



REGULATORY IMPACT REVIEW (RIR)

Rule to Implement Amendment 6 to the Fishery Management Plan for West Coast Fisheries for Highly Migratory Species: Authorization of Deep-set Buoy Gear

December 16, 2022

Introduction

A Regulatory Impact Review (RIR) must be prepared for actions that have a proposed and final rule, and actions that have a final rule only, to address requirements of Executive Order (E.O.) 12866 as amended by E.O. 13258 and E.O. 13422. This section constitutes the RIR for the implementation of Amendment 6 to the Fishery Management Plan for West Coast Fisheries for Highly Migratory Species (HMS FMP). This action would identify deep-set buoy gear (DSBG) as an authorized gear under the HMS FMP and allow the issuance of permits to fish DSBG, including both standard buoy gear (SBG) and linked buoy gear (LBG) configurations, in Federal waters off California and Oregon. DSBG fishing would be managed under a limited entry (LE) regime within the Southern California Bight (SCB), while fishing outside of the SCB would be allowed on an open access basis. The RIR provides an analysis of the potential economic benefits and costs to the fishery and the Nation as a whole resulting from the action.

The purpose of a RIR is to determine whether any of the actions could be considered “significant regulatory actions” according to E.O. 12866, to enhance planning and coordination between new and existing regulations, and to design regulations in a cost effective manner. The RIR accomplishes three goals:

- (i) Providing a comprehensive review of the level and incidence of impact associated with a regulatory action.
- (ii) Providing a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives which could be used to solve the problem.
- (iii) Ensuring that the National Marine Fisheries Services (NMFS) systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost effective way.

The Federal agency is to assess both the costs and the benefits of the action (recognizing that some costs and benefits are difficult to quantify), and then propose or adopt a regulation only after reasoned determination that the benefits of the intended regulation justify the costs.

Management Objectives of the Rule and Statement of the Problem

Motivated by attrition in the U.S. West Coast swordfish fishery and reduced harvests by U.S. West Coast vessels, as well as increased reliance on foreign supplies of swordfish to meet demand, NMFS and the Pacific Fishery Management Council (hereafter, the Council) have indicated an interest in the development of new gear types for targeting swordfish while minimizing interactions with protected species and bycatch of non-target finfish. Results of deep-set buoy gear (DSBG) trials indicate potential for this gear type to produce a profitable source of U.S.-caught swordfish with low environmental impacts. The purpose of the proposed action is to authorize the use of DSBG as an additional fishing gear in the West Coast commercial swordfish fishery that minimizes bycatch and bycatch mortality of finfish and protected species (including sea turtles, marine mammals, and seabirds) to the extent practicable while maximizing the potential for an economically viable fishery. To the extent that DSBG is economically viable, the proposed action would support a fleet of vessels with West Coast home ports that could increase the availability of locally-caught swordfish in the market.

The action to authorize DSBG as a new gear type as a component of a West Coast swordfish fishery is needed to effectively address the 10 National Standards (NS) for Conservation and Management included in the Magnuson-Stevens Fishery Conservation and Management Act (MSA), Section 301, in particular NS 1 (optimum yield) and NS 9 (minimize bycatch). DSBG could provide another fishing gear that could help satisfy the need for commercially viable options to support sustained participation in the swordfish fishery by West Coast fishing communities. In doing so, authorization of the fishery would also address NS 8 (i.e., consider the importance of fishery resources to fishing communities).

Description of the Impacted Fisheries

The provisions of this action apply to current and future HMS fishermen targeting swordfish off the U.S. West Coast. Traditionally, gear types for targeting swordfish have included harpoon, hook and line, drift gillnet (DGN), and longline gear.

Since 1985, swordfish catch by West Coast vessels has declined 96 percent, from 3,073 metric tons (mt) at a value of \$11.9 million in 1985 to 320 mt at a value of \$2.8 million in 2020. This is in large part due to attrition in the DGN fleet. The annual attrition rate in the DGN fishery has been roughly 10 percent; however, a buyout program implemented by the State of California has increased the rate of attrition in recent years. Without additional viable fishing opportunities to commercially harvest swordfish in federal waters off the U.S. West Coast, catch by West Coast-based vessels is likely to continue to decline.

Between 2015 and 2020, 84 percent of the total swordfish supply on the U.S. West Coast came from foreign imports, with 16 percent supplied from domestic sources. This gap between domestic demand and domestic supply can be attributed to a number of factors, including

attrition in the DGN fleet, the lower price of imports compared to artisanal domestic gears such as harpoon, and increased regulations for domestic fleets fishing with higher-volume gear, such as longline and DGN. Of the total swordfish supply to the West Coast by U.S. vessels, the supply from the harpoon fleet is small, accounting for less than 3 percent of the total U.S. West Coast swordfish supply from 2015 through 2020. DSBG exempted fishing permit (EFP) trials accounted for 12 percent of the total. The remainder of domestically supplied swordfish was caught by DGN and Hawaii-based longline fleets.

U.S. West Coast Deep-set Buoy Gear Trials

DSBG was first used off the U.S. West Coast in 2011 in a series of research fishing trials led by the Pflieger Institute of Environmental Research (PIER). PIER conducted the trials in consultation with the NMFS Southwest Fisheries Science Center (SWFSC). These research trials indicated that DSBG could be used to selectively target and harvest swordfish with minimal bycatch and protected species interactions. However, uncertainty remained regarding optimal gear configurations, timing of deployment, seasonality, and other factors. In 2015, NMFS issued five EFPs to PIER to further test DSBG. EFPs are revocable special-privilege permits that allow for exemptions from existing regulations.

