

Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Section 7(a)(2) “Not Likely to Adversely Affect” Determination

Continuing Operation of the Pacific Coast Groundfish Fishery

PCTS Number: NWR-2012-876

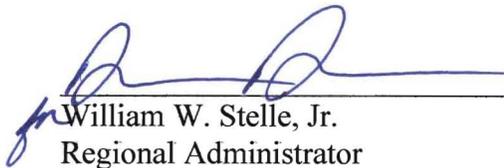
Action Agency: National Marine Fisheries Service

Affected Species and Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species or Critical Habitat?	Is Action Likely To Jeopardize the Species?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
Green Sturgeon (<i>Acipenser medirostris</i>)	Threatened	Yes	No	No
Eulachon (<i>Thaleichthys pacificus</i>)	Threatened	Yes	No	No
Humpback whales (<i>Megaptera novaeangliae</i>)	Endangered	Yes	No	N/A
Steller sea lions (<i>Eumetopias jubatus</i>)	Threatened	Yes	No	No
Leatherback sea turtles (<i>Dermochelys coriacea</i>)	Endangered	Yes	No	No

Consultation Conducted By: National Marine Fisheries Service, Northwest Region

Issued By:



William W. Stelle, Jr.
Regional Administrator

Date:

December 7, 2012

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2.8. Incidental Take Statement

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined by regulation to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. For this consultation, we interpret “harass” to mean an intentional or negligent action that has the potential to injure an animal or disrupt its normal behaviors to a point where

such behaviors are abandoned or significantly altered⁷. Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA, if that action is performed in compliance with the terms and conditions of this incidental take statement.

We issue a provisional take statement for humpback whales. This take statement will go into effect when the provisions of MMPA 101(a)(5) have been met, as described below. For Steller sea lions, the provisions of MMPA 101(a)(5) have been met, and therefore, the take statement for Steller sea lions is valid.

A marine mammal species or population stock that is listed as threatened or endangered under the ESA is, by definition, also considered depleted under the MMPA. The ESA allows taking of threatened and endangered marine mammals only if authorized by section 101(a)(5) of the MMPA. Before incidental take of listed marine mammals may be exempted from the taking prohibition of ESA section 9(a), incidental taking must be authorized under section 101(a)(5)(E) of the MMPA. The decision of whether incidental taking is authorized under section 101(a)(5)(E) of the MMPA is based on the negligible impact determination (NID) and publication in the Federal Register of a list of those fisheries for which such a determination was made. If the fishery is identified as Category I or II per the provisions of section 118, issuance of an MMPA permit is also required. Consistent with the provisions of section 101(a)(5)(E)(ii), issuance of an MMPA permit is not required for Category III fisheries. Per the first tier of fishery classification criteria under section 118⁸, all U.S. fisheries are Category III with respect to eastern stock Steller sea lions, because the total annual mortality and serious injury of eastern stock Steller sea lions, across all fisheries, is less than or equal to 10 percent of the PBR level of the stock (as summarized in Section 2.4, Effects of the Action on Species and Designated Critical Habitat). Therefore, for the purposes of issuing an incidental take statement for eastern Steller sea lions, a permit is not required; however, an NID and a publication in the Federal Register identifying that the determination applies to the PCGF fishery is required.

NMFS recently made an NID finding for eastern stock Steller sea lions, and concluded that the minimum estimated serious injury and mortality rate for the stock because of all commercial fisheries, combined with total human-related mortality, is less than 10 percent of the stock's PBR and will therefore have a negligible impact on the stock (NMFS 2010c). This NID finding is also applicable to the PCGF, and NMFS published a list of authorized fisheries in the Federal Register (77 Fed. Reg. 11493, February 27, 2012).

⁷ NMFS has not adopted a regulatory definition of harassment under the ESA. The World English Dictionary defines harass as "to trouble, torment, or confuse by continual persistent attacks, questions, etc." The U.S. Fish and Wildlife Service defines "harass" in its regulations as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). The interpretation we adopt in this consultation is consistent with our understanding of the dictionary definition of harass and is consistent with the Service's interpretation of the term.

⁸ The fishery classification criteria is a two-tiered stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock, and then addresses the impact of individual fisheries on each stock. Per the first tier, if the total annual mortality and serious injury of a marine mammal stock, across all fisheries, is less than or equal to 10 percent of the PBR level of the stock, all fisheries interacting with the stock would be placed in Category III, at least as related to that particular marine mammal stock. If this tier is not met, fisheries are subject to the next tier to determine classification.

Per the second tier of fishery classification criteria under section 118⁹, the WA/OR/CA sablefish pot fishery is Category II with respect to the CA/OR/WA stock of humpback whales, because the total annual mortality and serious injury of this stock, across all fisheries, is more than 10 percent of the PBR level of the stock (and therefore does not qualify for Category III) and annual mortality and serious injury of the stock in this specific fishery—WA/OR/CA sablefish pot—is less than 50 percent of the PBR level of the stock. Therefore, for the purposes of issuing an incidental take statement for humpback whales, a permit is required in addition to an NID and a publication in the Federal Register identifying that the determination applies to this specific fishery. After which time, the below incidental take statement for humpback whales will be valid.

