GROUNDFISH MANAGEMENT TEAM REPORT ON THE DRAFT SOCIOECONOMIC ANALYSIS FOR THE 2027-28 HARVEST SPECIFCATIONS AND MANAGEMENT MEASURES

The Groundfish Management Team (GMT) reviewed the *Draft Socioeconomic Analysis for the 2027-28 Harvest Specifications and Management Measures* in Agenda Item C.7.a Supplemental REVISED Attachment 5 (hereafter, Analysis). Notably, the Analysis shows little difference in economic impacts across the harvest specification and management measures alternatives (hereafter, Alternatives) for most groundfish sectors. However, the GMT feels that the Alternatives under consideration may have socioeconomic impacts to groundfish fleet segments and communities that are not reflected in the Analysis. Many of these impacts are difficult to precisely quantify with current resources but are important to consider. The purpose of this report is to promote a more comprehensive discussion of the economic impacts of 2027-28 Alternatives that go beyond ex-vessel revenue implications.

We also note that some of the impacts discussed in this statement are outside the scope or intention of the Analysis, while others pertain to assumptions that current catch projection models make about underlying fishery dynamics. The latter are presented in the context of sensitivity analysis – *what are some socioeconomic impacts that we could see if certain model assumptions were changed* – and the former are presented to highlight additional socioeconomic analysis that could complement the current, ex-vessel revenue focused analysis, and perhaps provide the Pacific Fishery Management Council (Council) a more complete socioeconomic narrative in future biennia.

Known Limitations of the Analysis

The largest differences in ex-vessel revenue between the Alternatives in the Analysis occur in the non-whiting individual fishing quota (IFQ) sector (see Table 2-1). This difference is largely due to the higher theoretical/bookend allocation of widow rockfish under Alternative 2 relative to Alternative 1. This fishery-specific context is important to consider because it highlights potential sensitivities of the result to model assumptions. Specifically, the catch projection model for the trawl sector does not explicitly consider species interactions, quota market dynamics, or the ability for trawl vessels to alter targeting practices to optimize profits. If the lower bookend widow allocation under Alternative 1 constrains harvest of co-occurring target species (such as Pacific whiting or yellowtail rockfish), ex-vessel revenue differences between Alternatives 1 and 2 for the trawl sector could be higher than estimated in the Analysis.

The IFQ catch projection model also does not account for quota market dynamics that change with fluctuating allocations. For example, under lower allocations, shoreside whiting IFQ vessels are known to hold onto quota of constraining species to insure against high bycatch events late in the season, which can often result in lower attainment than the IFQ model projects, and consequently lower overall revenue than projected. Furthermore, the projected IFQ catch of Pacific whiting in the following biennium that is being analyzed is constrained to the Pacific whiting catch amount estimated in the most recent full year of data (e.g., 2025 in the Analysis). However, whiting vessels are also held to the amount of all species quota available, and constraining species quota could

result in differences in realized Pacific whiting catch. Pacific whiting contributes a substantial portion of overall IFQ revenues.

In the commercial non-trawl sectors, the Analysis projects no changes in ex-vessel revenues across the Alternatives. This is because the non-trawl catch projection models only provide alternative-specific forecasts for sablefish. While sablefish is the primary source of revenue for commercial non-trawl vessels, these fisheries have been evolving recently to take advantage of non-sablefish harvesting opportunities. Differences in non-trawl allocations for chilipepper, shortspine thornyhead, and other species across alternatives could produce non-trivial differences in ex-vessel revenue differences for commercial non-trawl operators. These non-sablefish revenues are not currently considered in the Analysis beyond their assumed fixed bycatch ratios from sablefish harvest.

For the recreational sector, the Analysis uses Council-alternative-specific projected recreational fishing effort as the input. This is problematic because the Alternatives in and of themselves may have little to no implications for recreational fishing effort; rather it is the management measures (season length, depth restrictions, bag limits, size limits, etc.) ultimately adopted to comply with harvest specifications that impact effort. Here, the timeline of the economic Analysis and the adoption of recreational management measures are out of step: the economic Analysis is completed before the full suite of management alternative options has even been defined. Estimating recreational fishing effort in response to alternative management measures options is arguably the crux of the economic analysis for recreational fisheries, but the current Analysis treats it as a known input.

The recreational fishing effort assumed in the Analysis for Washington and Oregon is the same across Alternative 1 (Default Harvest Control Rules [HCRs]) and Alternative 2 (alternative HCRs). This is because the set of recreational management measure options for both Oregon and Washington are the same across Alternatives. However, the final suite of management options chosen by the Council, and thus total recreational effort and its characteristics (when, where, and how anglers go fishing), is Alternative-dependent. For example, bag limit options may include one to eight fish under both Alternatives, but the higher bag limit options would result in exceeding recreational harvest guidelines under the lower Alternative and would not be chosen by the Council under that Alternative. This would in turn affect demand for certain recreational fishing trips. However, rather than strictly resulting in less recreational fishing effort, that effort may simply get redistributed to different species or trip types. These are all nuances the current economic Analysis does not capture.