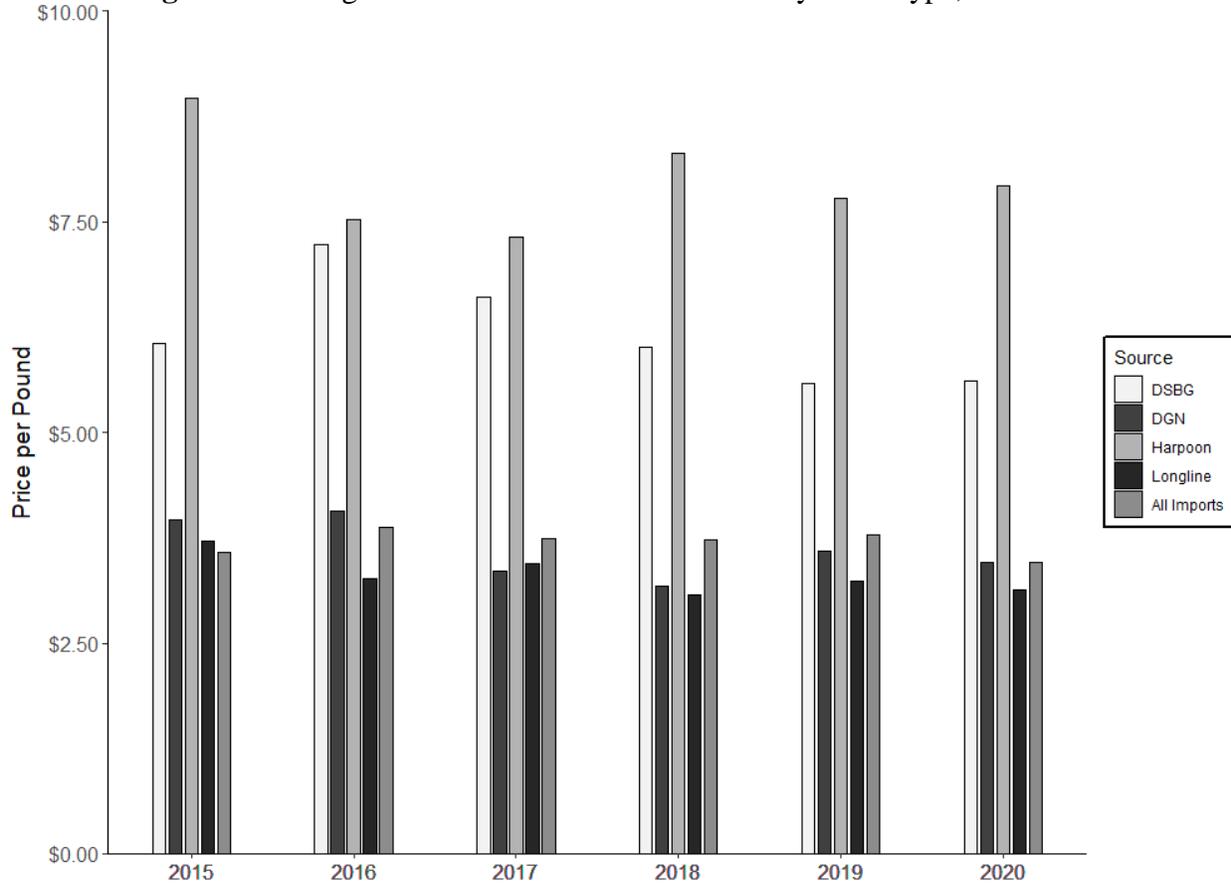
In addition to EFPs issued to PIER, NMFS also began issuing DSBG EFPs to other commercial fishermen who submit applications, subject to input from the Council. These EFPs provided exemptions from prohibitions on the use of otherwise unauthorized gear for targeting swordfish in Federal waters. In 2017, a total of five vessels fished DSBG in waters off Southern California, landing 30.18 mt of swordfish worth \$408,874. These vessels fished a “standard configuration” of DSBG, which allows for up to 10 pieces of gear with each piece including a vertical mainline suspended from a buoy with up to three gangions and hooks fished at depth. In 2018, NMFS issued 60 EFPs to fish DSBG under standard buoy gear (SBG) and linked buoy gear (LBG) configurations in the waters off California and Oregon. The “linked configuration” allows for linking up to ten otherwise independent pieces of gear together with serviceable links at depth. In 2020, 27 vessels fished DSBG under EFPs, landing 85.46 mt of swordfish worth just over \$1,000,000. Other marketable species landed in DSBG EFP trials have included escolar, opah, bigeye thresher shark, and common thresher shark.

In 2020, NMFS reduced the observer coverage requirements for DSBG EFP trials. This was necessary in order to prioritize NMFS’ observer program budget and improve observer deployment flexibility among the various fleets covered by the West Coast Region Observer Program. The 2020 - 2021 observer coverage rates were as follows:

- For new standard DSBG EFPs, 100 percent for the first 3 fishing days and then a minimum of 10 percent;
- For linked DSBG EFPs with no effort to date, 100 percent in the first year, then a minimum of 10 percent in the second year; and
- For continuing standard and linked DSBG EFPs (i.e., those that had activity in 2018 - 2019), a minimum of 10 percent of fishing days.

In EFP fishing to date, DSBG-caught swordfish has fetched a higher price (on average) than DGN and longline-caught swordfish, but lower than harpoon-caught swordfish. Figure 1 below shows the average price of swordfish from various sources for the years 2015-2020.

Figure 1. Average Price of West Coast Swordfish by Gear Type, 2015-2020



Large-Mesh DGN Fleet

The DGN fleet developed in Southern California in the 1970's to target thresher sharks, and experienced periods of rapid growth and attrition thereafter. Swordfish replaced thresher shark as the primary target species of the DGN fleet in 1981. Fishing activity is highly dependent on the seasonal migratory pattern of swordfish, resulting in over 90 percent of fishing effort occurring from August 15 to January 31 in recent years.

The DGN fishery is managed under a limited entry permit system, with mandatory gear standards and seasonal area closures implemented to address various conservation concerns. To reduce interactions with non-target fish, marine mammals, sea turtles, and sharks, regulations stipulating gear modification and area closures, such as the leatherback and loggerhead conservation areas, were implemented. In 2001, the Pacific leatherback conservation time-area closure was put in place to protect leatherback sea turtles (50 CFR 660.713.(c)(1)), and the Pacific loggerhead time-area closure (dependent on El Niño conditions) was put in place to protect loggerhead sea turtles (50 CFR 660.713(c)(2)). NMFS West Coast Region places

observers aboard DGN vessels to monitor the fishery, with observer coverage ranging from roughly 10-20 percent of trips from 2010-2020.

