GROUNDFISH MANAGEMENT TEAM REPORT ON METHODOLOGY REVIEW - PRELIMINARY FISHERY IMPACT MODEL TOPICS AND FINAL ASSESSMENT METHODOLOGIES

The Groundfish Management Team (GMT) reviewed the briefing book material available under this agenda item, as well as Council Operating Procedure 25 (COP 25), and discussed priorities for the 2023 impact projection methodology review, including some brief discussion with the Scientific and Statistical Committee (SSC).

The guidelines outline in COP 25 include which methodological changes would or would not warrant SSC review:

> "Examples of issues that could merit a full review include new model algorithms, methods for incorporating base data into models, catch forecasting methods for major PFMC stocks, and technical changes to stock complexes or conservation objectives. Examples of issues that do not merit full review include updating existing data sets in models, adding new stocks to models, and changing data ranges used to estimate parameters in models. Issues in this latter category will be reviewed within the GMT, and can be implemented without formal review by the SSC and approval of the Council; provided both the Council and SSC receive updates on such changes; however, if warranted, the Council may require additional review by the SSC."

The GMT is bringing forward one impact projection model for potential SSC review, the sablefish trip limit (STL) model (formerly called the "Daily Trip Limit" model), which is used to project sablefish landings in the Limited Entry Fixed Gear (LEFG) and Open Access (OA) sectors. The GMT uses the model to adjust sablefish trip limits inseason, as needed, as well as to project annual landings during the harvest specifications and management measures process. This model has not been reviewed for several cycles.

The STL model independently projects fleetwide landings for each of the four LEFG and OA sectors north and south of 36° N. lat. For example, to project fleetwide sablefish landings in the LEFG sector north of 36° N. lat., a simple linear regression predicting landings per vessel (under status quo methods) uses the weekly and bimonthly trip limits as predictor variables, while a separate linear regression predicting number of vessels participating in the fleet uses the weekly trip limit and inflation adjusted price per pound of sablefish as predictor variables. The projections of these two models are then multiplied to predict fleetwide landings.

In recent years, sablefish Annual Catch Limits (ACLs) and, consequently, sablefish trip limits have been increasing. Simultaneously, vessel participation has dropped in all sectors, largely due to market- and infrastructure-related impacts, some of which were related to the COVID-19 pandemic. Given the co-occurring, yet unrelated, trends in sablefish ACLs and market impacts, the model currently predicts that higher trip limits lead to lower participation. This runs counter to the GMT's understanding of the fishery dynamics and is unrealistic based on discussions with industry. The GMT plans to investigate these issues as well as other potential improvements to the

model, such as using non-linear regressions. Therefore, a review of the STL model may be warranted in 2023.

PFMC
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