

Minute: Following steps for the alternative method to assess the Corridor San Cosme-Punta Coyote fishery and the sea sand bass Fishery to connect to harvest strategy

Location: La Paz, BCS, México

Date: 1st of December, 2020

Attendees:

Belén Ojeda
Carlos Álvarez
Jeremy Prince
Juan Carlos Castro
Ollin González
Pablo Álvarez

Objective of the meeting: To define following steps in regard to two main topics:

- The LBSPR in order to do stock assessment.
- The Corridor feasibility analysis / Management implementation / Harvest Control Rule (HCR) development

General considerations

- For the second stage of the work with Jeremy there will be no traveling. Instead, the airfare and accommodation expenses can go directly to Jeremy's salary.
- Part of the process will be extended to other people outside the project, so there is more understanding about the LBSPR methodology.
- Jeremy and Ollin will work in the agenda of what is stated below.

Stock evaluation for fish species using data-limited methods, such as length-based SPR.

- 1- Defining structure of the fisheries for each species. (ej. Where adults/sub-adults are targeted, size structure and CPUE of different fishing areas). From this it will be determined how the data should be used to assess SPR (adults) monitor CPUE trends in different parts of the fishery (juveniles / sub-adults / adults / combined). For this:
 - Juan Carlos and Jeremy will have weekly meetings to work on the data species by species.
 - If necessary Ollin can attend to any of the meetings to help with the data interpretation.
 - The analysis will prioritize five species: cochito, cabrilla, huachinango, jurel and verdillo. NOTE: It is possible that the LBSPR model does not fit for all species (ej. Jurel), however all of them will be analyzed for patterns and to see if something else can be done.
- 2- A workshop to give more sense about the LBSPR model to more people and on the other hand to present the results and generate discussions about how these results can support HCR.

- For the workshop two sessions split in two different days were proposed. There are a couple of options in how this can be done:
 - Option A: First, Provide reading materials on LBSPR for new participants to read before the workshops; Second, a first session for new participants to provide an introduction to the basics about LBSPR; Third, a second session with old and new working through the data Corridor species and sand bass data, focusing on how to analyse them and develop HCRs with them. Forth, a third workshop as required to go through questions of other people and continue analysing data and developing HCRs for all participants.
 - Option B: First, Provide reading materials on LBSPR for new participants to read before workshops; Second, it's the first session where we will go through the Corridor species and sand bass data, explain the process and the interpretation of results and discuss how it can inform a HCR. Third, it is to leave homework to other participants so they can play with their own data and formulate questions; Forth, a second session to go through questions of other people.
 - Which workshop option it will be it's a decision of Niparaja and ProNatura.
 - To present the species analysis Juan Carlos and give the results and then Jeremy talk about the interpretation.
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- 3- For our team (Jeremy, NIP and PN) we might need more than one session to look at every species, but for the workshop with others we could focus on some simpler species which have little special structure in their size structures (ej. Trigger fish).
- 4- As a final product a report will be handed with results, interpretations and recommendations about how to improve data gathering and to connect data with HCR in the future.

Feasibility analysis

- The idea of the feasibility analysis is to begin the process of HCR development. The HCRs connect assessment results with management changes with rules for how assessment results change management. The feasibility analysis maps the range of possible management that can potentially be used. Initial steps for Niparaja should be to evaluate which of the possible management measures mapped out by the feasibility analysis could be implemented and then consult with the fisherman about which they could agree to implement.
- As a first step, the feasibility analysis and its scope will be presented to authorities.