Annual DGN fishing effort has decreased from a high of 11,243 sets in the 1986 fishing season to 147 in the 2020 fishing season. Industry representatives attribute the decline in vessel participation and annual effort to regulations implemented to protect marine mammals and endangered sea turtles. About 150 permits were initially issued when the limited entry program was established in 1980 and peaked at 251 permits in 1986. In recent years the number of extant permits has declined to fewer than 50. Since closures were enacted to reduce interactions between the fishery and endangered sea turtles, the number of active participants in the DGN fishery has continued to decline, from 78 vessels in 2000 and to 27 in 2010. In 2018, the State of California passed legislation to develop a DGN buyout program. In 2020, there were 12 participants in the DGN fishery.

DGN landings have also decreased. Landings were highest in 1985 with 2,198 mt of swordfish and 1,000 mt of sharks. In 2009, 34 DGN vessels landed approximately 250 mt of swordfish and approximately 40 mt of common thresher shark. DGN vessels landed an average of 80 mt of swordfish annually (worth about \$638,000 on average) from 2015-2020. Common thresher shark landings by the DGN fishery averaged approximately 18 mt annually (worth about \$42,000 on average) from 2015-2020.

The tiered criteria by which the proposed action would issue DSBG LE permits prioritize DGN vessels which have actively participated in the fishery over “inactive” vessels. The criteria also prioritize issuing permits to DGN permit holders who participate in a state or federal buyout and transition program by surrendering their nets and forgoing renewal of their DGN LE permit. However, the proposed action does not require any DGN vessels to participate in a transition program, and any DGN permit holders who do not obtain a DSBG LE permit would be permitted to participate in DSBG fishing outside of the SCB on an open access basis.

Harpoon Fleet

California’s modern harpoon fleet for swordfish developed in the early 1900s. Prior to 1980, harpoon and hook-and-line were the only legal gears for commercially harvesting swordfish. At that time, harpoon gear accounted for the majority of swordfish landings in California ports. Like DSBG, harpoon is a highly selective gear type. Harpoon fishermen typically target one swordfish at a time, resulting in zero bycatch of other species.

In the early 1980s, DGN replaced harpoon as the primary gear type for catching swordfish. The number of harpoon permits subsequently decreased from a high of 1,223 in 1979 to a low of 25 in 2001. Between 2015 and 2020, an average of 16 harpoon vessels actively fished each season, landing an average of 10 mt of swordfish annually. Some vessel operators work in conjunction with a spotter airplane to increase the search area and to locate swordfish difficult to see from the vessel. This practice tends to increase the CPUE compared to vessels that do not use a spotter plane, but at a higher operating cost. Harpoon fishing takes place inside the SCB exclusively and typically from May to December, and peaking in August, depending on weather conditions and the availability of fish in coastal waters.

Hawaii and West Coast-Based Longline Fleets

The Hawaii longline fleets developed in the early 20th century. This gear is used to target swordfish and tuna, and incidentally captures other marine species. The fleets deploy deep-set and shallow-set gear and operates mainly in the Northern Central Pacific Ocean. Although fishing activity does not occur in the Proposed Action Area, swordfish caught are landed to California ports. The Hawaii longline fleets annually landed between 114.79 and 347.16 mt of swordfish to California between 2015 and 2020. The fleets typically target swordfish using shallow-set gear, and bigeye tuna using deep-set gear year round.

A small West Coast-based longline fleet, which historically included fewer than three vessels, targets tunas and other HMS outside of the West Coast EEZ using deep-set longline gear. These vessels primarily target bigeye tuna with a small percentage of other HMS taken incidentally. The high operational costs, time constraints, and safety considerations of fishing outside the EEZ will most likely continue to limit participation in this fishery. This fishery incidentally landed small amounts of swordfish to Southern California ports between 2015 and 2020.

Hook and Line Fleet

The commercial hook and line fleet primarily targets tuna, and has caught and landed swordfish in low volumes from 2015 through 2020. Surface hook-and-line trips (outside of the North Pacific albacore troll/jig fishery) brought in average annual revenues of about \$413,000 from 2015 to 2020, mostly from tuna landings. Average swordfish landings over this time period were 0.55 mt per year.

Recreational Fisheries

A large and economically important recreational and sport fishery is active in the Proposed Action area. In 2017, marine recreational anglers in California and Oregon undertook 3.7 million trips, 95 percent of which took place in California. These trips resulted in a harvest of 8.4 million individual finfish, of which 5.4 million (63 percent) were released. Albacore is a common target of U.S. West Coast recreational fisheries, primarily using rod-and-reel gear. Recreational anglers in California take the entire suite of HMS listed in the FMP, using rod-and-reel gear almost exclusively. In addition, a nominal amount of fish, primarily tunas and dolphinfish, are taken by free divers using spear guns. In Oregon, anglers only occasionally take HMS species other than albacore, including blue sharks. Approximately 11 percent of the total West Coast recreational catch came from trips that fished primarily in Federal waters of the EEZ (i.e., within the Proposed Action area), with the remainder coming from state territorial waters or inland waters. Swordfish fishing is open year-round to commercial passenger fishing vessels and private recreational boats, both of which may catch a small amount of swordfish recreationally. Recent years have seen an uptick in “deep drop” fishing, a method which is used to target swordfish during the daytime.

Description of the Proposed Action

The Proposed Action is to authorize a DSBG gear-type targeting swordfish and other highly migratory species in federal waters south of the Oregon-Washington border under the HMS FMP and pursuant to the MSA. DSBG would be identified as a legal commercial fishing gear in the HMS FMP and related regulations. Management measures would be established in the HMS

FMP and in federal regulations under the HMS FMP's management framework. These measures include observer coverage, logbook requirements, an LE permitting regime for fishing DSBG in the SCB, and terms and conditions regarding gear specifications, active tending, time and area restrictions, and other measures aimed at minimizing the environmental impact of the gear.

