

Preliminary Draft Environmental Assessment of Drift Gillnet Hard Caps and Monitoring Alternatives

**PFMC Meeting
Sacramento, CA
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Section 1.1: Proposed Action

- Hard caps on specific protected species
- Enhanced fishery monitoring
- Performance metrics are analyzed in a separate document

Section 1.3: Purpose and Need

- The purpose of the proposed action is to conserve non-target species and further reduce bycatch, including incidental take of ESA-listed species and marine mammals, in the DGN fishery below levels currently permitted by applicable law while maintaining or enhancing an economically viable west-coast-based swordfish fishery.
- The proposed action is needed to better integrate fishery management under the Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species (HMS FMP) with enhanced protection of ESA-listed species and other marine mammals, and to address National Standard 9 and Section 303 of the MSA to minimize bycatch and bycatch mortality and conserve non-target species to the extent practicable.

Section 2.1: Hard Caps Alternatives (Table 4, p. 10)

	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
	1	5	1	5	1	5	1	2-Year Average	1	2-Year Average
Number of Years	1	5	1	5	1	5	1	2-Year Average	1	2-Year Average
Fin Whale	1	2					2	2	1	1
Humpack Whale	2	4	11	55	5	25	2	2	1	1
Sperm Whale	2	8	2	8	3	15	2	2	1	1
Leatherback Turtle	3	10	3	10	4	13	3	3	1	1
Loggerhead Turtle	3	7	3	7	4	9	3	3	1	1
Olive Ridley Turtle	1	2					2	2	1	1
Green Turtle	1	2					2	2	1	1
Short-fin Pilot Whale CA/OR/WA stock			5	23			5	5	2	2
Bottlenose Dolphin CA/OR/WA stock							6	6	2	2
Pinniped Group			4,316	21,580						
Dolphin Group			13,582	67,910						

Section 2.2: Monitoring Alternatives

- No Action Alternative
- Alt 1 - Observers for biological sampling and 100% EM
- Alt 2 – 50% observer coverage per vessel, prohibit unobservable vessels from fishing
- Alt 3 - 100% monitoring by 2018 using observers and/or EM, maintain NMFS 30% coverage until 100% is required

Section 3: Affected Environment

- Description of commercial fisheries
- Target species
- Major non-target fish species
- Prohibited species
- Protected species
 - New information - 2014 Marine Mammal Stock Assessment Report published after Preliminary Draft EA was submitted
 - Sperm whale PBR increased from 1.5 to 2.7 animals per year
 - Mean annual sperm whale M/SI decreased from 3.2 to 1.3 animals/year
 - The DGN fishery is below PBR for all marine mammal stocks

Section 3: Affected Environment

- EFH / Critical Habitat
 - Not present / No effect
- Climate variability and climate change
- Socioeconomic environment

Section 4.1: Environmental Consequences of Hard Caps Alternatives

- Predicted frequency of future fishery closures based on historical performance, 2001 - 2014
- Minor beneficial effects to all species
 - Direct effects when fishery closes due to reaching a hard cap
 - Indirect effects if fishers avoid hard cap species to prevent reaching a hard cap
 - Alternative 5 would close fishery more often, resulting in more beneficial effects to species
- Economic effects

Section 4.3: Environmental Consequences of Monitoring Alternatives

- Minor beneficial effects to all species
 - Indirect effects through increased precision of catch and bycatch estimates
- Significant adverse economic effects
 - Increased monitoring would be industry-funded
 - Unobservable vessels would be prohibited from fishing under some Alternatives

Section 4.5: Cumulative Effects

- Since the hard cap and monitoring alternatives are not expected to have any adverse effects to the resources described in Chapter 3, the proposed action would not contribute to any cumulative adverse effects.