In the case of California, the Analysis does project recreational effort change amongst season structure Options 1 through 4 under both Alternatives. As expected, recreational fishing effort under Option 1, which assumes the whole fishery is closed at all depths year-round, is less than Option 2, which assumes the whole fishery is open at all depths year-round. Since these Options are intended to be bookends for analysis, the more informative comparison would result from projected effort under Option 3 versus Option 4. However, effort under Option 3 could not be projected because Option 3 includes depth closures for part of the year, so while it is expected that decreases in effort would occur under Option 3, the amount cannot be quantified because estimates of angler effort are not stratified by depth. New modeling tools may be required to parse estimates

into depth bins. This limitation results in seasonal depth restrictions, which are a major driver in effort in the California recreational fishery, to not be captured when comparing the difference between Alternatives 1 and 2.

Potential methods to expand or supplement the Analysis:

The revenue projections and associated income and employment impacts contained in the Analysis attempt to reduce the complexity of the harvest specifications and management measures decision in order to provide a clear comparison between Alternatives. The Analysis provides an important comparison that aggregates many of the individual impacts to deliver unambiguous information to decision-makers. Although the Analysis is not intended to provide the Council with a full examination of the distribution of socioeconomic impacts across groundfish stakeholders, the GMT supports exploration of complementary analysis that could provide the Council with this additional socioeconomic context.

A more nuanced accounting of the social and economic impacts of competing harvest specifications Alternatives may help the Council weight benefits to, or costs imposed on, the various groundfish stakeholders. The GMT offers the following suggestions for providing this additional socioeconomic context:

1. Consider operational costs (and how they might affect fishing behavior) in addition to revenue. The economic health of commercial fisheries depends not on gross revenue but instead on net revenue (balance of revenue after all costs have been covered). Costs are impacted by fishing conditions as well as external factors such as fuel prices and labor availability. Accounting for costs provides necessary info for managers about whether changes in fisheries management will make it financially feasible in the next period as well as the long-term viability of the fishery. The GMT acknowledges that this is a difficult task. Although data collections such as Economic Data Collection (EDC) and Economic and Social Science Research Program (ESSR) provide analysts with vital information on operational costs of commercial groundfish fishermen, considerable expertise is required in order to use these data streams responsibly. Additionally, empirical modeling of firm productivity and profitability requires specialized knowledge.

2. Consider modeling vessel participation as part of an enhanced economic analysis. When harvest specifications involve large allocation changes, it's important to assess whether—and which—vessels will participate in the fishery. This matters both for understanding community-level impacts (e.g., whether economic conditions could keep vessels at the dock) and for accurately estimating fixed costs in net revenue and profit calculations. A component of this analysis could attempt to capture any projected shifts in effort across the various groundfish (or even non-groundfish) sectors when allocations change, which is not currently part of the Analysis.

3. Consider investing in enhancements to recreational fishing effort models. Demand for recreational fishing trips and associated angler welfare determine the economic value of a recreational fishery. Economic models of effort and welfare for recreational fishing trips generally link trip demand to regulatory constraints, such as bag limits, size limits and season length (Lew and Larson, 2015; Lee et al., 2017; Carter et al, 2020) in order to

evaluate how regulatory changes impact recreational anglers. The current approach to valuing alternative-specific recreational effort, reflected in Agenda Item C.7.a Supplemental REVISED Attachment 5 uses projected Council alternative-specific recreational effort projections to evaluate fishing community-scale economic activity, but does not directly address impacts of alternatives and management measures on recreational angler welfare and effort itself. This is a pragmatic approach that is reflective of the currently available projections. However, it lacks a nuanced discussion of angler behaviors that can help the Council understand some key distributional consequences of management actions. Similar to point #1 above, utility-theoretic models of recreational fishing are resource-intensive, often requiring expensive data collections and technical modeling expertise. A review of the informational requirements necessary for comprehensive socioeconomic analysis of harvest specification alternatives should consider enhanced behavioral modeling of the recreational fleet.

4. The current Analysis strongly focuses on ex-vessel revenue and the community-scale distribution of that revenue but pays relatively little attention to social metrics. The GMT doesn't have specific recommendations for addressing this limitation. However, we observe that there are data streams available, such as the West Coast Fisheries Participation Survey, that are intended to generate insights into the social dynamics of fishery participants. We suggest that a review of socioeconomic analysis for the biennial harvest specifications and management measures action include consideration of how to better integrate sociocultural research and data streams.

5. Consider dedicating resources to incorporate economic information and concepts into catch projection models. These modifications could be discussed at the Groundfish Catch Projection Methodology Review discussion that initiates in September of even years.

The GMT requests guidance from the Council on how best the GMT and other Council partners could explore a more holistic approach to analyzing the socioeconomic impacts from the harvest specifications and management measures action for the 2027-28 biennium and beyond, based on the considerations brought forth in this report.

References

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