Alternatives Considered

The alternatives include two broad permitting regimes, termed “open access” and “limited entry” (LE). In an open access fishery, any vessel owner or operator that is able to meet basic eligibility requirements (e.g., must list a registered or documented vessel) may obtain a permit to participate in the fishery. In an LE fishery, a finite number of permits are issued based on qualifying criteria for the LE program in addition to meeting basic eligibility requirements. These two regulatory regimes form the basis for the two action alternatives examined in this document. Key aspects of establishing an LE regime is determining the size of the program and specifying qualifying criteria. These aspects are discussed as sub-options in this document.

Alternative 1 - No Action

DSBG would not be authorized as a legal gear under the HMS FMP. It is also possible that the Council or NMFS or both determine that EFPs should not be renewed when they expire, and that new EFPs should not be granted. Alternatively, the Council could continue to recommend that NMFS issue EFPs if DSBG is not authorized as a legal gear, in which case issuance and monitoring of EFPs would likely continue for EFPs described below and those for which the Council may recommend be issued in the future. To-date the Council has been reviewing and making recommendations on EFPs on an annual basis.

Fifteen linked and 35 standard Deep-Set Buoy Gear (DSBG) EFPs are currently issued through December 31, 2022, with approximately three to five standard DSBG and one additional linked DSBG EFP from June 2021 Council recommendations to be potentially issued when and if final qualifications are met. In June 2022, the Council recommended an additional 7 standard and 2 linked DSBG EFPs be considered by NMFS for issuance. The Council is also expected to make recommendations on other EFP applications that propose using additional pieces of gear and hooks for both standard and linked DSBG configurations. A single EFP was renewed for 2022 - 2023 to fish DSBG during the hours of sunset to sunrise (i.e. night-set buoy gear or NSBG).

Alternative 2 – Authorize an Open Access Fishery

Under this alternative, the fishery would be authorized with the following management measures.

Gear Description

DSBG refers to the overarching gear type that is actively tended in its multiple configurations. The umbrella of DSBG includes standard buoy gear (SBG) and linked buoy gear (LBG). Both of these gear types would be authorized initially.

Standard Buoy Gear (SBG) - An individual piece of SBG consists of a vertical monofilament mainline suspended from a buoy-array with a terminal weight. Up to three gangions with hooks may be attached to the mainline at a minimum depth of 90 meters. No more than 10 individual pieces of SBG may be deployed at any one time.

Linked Buoy Gear (LBG) - An individual piece (section) of LBG consists of a monofilament mainline which extends vertically from a buoy-array (either directly or from a minimum 50 foot poly-line extender) to a weight; then horizontally to a second weight; then vertically to a minimum 50 foot poly-line extender attached to a second buoy-array. Up to three gangions with hooks may be connected to each horizontal section of the mainline, all of which must be fished below 90 meters. The pieces may be linked together by the mainline, which is serviceable between each piece of LBG and must be suspended between links below a depth of 50 feet. No more than 10 sections of LBG may be deployed at any one time, with no more than 3 hooks per section.

Both DSBG configurations (SBG and LBG) must meet the following specifications:

- 1) Buoy-array: The surface buoy flotation and strike detection array consists of a minimum of three buoys (a minimum 45 lbs buoyancy non-compressible hard ball, a minimum 6 lbs buoyancy buoy, and a strike detection buoy) with no more than 6 feet of line between adjacent buoys all connected in-line by a minimum of $\frac{3}{8}$ inch diameter line. Use of buoy tether attachments (e.g., non-streamlined gear with loops and/or dangling components) is prohibited. SBG and terminal LBG buoy-arrays must include a locator flag, a radar reflector, and vessel/fisher identification compliant with all current state requirements and regulations.
- 2) Weights must be a minimum of 3.6 kg.
- 3) Lines connecting surface buoys must be at least $\frac{3}{8}$ " diameter.
- 4) Minimum size 16/0 circle hooks with not more than 10 degrees offset.
- 5) No more than ten pieces of SBG or LBG may be deployed at one time, with no more than three hooks per piece.

Gear Tending

All pieces of gear must remain within 5 nm of each other, and the vessel may be no more than 3 nm from the nearest piece of gear. These requirements allow for active tending, which is a key feature of this gear type.

Gear Deployment/Retrieval Timing

Gear may not be deployed prior to local sunrise and must be onboard the vessel no later than 3 hours after local sunset.

Use of Multiple Gears on a Single Trip

Gear types other than DSBG may be used on the same trip when DSBG is used, as long as the requirement to actively tend DSBG is met. This requirement will limit the gears with which fishermen could concurrently fish with DSBG and maintain maneuverability to allow for active tending of DSBG and/or staying within the active tending boundary. Other gears could be set and

retrieved on the way out to and returning from sea, and DSBG fished in between, potentially at a large distance from other gear.

All landings must be tagged or marked to identify the gear used. This would facilitate properly attributing catch to the gear type used on a trip. Additional requirements may be necessary so that catch can be accurately recorded by gear configuration on the fish ticket/landings receipt. Any such identification would distinguish between fish caught with SBG versus LBG, as is required on landing receipts.

Permitting

New gear endorsements would be added to the existing Federal General HMS permit for both SBG and LBG (see gear definitions in section 1.2.1).

Geographic Area

The fishery would be authorized in all Federal waters offshore California and Oregon.

Fishery Timing

This fishery may operate throughout the year.

Species Retention

All species may be retained and landed unless prohibited by other law(s) or regulation(s).

Fishery Monitoring

Existing HMS FMP regulations governing observer coverage (50 CFR 660.719) establish a requirement that any HMS-permitted vessel must accommodate a NMFS certified observer when required by the agency. The level of observer coverage is determined by the agency.

HMS FMP regulations also require logbooks (50 CFR 660.708). NMFS, in consultation with the Council, would need to determine how to implement logbook and data submission requirements for the DSBG fishery.

Alternative 3 (Preferred) – Authorize a Limited Entry Fishery

This alternative would include all the specifications and monitoring requirements described above for Alternative 2 (including observer coverage and logbooks), and would in addition implement an LE permit, which would be required to fish DSBG in Federal waters east of 120° 28' 18" W. longitude (i.e., the SCB). Outside the SCB, fishing with DSBG would be allowed under the open access regime described above in Alternative 2. The below parameters would apply to all LE permits.