Performance Metrics

- Minor beneficial effects to species if fishers avoid species to prevent exceeding a performance metric
- Economic effects are unknown, since there are no specified consequences to exceeding a performance metric

Section 3.5: Socioeconomic Environment

- EA Section 3.5 (p. 48) describes the socioeconomic environment affected by the proposed action
- Adverse economic impacts on the DGN fishery may result if in-season closures reduce the amount of allowable DGN effort
- A baseline for analyzing economic impacts of the proposed alternatives was established assuming twenty active fishing vessels as a proxy for recent levels of DGN fishery participation

Section 4.2: Background

- A bootstrap analysis to compare the operation of the DGN fishery under hard caps alternatives was presented at the March 2015 SSC meeting
- The methodology has been revised to address SSC concerns
- Estimation results are incorporated into draft EA Section 4.2 Economic Effects of Hard Cap Alternatives (pp. 57-68)

Section 4.2: Description of Methodology

- Simulation based on recent DGN data is used to contrast potential operation of the DGN fishery under the baseline (“No Action”) alternative to operation under Alternatives 1-5 for hard caps
- A general description of methodology is provided on p. 58 and in the introduction to the appendix on p. 64 of the draft
- A more technically oriented description was presented to the SSC (Supplemental NMFS Report under Agenda Item G.2)

Section 4.2: Tables to Present Results

- Results table layout is described on p. 58
- Results of the analysis using post-2000 data are provided in Tables 21-24 (pp. 60-63; note mislabeling of Tables 20-21 as Tables 5-6)
- Corresponding results using all data since 1990 are shown in Appendix Tables 25-28 (pp. 65-68)
- Table 20 is included to address an SSC suggestion to show actual levels of observed interactions at 30% coverage that would trigger a closure

Section 4.2: “No Action” Versus Hard Caps Alternatives

- Using post-2000 data for the analysis (Tables 21-24) and assuming 100% observer coverage, hard caps Alts. 1-4 result in a limited reduction in economic performance and a reduction in the rates of sperm whale and short-fin pilot whale interactions
- Corresponding reductions in economic performance and in sperm whale and short-fin pilot whale interaction rates are much larger under Alt. 5 due to basing closure on total takes, not only mortalities or serious injuries
- Construing “No Action” alternative results as a “vessel limit”

Section 4.2: One-year Versus Two-year Hard Caps

- Table 23 presents bootstrap results for two-year hard caps versions of Alts. 4-5, comparable to the bottom two sets of results in Table 22
- Alt. 4 shows slight improvement in average allowable effort and economic outcomes when moving from 1- to 2-year hard caps, but a substantial increase in risk, possibly reflecting the possibility of reaching a cap early in a 2-year window which keeps the fishery closed for nearly 2-years
- Similar comments apply under Alternative 5, although the improvement in mean economic results is larger
- The two-year caps version of Alternative 5 shows lower mean economic outcomes with greater risk (higher standard deviation) compared to Alternative 4

Section 4.2: 30% Observer Coverage Results

- Table 24 presents the results for Alts. 4-5 of simulating the operation of the fishery under 30% observer coverage, assuming an expansion estimator of interactions is used to manage the fishery (cf. Table 22)
- Cap levels shown in corrected Table 20 were used in the analysis (labeled Table 5 in EA draft; G.2.a Supplemental NMFS Report 3)
- Mean economic performance w/30% coverage increases somewhat under Alt. 4 and significantly under Alt. 5
- Standard deviation of results (risk) also increases at 30% coverage compared to 100% coverage results
- Mean economic outcomes are lower with higher risk (StdDev) under the two-year caps version of Alternative 5 compared to Alternative 4

Section 4.2: Post-2000 Data Versus Post-1990 Data

- Rationale for extending data window back to 1990 is in the introduction to the Appendix (p. 64)
- Results are qualitatively consistent with those using post-2000 data, except pre-2001 data includes observed interactions with rare event bycatch species (e.g. green turtles) with no post-2001 observations
- Economic results based on all post-1990 data are more favorable, possibly reflecting higher inflation-adjusted revenues and variable profits in pre-2000 landings records
- Alternative 5 results again tend to show lower economic performance with higher risk (StdDev) compared to Alternative 4 results under the same scenario