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INTER-AMERICAN TROPICAL TUNA COMMISSION

1ˢᵀ TECHNICAL MEETING ON DORADO

Review current state of knowledge and identify available data sources for dorado in the eastern Pacific Ocean

14-16 October 2014
Manta, Ecuador

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REPORT OF THE MEETING

APPENDIX 4.

PLANNING OF A JOINT RESEARCH EFFORT

1. Biological parameters

Growth. Standardization of the different methodologies for determining age (different structures), training the countries needing assistance. Extend the sampling coverage of skeletal structures (scales, otoliths, etc.) in the region (Colombian Pacific and Central America, etc.) and establish the regional sampling protocol. Protocols for determining age extant in some countries (Peru, Ecuador, Guatemala, Mexico, Colombia) could be considered in this process.

Length-weight relationship. Standardization of the different measures taken in the region; for example fork length, total, gutted, complete, head removed, etc.

Reproductive biology. Efforts for the development of an *ad hoc* macroscopic scale. Comparisons of the different maturiry scales and methods for determining fecundity. Standardization of maturity scales. Development of training activities in countries that need it. Development of the sampling design with a suitable spatial and temporal component. Review of the methods used in determining size at first maturity.

2. Stock structure

Spatiotemporal analysis. Joint spatiotemporal analyses of the length composition information available in the region and variations in its centers of concentration.

Tagging. Development of a regional tagging program for dorado considering appropriate statistical design elements (spatial and temporal component). Explore the possibility of developing/strengthening tagging activities in collaboration with the private sector (commercial and sport) and/or based on research platforms.

Length composition. Regression trees for investigating the stock structure of the region. For example, work on bigeye at the IATTC.

Genetic studies. Support existing studies and improve the sampling design (spatial and temporal component). Develop protocols for genetic information and incorporate them into existing data collection protocols. Establish coordination among the different existing genetic studies and future sampling activities.

Stable isotopes. Support the existing studies in the region, facilitating obtaining samples. Establish protocols for data collection and their standardization at the regional level.

Microchemistry of otoliths. Consider the usefulness of this methodology for dorado.

Association with oceanographic effects.

Parasites studies as possible tool for stock identification.

3. Correlations with the environment

Monitoring of existing studies. Temperature-oxygen correlations, chlorophyll-dynamic sea level correlation. Explore relationships with other variables

Database. Establish a joint database at the regional level on environmental variables of interest. Consider the various sources of information available and you mention it.

4. Assessment of management strategies

Management objectives. Identify them (MSY, maintain an average catch level, ensure the reproduction of the stock, establish spatiotemporal closures). Socio-economic indicators. Indicators of product quality; for example, histamine and heavy metal levels.

Stock indicators. Identify these indicators that could be estimated with the information available (CPUE, catch and effort indicators, environmental indicators, average lengths, mortality estimates). Information from on fisheries surveys, fleet dynamics, fleet type and size, characterization of gears, selectivity. Indicators of productivity and susceptibility or other risk analyses.

Define the control rules for management. Examples: effort control measures, catches, spatiotemporal closures, minimum sizes, catch quotas, fleet type and size, gear selectivity.

5. Data collection

Monitoring. Monitor the collection of information on size and weight (small, medium, and large) class compositions obtained from industry. Standardize the definitions of these classes in the region.

Sampling protocol. Establish a consensus on collecting information. Use of the metadata as a basis for the existing information-collection protocols.

Collection of morphometric information for comparative analyses

Sampling coverage on other vessels. Explore the possibility of expanding observer coverage aboard small purse-seine vessels (Classes 1 to 5).

6. Other matters

Toxicology studies.

Studies of trophic ecology and of communities. Example: ecosystem approaches to fisheries.

Larval studies. Example: on *Coryphaena equiselis.*