Permit Possession

The HMS LE DSBG permit would be held by a person, as defined at 50 CFR 660.702, who must designate a vessel on the permit. The designated vessel need not be owned by the permit holder. The permit holder may change the vessel designation on the permit by written request to NMFS no more than one time per calendar year unless an extraordinary event renders the assigned vessel incapable of operation. The vessel owner must also hold a General HMS permit. A person

may only hold one DSBG LE permit. Multiple DSBG LE permits may designate the same vessel, but only one permit (10 pieces of gear) may be fished from any one vessel at a time. The permit holder would not be required to be onboard the vessel when DSBG is in use.

Permit Renewal

The HMS LE DSBG permit would be valid for one year and expire if not renewed. Such permits would revert to NMFS and, as long as an LE program is still in place, would be made available for reissuance.

Permit Transfer

HMS LE DSBG permits would not be transferable when the fishery is initially authorized, except upon death or legal incapacitation. The Council may take action at some point after the fishery is authorized and the Council determines that transfer would benefit management. The Council may consider allowing permit transfers, and any related conditions, through the biennial management process.

Permit Issuance

NMFS would issue up to 50 permits in the first year, with up to 25 permits issued annually in subsequent years until a maximum of 300 permits are issued. However, it is possible that the Council or NMFS or both could adjust the maximum number of permits to be issued through a future federal action. For example, if NMFS determines that less than 300 are necessary to ensure compliance with the Endangered Species Act and Marine Mammal Protection Act, or if the Council recommends to NMFS that less than 300 permits are necessary to meet stakeholder needs.

Limited Entry Permit Qualifying Criteria

Consistent with the Council's FPA, the proposed action includes an ordered ranking of who might qualify for LE permits as they become available. These qualification criteria prioritize swordfish fishing experience through DSBG EFPs, DGN, and other gears. Applicants would be assessed and ranked in a one-time process by the NMFS West Coast Region Permits and Monitoring Branch, to optimize the administrative effort required to manage the permitting regime. Once rankings are specified, applicants would be informed of their qualification tier and the year in which they can expect to receive a permit upon completing the application process.

The permits would be issued to applicants in a tiered priority list based on the following criteria:

1. EFP holders, with at least 10 documented calendar days of DSBG fishing effort by December 31, 2018.
2. California Drift Gillnet Shark and Swordfish permit holders who made at least one large-mesh DGN swordfish landing between the 2013-2014 and 2017-2018 fishing seasons, and who surrender their state or federal DGN permit as part of a DGN permit trade-in or buy-back program.
3. EFP holders approved by the Council prior to April 1, 2021, who conducted at least 10 calendar days of DSBG fishing effort or with 10 days of DSBG effort on their vessel or

by vessels they manage under the EFP by the effective date of the Final Rule authorizing DSBG.

4. California General Swordfish permit holders who possessed a permit during the 2018-2019 fishing season and made at least one swordfish landing using harpoon gear between the 2013-2014 and 2017-2018 fishing seasons.
5. California Drift Gillnet Shark and Swordfish permit holders who have made at least one large-mesh DGN swordfish landing between the 2013-2014 and 2017-2018 fishing seasons, and who did not surrender their state or federal DGN permit as part of a trade-in or buy-back program.
6. California Drift Gillnet Shark and Swordfish permit holders who have not made a swordfish landing with large-mesh DGN gear since March 31, 2013, and who surrender their state or federal DGN permit as part of a permit trade-in or buy-back program.
7. State or Federal DGN LE permit holders who have not made a swordfish landing with DGN gear since March 31, 2013, and did not surrender their DGN LE permit as part of a state or Federal DGN permit trade-in or buy-back program.
8. Any individual with documented commercial swordfish fishing experience between January 1, 1986, and the effective date of the Final Rule on a first come first served basis.
9. Any individual on a first come first served basis.

Economic Analysis of the Expected Effects of the Proposed Action Relative to “No Action”

The focus of the RIR is on the incremental changes in net economic benefits or any economic impacts expected from the proposed alternatives relative to the status quo or no action alternative. The proposed action is expected to primarily affect fisheries in or near the proposed action area, as well as fishermen and fishing communities. It is also expected to provide some downstream economic benefits to processors, restaurants, and consumers by allowing an additional gear type for domestic fishermen to target an underutilized swordfish stock.

Alternative 1 – No Action

Under the No Action alternative, fisheries in or near the Proposed Action Area would continue to operate under status quo conditions. It is unlikely that levels of permit issuance and annual DSBG fishing effort under EFP fishing would approach the levels expected under an authorized fishery. U.S. West Coast swordfish fishermen who do not obtain DSBG EFPs may continue to fish other gear (e.g., harpoon or DGN) under their federal permits inside the EEZ, and fish longline outside of the EEZ under existing regulations. The Council may recommend that NMFS issue additional DSBG EFPs in the absence of authorization. However, given the greater administrative burden of acquiring an EFP, fewer DSBG fishing trips may be made under EFPs than DSBG permits authorized on an ongoing basis. Additionally, if EFPs were no longer authorized, there would be a discontinuation of fishing with DSBG. For these reasons, fewer opportunities for targeting and landing swordfish using DSBG are expected in comparison to an authorized fishery. The majority of swordfish supply to the U.S. West Coast would continue to come from other distant-water HMS fleets and foreign imports. Processors, restaurants, or consumers are likely to continue to rely on foreign imports rather than locally-caught swordfish to meet demands.

Alternative 2 – Authorize an Open Access Fishery

The economic effects of the proposed action are considered in three categories: impacts to other fleets or fisheries in the proposed action area, impacts to fishermen and fishing communities, and downstream impacts to processors, restaurants, and consumers.

As part of a National Environmental Policy Act (NEPA) analysis for this action, NMFS conducted an analysis of DSBG price to estimate the influence of several factors on the price per pound of DSBG caught swordfish. Factors thought to influence DSBG price include landings (in pounds) of DSBG-caught swordfish; the volume of swordfish landings by DGN, harpoon, and longline fisheries; the volume of fresh swordfish imports to Southern California port regions, and landings of potential substitute species including yellowfin tuna and dolphinfish. The analysis also controls for variation in DSBG price from month to month, and from year to year.

