

Scientific and Statistical Committee (SSC) Recommendations on SEDAR 80 St. Croix and St. Thomas/St. John Queen Triggerfish Assessments

April 9-11, 2024

Southeast Fisheries Science Center (SEFSC) staff presented results from the SEDAR 80 St. Croix and St. Thomas/St. John Queen Triggerfish Assessments to the SSC at the April 2024 meeting.

Data

Data used in the SEDAR 80 models included commercial landings, Trip Interview Program length samples, and the National Coral Reef Monitoring Program's Reef Fish Visual Census (RVC) length data. RVC data were also used to construct an index of relative abundance. The terminal year for all assessment model inputs was 2019.

Stock Status

The stock assessments were not able to estimate the overfished status for the St. Croix or St. Thomas/St. John queen triggerfish stocks; thus, their status remains unknown. However, each model was able to estimate short-term harvest levels that would prevent overfishing (i.e., the overfishing limit [OFL]) by assuming that future recruitment will continue at recent levels. For both St. Croix and St. Thomas/St. John Queen triggerfish, the models determined that overfishing is not occurring.

Acceptable Biological Catch (ABC) Control Rule

After a discussion of the uncertainties¹ that exist in the models, the SSC agreed to set ABCs for the St. Croix and St. Thomas/St. John Queen triggerfish stocks using **Tier 3b of the ABC control rule**. Under Tier 3b, the ABC is determined from the OFL as buffered to account for scientific uncertainty ($ABC = \text{buffer} * OFL$), where the buffer must be ≤ 0.9 .

The SSC made the following statements with regard to each island platform:

- Considering both the uncertainty in major assessment inputs and outputs, and recognizing that stock status seems healthy, a precautionary approach to establishing an ABC should be used.
- The reference models represent the best scientific information available (BSIA). The projected OFL values are based on a proxy F_{MSY} based on a spawning potential ratio (SPR) of 0.4.
- The ABC is determined by using the F_{MSY} proxy to account for productivity uncertainty, and the constant catch set at the F_{MSY} proxy value is used to establish the ABC. The ABC will thus be a constant value, with a buffer that varies each year relative to the OFL (Figure 1).
- This constant catch decreases variance in catch limits under such (thus avoids chasing noise or uncertainty) and buffers against the uncertainty in the population scale.

¹ There is high uncertainty in both life history (especially steepness, which strongly determines fishing mortality reference points), and therefore stock productivity that determines how much a population can be fished, and the scale of the population, or how many fish are available to be caught.

- In the case of queen triggerfish, this approach to setting ABC provides catch limits well above what is currently being taken but does not inflate the catch limits to levels that overweight what we believe is known about both the productivity and scale of the stock.

Additionally, SSC members suggested that the ABC control rule chosen during the SSC meeting is a precautionary approach that absorbs some of the uncertainty. This comment was made in response to a short presentation, given by Matt Damiano, on the robustness of an F_{MSY} proxy based on a spawning potential ratio (SPR) of 0.4 to nonstationary in recruitment. Another SSC member provided some general caution against reducing the complexity of the current assessment model framework moving forward, to avoid (additional) strong assumptions that more simplistic models will require.

The SSC will recommend to the Caribbean Fishery Management Council OFL and ABC values for queen triggerfish in St. Croix (**Table 1**) and St. Thomas/St. John (**Table 2**) for the years 2024-2027. If new OFL and ABC values from an updated assessment or full SEDAR assessment for the stocks are not conducted and available for years 2028 and later, then the OFL and ABC values specified for year 2027 will remain in place until amended.

Table 1. Overfishing limit and acceptable biological catch values recommended for the St. Croix queen triggerfish stock for years 2024-2027, based on results of the accepted SEDAR 80 stock assessment.

Year	OFL	% Reduction from OFL	ABC
2024	24,651	23.70	18,808
2025	22,773	17.41	18,808
2026	22,316	15.72	18,808
2027	22,025	14.61	18,808

Table 2. Overfishing limit and acceptable biological catch values recommended for the St. Thomas/St. John queen triggerfish stock for years 2024-2027, based on results of the accepted SEDAR 80 stock assessment.

Year	OFL	% Reduction from OFL	ABC
2024	283,918	65.55	97,809
2025	193,378	49.42	97,809
2026	166,220	41.16	97,809
2027	148,223	34.01	97,809

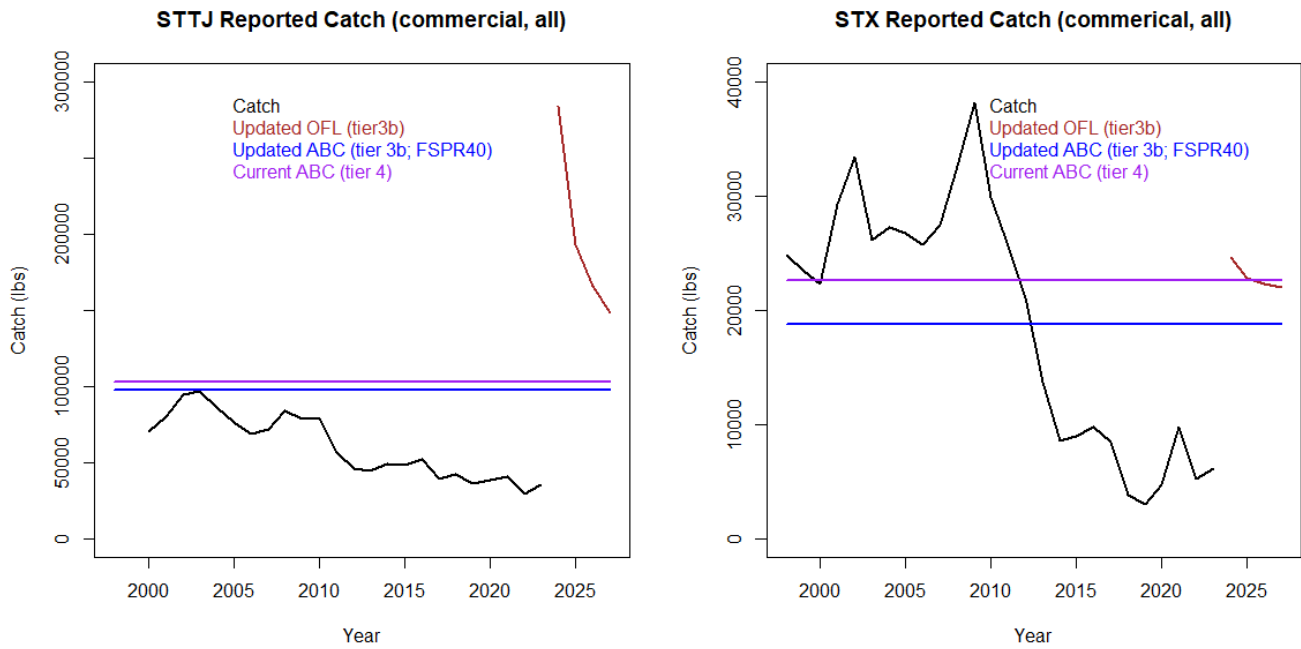


Figure 1. Commercial catch time series for St. Thomas and St. John (“STTJ,” left) and St. Croix (“STX,” right) aggregated by gear type; historical catches in pounds (lbs) are shown in black, with current ABC set under Tier 4 of the ABC control rule shown in purple, the ABC based on the 0.4 SPR proxy (SPR40) shown in blue, and the overfishing limits (OFL) for years 2024-2027 shown in brown.