to organize monitoring, control and surveillance (MCS) activities.

9. Continuous education and outreach programs for stakeholders.

Justification — Despite the cultural and economic importance of the queen conch fishery, there are few and isolated activities being developed to create public awareness about queen conch fisheries and related environmental and conservation issues. As a result, progress in fisheries management, compliance and implementation of co-management strategies remains low.

Implementation advice — Develop education and outreach programs aimed at:

- i) Convincing decision-makers of the importance of data collection, scientific analysis, research, train-

ing, and capacity building to manage a shared living marine resource;

- ii) Explaining to inspectors/enumerators the purpose and use of the data collected and why they need to be accurate;
- iii) Increasing awareness among fishers and processors of the queen conch ecology, its role in the ecosystem and the impact of fishing and market demand on the sustainability of the stock; and
- iv) Teaching school children and the general public about the need for environmental protection and conservation of marine resources.

II. Mid-term Recommended Management Measures

10. National level queen conch conservation and management plans.

Justification — In order to effectively implement this Regional Queen Conch Fisheries Management and Conservation Plan, fisheries authorities, queen conch fishers and other relevant stakeholders must develop national management plans, which include strategies for ministerial endorsement, and implementation and enforcement of these Management Plans by the fisheries departments and other authorities.

Implementation advice — National plans are required to guide queen conch fisheries towards sustainability, to generate findings for certain measures and to communicate joint goals, measures and efforts to all stakeholders in the sector. The use of an Ecosystem Approach to Fisheries is essential to create buy-in and ownership for these Plans and to ensure implementation after the planning phase. National management plans will benefit from guidelines given in this Regional Queen Conch Fisheries Management and Conservation Plan.

11. Traceability of queen conch throughout the value chain.

Justification — Export markets and consumers increasingly demand traceability of food products throughout the supply chain. In the joint efforts to reduce IUU fishing of queen conch, traceability plays an important role. Documentation on traceability is required by various export markets. Traceability has the advantage that legal and illegal fishing practices can be separated and allows legally harvested products to fetch higher prices. Traceability provides additional benefits in terms of supporting hygienic handling of the product, quality and food safety. Introduction of standard catch certification forms is preferred, to facilitate trade in conch as well as other fish species. The adoption of the EU catch certificate format, as presented in Annex II of EC REGULATION 1005/2008 “To Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing”, would facilitate trade and traceability, using a best-practice approach.

Implementation advice — Agree to develop a traceability system following existing international guidelines and protocols, such as the application of the EC catch certification, which is already used by various countries.

12. Develop collaborative arrangements needed to generate habitat maps at the scale needed for better fisheries management.

Justification — Few queen conch fishing grounds have had their habitats or bathymetry mapped at a useful scale. The lack of proper maps has limited the application of spatially defined fisheries management measures. Mapping efforts should begin at national levels and can be scaled through regional cooperation mechanisms.

Implementation advice — Work collaboratively to join human, technical and financial resources that result in better habitat mapping, including studies of deeper water areas where most queen conch fishing is currently taking place.

13. Adoption of sub-regional mechanisms to evaluate the fishery potential of queen conch using fishery dependent and independent factors.

Justification — Determining reliable indices of stock abundance is challenging for queen conch because of the complex biology of the species, including highly variable rates of growth, natural mortality and recruitment, which may be density and habitat-dependent. Progress can be made through regionally defined priorities in research and monitoring, time series data for more sophisticated stock assessments and further studies of the species' role in the ecosystem, climate change effects, genetic connectivity and other issues related to an ecosystem-based management approach. Currently, there are significant differences in survey methods applied.

Implementation advice — Agree to create a regional advisory group under the Queen Conch Working Group to analyze existing survey protocols and adopt the most convenient sub-regional efforts. Look for mechanisms for international cooperation in conducting queen conch surveys, including the formation of teams integrated by scientists, managers and fishers. This group can advise in the selection of priorities in research and monitoring sub-regionally, enhancing collaborative mechanisms already in place.

III. Long-term Recommended Management Measures

14. Progressive inclusion of co-management strategies.

Justification — Decisions regarding fisheries in general and the queen conch fishery in particular are being taken by high-level government officials, often with insufficient involvement by the different stakeholders. Fishers understand problems in the fishery and are usually eager to express their concerns and recommendations. However, these inputs can go unheard due to low levels of fishers' organization and empowerment. Fisheries co-management in the

Caribbean remains primarily at the pre-implementation phase.

Implementation advice — Agree to define a proper legal framework for the promotion of co-management in fisheries and work with the local communities to increase their willingness to participate.

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