Based on this analysis, we estimate a weak negative price effect of increased DSBG landings, when holding all other factors constant. Our analysis indicates that increasing DSBG landings by one percent results in a drop in DSBG price of 0.04 percent. See Appendix B of our Draft Environmental Impact Statement for detail on the data, methods, results, and interpretations of the price analysis.

Between 2018 and 2020, 3,061 DSBG-caught swordfish were recorded, and a total landed weight of 204.07 mt was delivered to California ports. The average weight of a DSBG-caught swordfish was 0.07 mt. Based on the results of our Bayesian biological analysis (see Section 4.3.1 of our Draft Environmental Impact Statement), DSBG swordfish catch in a given calendar year would increase to an ongoing annual mean of 8,812 swordfish under Alternative 2. Assuming that the average weight of a DSBG-caught swordfish is constant, we project an ongoing annual mean of 587.48 mt in landed swordfish weight under Alternative 2.

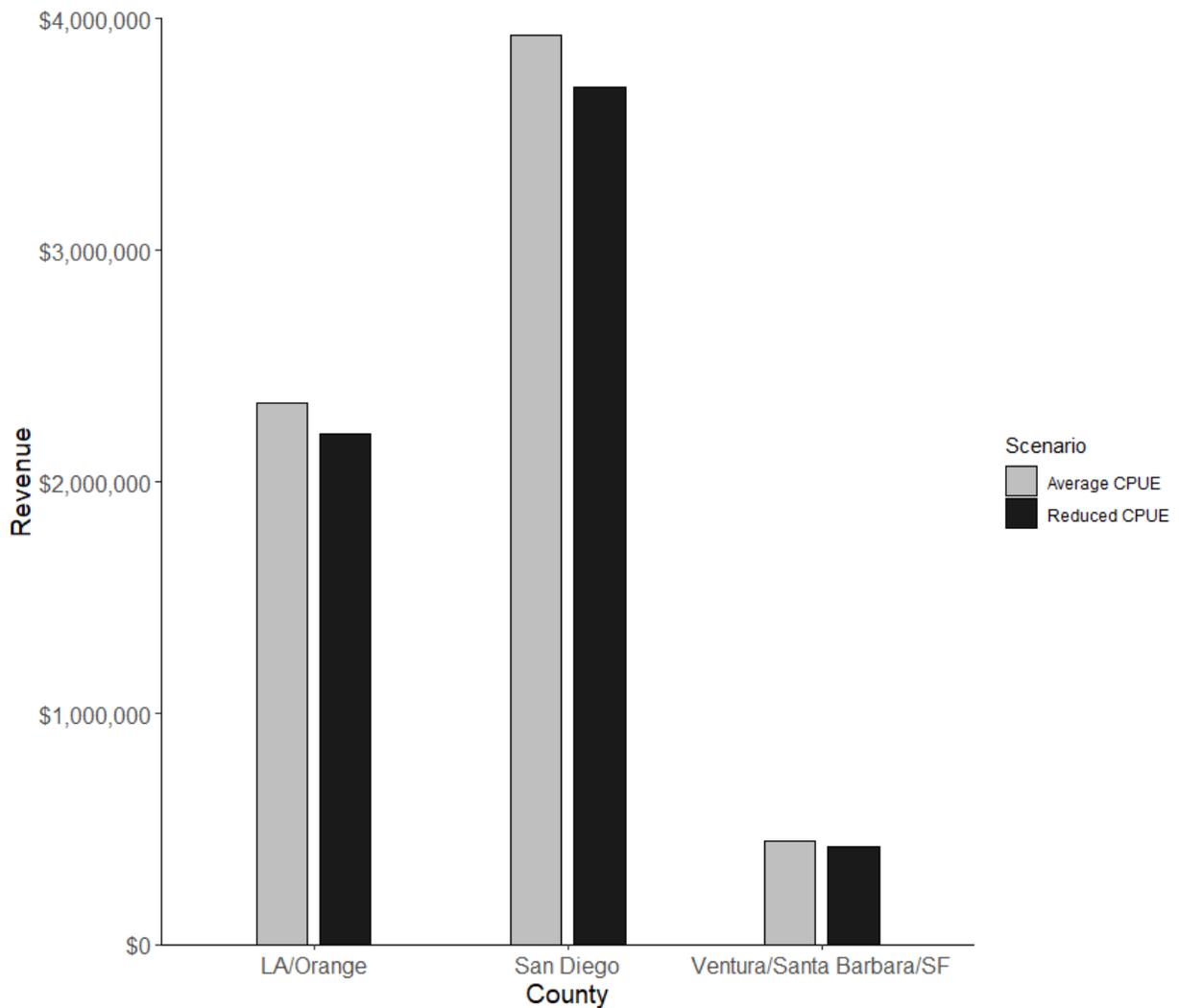
Based on the estimated price effect, and on the projected landings estimated using the biological analysis, we calculate an estimated average annual price of \$5.18 per pound, which is \$0.47 lower than the average price from 2018 through 2020.

Note that this estimate is dependent on the effort assumptions of the biological analysis (i.e., the ratio of active to inactive DSBG permits, and the average days fished per active permit) holding constant under the Proposed Action. It also relies on the assumption that DSBG swordfish CPUE (and, therefore, landings) scale proportionally with effort. If actual DSBG effort under the proposed action is less than projected (including assumptions based on effort levels in 2018 through 2020), or if CPUE declines with increasing fishing effort, annual landings would be less than predicted by the biological analysis, and DSBG swordfish price would be higher than the above estimate.¹

¹ Based on very limited data, CPUE did in fact decline with increased effort when the Council authorized a higher number of EFPs. From 2017 to 2018, effort increased from 324 days fished to 616 days fished, while swordfish CPUE declined from 1.71 individual fish per day to 1.03 individual fish per day, representing a “CPUE elasticity” of -0.43%. However, in 2019, total effort was somewhat greater than 2018 (764 days fished) and CPUE rose to 1.46 swordfish per day. In 2020, effort increased to 1,076 days fished with a CPUE of 1.19 swordfish per day. Overall it is unclear how CPUE scales with effort given the limited effort and data in DSBG fishing to date. See: https://media.fisheries.noaa.gov/2021-08/DraftEIS_Authorization-DeepSetBuoyGear.pdf

At the regional level, we estimate revenues under Alternative 2 by distributing projected DSBG swordfish landings under the Proposed Action (587.48 mt) to three regions in the same proportions seen from 2018 through 2020, and multiplying by the estimated average price per pound (\$5.18) to arrive at average annual revenues. Figure 2 below displays the results of these projections in two scenarios, one in which DSBG swordfish CPUE remains the same as the average from 2015 through 2020, and one where CPUE is the same as the average from 2018 through 2020 only (i.e., the seasons with comparatively high levels of effort which may more accurately reflect the characteristics of an authorized fishery).

Figure 2. Projected Revenues under Open Access Alternative (Two CPUE Scenarios)



Other fisheries or fleets operating in or near the Proposed Action Area which may be impacted by the authorization of DSBG include other U.S. domestic swordfish fleets with landings to Southern California ports (the California-based harpoon and DGN fleets, and the Hawaii and West Coast-based longline fleets), as well as the Southern California recreational fishing fleets.

Note that because there has been no DSBG fishing to date in either Northern California or Oregon, we do not have data for these regions. Approximately 99 percent of DSBG effort to date has occurred within the SCB, so data on “open access” fishing outside of the SCB are sparse. Due to weather conditions, familiarity with the gear, proximity to home ports, the migratory patterns and distribution of the Western Central North Pacific Ocean swordfish stock, and other factors, it can be reasonably expected that the majority of DSBG effort is likely to concentrate within the LE permitting area of the SCB, unless these trends shift radically or other unexpected changes to the natural and socioeconomic environment occur.

DSBG-caught swordfish are a close substitute for swordfish caught by other domestic fisheries. Therefore, the predicted decrease in the price received for DSBG-caught swordfish under alternatives with significant predicted increases in swordfish landings may negatively impact the revenues generated by other fleets or fisheries with landings to the same ports. The negative price effect may be more pronounced on harpoon-caught swordfish, which is a close substitute for high-quality fresh DSBG-caught swordfish due to the way it is caught and the limited time between catching and landing the fish.

Depending on how DSBG effort distributes spatially over the Proposed Action Area at larger scales of operation, there is a potential for overlap with fishing areas of recreational fleets. The distribution of effort for a larger-scale of DSBG operations is uncertain given that the DSBG EFP trials have thus far only operated at small-scale. Any economic impact of DSBG operation on recreational fishing in the Proposed Action Area is anticipated to be negative but minimal, due to limited spatial overlap between locations where recreational fleets operate and areas currently shown to be favorable for DSBG fishing for swordfish.

Authorizing a DSBG fishery is anticipated to have positive impacts on processors, restaurants, and consumers in the Proposed Action Area due to increased availability of locally-sourced, high-quality fresh swordfish. Processors will benefit from the increased landings projected under Alternative 2, by acquiring an additional source of high-quality swordfish to process, package, and sell to retail outlets and restaurants. Restaurants will benefit due to the increased availability of high-quality raw swordfish as a principal ingredient in high-value seafood entrées. Consumers will benefit due to the availability of an additional source of fresh swordfish, whether for purchase at a retail outlet to support home meal preparation, or as an entrée selection at a restaurant. To the extent that fishermen are able to profitably catch and land DSBG-caught swordfish, the additional supply will generate positive economic benefits at all stages of the supply chain, including producer surplus for processors and restaurants, and consumer surplus for retail shoppers and restaurant diners.

Alternative 3 – Authorize a Limited Entry Fishery

Applying the price effect calculated in our price analysis (see Appendix B of the Draft Environmental Impact Statement for this action), we estimate the impact on DSBG price of authorizing an LE fishery under Alternative 3, on an ongoing annual basis (i.e., the effect each year once the maximum number of LE permits are issued). Based on the results of our biological analysis, DSBG swordfish catch in a given calendar year would increase to an ongoing annual mean of 5,286 swordfish under Alternative 3. Assuming that the average weight of a DSBG-

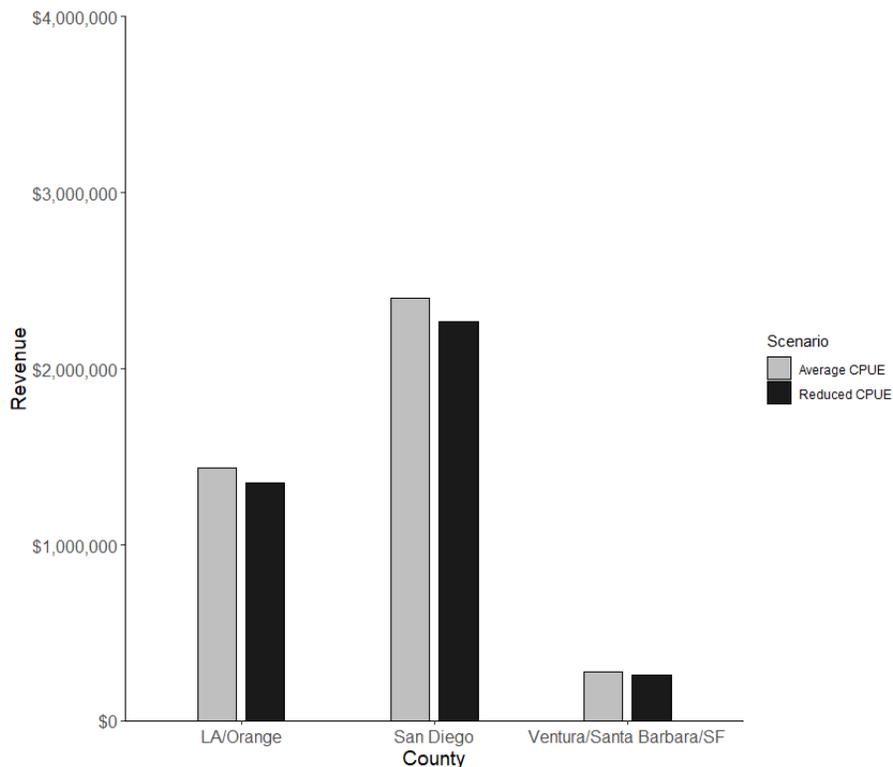
caught swordfish is constant, we project an ongoing annual mean of 352.41 mt in landed swordfish weight under the Proposed Action.

Based on the estimated price effect, and on the projected landings estimated using the biological analysis, we calculate an estimated average annual price of \$5.28 per pound, which is \$0.36 lower than the average price from 2018 through 2020.

This estimate is dependent on the effort assumptions of the biological analysis (i.e., the ratio of active to inactive DSBG permits, and the average days fished per active permit) holding constant under the Proposed Action. It also relies on the assumption that DSBG swordfish CPUE (and, therefore, landings) scale proportionally with effort. If actual DSBG effort under the Proposed Action is less than that projected by assumptions based levels from 2018 through 2020, or if CPUE declines with increasing fishing effort, annual landings would be less than that predicted by the biological analysis, and the overall effect on average DSBG price would be mitigated.

At the regional level, we estimate revenues under Alternative 3 by distributing projected DSBG swordfish landings under the Proposed Action (352.41 mt) to three port regions, in the same proportions seen from 2018 through 2020, and multiplying by the estimated average price per pound (\$5.28) to arrive at average annual revenues. displays the results of these projections in two scenarios, one in which DSBG swordfish CPUE remains the same as the average from 2015 through 2020, and one where CPUE is the same as the average from 2018 through 2020 only (i.e., the seasons with comparatively high levels of effort which may more accurately reflect the characteristics of an authorized fishery).

Figure 3. Projected Revenues under Limited Entry Alternative (Two CPUE Scenarios)



Overall, the added economic opportunity of the proposed action is expected to be lower under Alternative 3 than Alternative 2. However, we consider Alternative 3 our preferred alternative because it was recommended by the Council, and because an LE regime serves as a precaution against overcrowding or declining economic viability. Furthermore, because DSBG is a new gear type on the West Coast with limited data for analyzing its overall impacts, the phased-in approach afforded by the LE regime allows for early intervention or changes to regulations if deemed necessary by NMFS or the Council.

Impacts to other fisheries in or near the Proposed Action Area under Alternative 3 are expected to be similar to those described for Alternative 2. The lower amount of maximum effort under Alternative 3 may mitigate potential negative impacts to other fisheries.

Actual revenues occurring under the action alternatives will vary based on factors such as changes in where fishermen choose to land swordfish, seasonal cycles of swordfish availability, weather and sea conditions, the economic viability of DSBG fishing, and other factors. Therefore, our projections based on inferences from data gathered during DSBG EFP trials may not accurately represent the eventual operating characteristics of a full-scale DSBG fleet. However, it is likely that the action alternatives will result in some net increase in DSBG revenues to all three port regions analyzed, despite the negative price effect of increased landings.

In conclusion, we determine that the proposed action offers more fishing opportunities, which may increase the potential for an economically viable West Coast-based swordfish fishery than the “no action” alternative. Both action alternatives under the proposed action will provide new economic opportunities to West Coast fishermen as well as processors, restaurants, and consumers. The action does not preclude or amend regulations to any existing fishing activities. The economic effects of the action are expected to be positive to the affected individuals, businesses, and communities in the proposed action area and to the Nation as a whole. In addition, our NEPA analysis (see Appendix A of the [Draft Environmental Impact Statement](#) for this action) indicates that DSBG fishing has minimal effects on protected species and non-target fish species. The management measures outlined in the proposed regulations, in particular the phased-in LE permitting under Alternative 3, provide an opportunity to monitor and address any negative biological impacts which may occur as well as any potential socioeconomic issues such as spatial crowding of productive swordfish fishing areas.

Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any federal action involves the expenditure of public and private resources that can be expressed as costs associated with the regulation. Direct costs associated with this action may include communications materials, public outreach, funding of observers and other monitoring, labor hours for managing the permitting regime, and potentially additional law enforcement. The costs associated with the administration of this proposed action will be considered as part of NMFS’ and NOAA’s annual budgetary process.

The proposed action authorizes the use of an additional gear type for targeting swordfish under the HMS FMP. It does not preclude the use of other authorized gears or make changes to existing regulations of other fisheries or fleets in the proposed action area. The action is intended to provide additional economic opportunity to fishermen in a U.S. West Coast swordfish fishery while minimizing the environmental impacts. Therefore no direct private costs of the regulations are expected aside from the optional costs of obtaining a DSBG permit and gear in order to prosecute the fishery.

Determination of Significant Regulatory Action

To meet the requirements of Executive Order 12866 (E.O. 12866), NMFS requires that a RIR be prepared for all regulatory actions that are of public interest. This review provides an overview of the problem, policy objectives, and anticipated impacts of the action, and ensures that management alternatives are systematically and comprehensively evaluated such that the public welfare can be enhanced in the most efficient and cost-effective way.

Pursuant to E.O. 12866, a regulation is considered a “significant regulatory action” when it:

- i) has an annual effect on the economy of \$100 million or more or adversely affects in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local or tribal governments or communities;
- ii) creates a serious inconsistency or otherwise interferes with an action taken or planned by another agency;
- iii) materially alters the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- iv) raises novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in E.O. 12866.

The impacts of this rule are too minimal to be significant under E.O. 12866, as described below. In accordance with E.O. 12866, the following is set forth: (1) This action is not likely to have an annual effect on the economy of \$100 million or more or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) This action is not likely to create any serious inconsistencies or otherwise interfere with any action taken or planned by another agency; (3) This action is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; and, (4) This action is not likely to raise novel or policy issues arising out of legal mandates, or the principles set forth in the Executive Order.

The key elements of an RIR have been thoroughly addressed in this analysis. Because the proposed action will not meet any of the conditions listed above, it is determined that the proposed action, if implemented, would not constitute a “significant regulatory action” under E.O. 12866. The proposed action will not have a cumulative effect on the economy of \$100 million or more, nor will it result in a major increase in costs to consumers, industries, governmental agencies, or geographical regions. No significant adverse impacts are anticipated

on competition, employment, investments, productivity, innovation, or competitiveness of U.S.-based enterprises.

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