NMFS' draft NID finding for CA/OR/WA humpback whales concluded that the minimum estimated serious injury and mortality rate for the stock because of all commercial fisheries, combined with total human-related mortality, would not cause more than a 10 percent delay in time to recovery and will therefore have a negligible impact on the stock (NMFS in review). This draft NID finding is applicable for all West Coast fisheries, including the PCGF, and following issuance, NMFS will publish a list of authorized fisheries in the Federal Register including those of the WCGF. NMFS has not yet promulgated an ESA section 4(d) rule prohibiting take of threatened eulachon. The Court of Appeals for the Ninth Circuit recently ruled that the ESA requires an incidental take statement even when take is not prohibited (Center for Biological Diversity, et al. v. Salazar, et al., 2012 WL 3570667 (9th Cir. 2012)). We have therefore included an incidental take statement for eulachon. In the event we subsequently adopt a rule prohibiting take of eulachon, the elements of this ITS that relate to eulachon would take effect on the effective date of that rule.

2.8.1 Amount or Extent of Take

2.8.1.1 Eulachon

We anticipate that the take of threatened southern DPS eulachon will occur as a result of the proposed continued operation of the PCGF. Incidental take of southern DPS eulachon occurs as a result of bycatch and handling in the fisheries, or mortalities resulting from encounter with fishing gear, as a consequence of fishing activity. Take of eulachon in the proposed action is expected to not exceed 1,004 fish per year. This take is expected to occur in the LE groundfish bottom trawl and at-sea hake fisheries.

2.8.1.2 Green Sturgeon

We anticipate that the take of threatened Southern DPS green sturgeon will occur as a result of the continued operation of the Pacific Coast groundfish fishery. Incidental take of Southern DPS green sturgeon is expected to occur as a result of incidental capture and handling in the fishery,

⁹ Tier 2, Category I: Annual mortality and serious injury of a stock in a given fishery is greater than or equal to 50 percent of the PBR level (i.e., frequent incidental mortality and serious injuries of marine mammals).

Tier 2, Category II: Annual mortality and serious injury of a stock in a given fishery is greater than 1 percent and less than 50 percent of the PBR level (i.e., occasional incidental mortality and serious injuries of marine mammals).

Tier 2, Category III: Annual mortality and serious injury of a stock in a given fishery is less than or equal to 1 percent of the PBR level (i.e., a remote likelihood or no known incidental mortality and serious injuries of marine mammals).

mortalities resulting from encounter with fishing gear and/or removal of captured fish from the water, and handling by the NMFS observer program. We expect incidental take of both adult and subadult Southern DPS green sturgeon. Under the proposed action, incidental take of Southern DPS green sturgeon because of bycatch and handling in the fishery is not expected to exceed 28 fish per year; however, we recognize the potential for incidental take of greater numbers of Southern DPS green sturgeon in some years. Therefore, this take statement allows for incidental take of up to 86 Southern DPS green sturgeon per year in no more than 2 years within a period of 9 consecutive years. Lethal take of Southern DPS green sturgeon because of bycatch and handling in the fishery is not expected to exceed 2 fish per year. However, recognizing the potential for lethal take of greater numbers of Southern DPS green sturgeon in some years, this take statement allows for lethal take of up to 7 Southern DPS green sturgeon per year in no more than 2 years within a period of 9 consecutive years. Lethal takes are expected to be immediate mortalities or delayed mortalities after release of the fish back into the water.

Under the proposed action, incidental take of Southern DPS green sturgeon by the NMFS Observer Program when observing and handling fish encountered in the fishery is not to exceed 375 Southern DPS green sturgeon per year. We do not expect handling of fish by the observer programs to result in lethal take of Southern DPS green sturgeon. Although green sturgeon handled by the observers may be dead when observed or may die after being released, we attribute the cause of death to the effects of bycatch and handling in the fishery rather than to handling by the observers.

2.8.1.3 Humpback Whales

We anticipate that take of humpback whales will occur as a result of the proposed continued operation of the PCGF. Incidental take of humpback whales occurs as a result of entanglement with fishing gear, as a consequence of fishing activity. This take is expected to occur in the sablefish pot/trap fishery. In the effects section, we estimated an average of 1 humpback whale per year entangled by proposed fishing, with a maximum of 3 humpback whales entangled in a single year. Therefore, the incidental take limit for humpback whales is a 5-year average of 1 humpback whale injury or mortality per year, and up to 3 humpback whale injuries or mortalities in any single year. Available data on takes will be reviewed periodically by a Pacific Coast Groundfish and Endangered Species Workgroup as described under Reasonable and Prudent Measures and Terms and Conditions below. In addition to these take limits, we will evaluate total human-caused serious injury and mortality of humpback whales annually, and if PBR is exceeded, we will determine whether the MMPA 101(a)(5)(E) permit and humpback whale ITS are still valid. Consistent with the analysis in this biological opinion, a portion of unidentified whale and gear entanglements would be counted against these take limits and for this PBR evaluation in addition to known humpback whale entanglements in gear of the proposed fishery (pro-rating criteria and methods described in Section 2.3.3 or as adjusted by the Workgroup). Data used to pro-rate unidentified whale and gear entanglements will be updated each year. These criteria and methods are conservative in light of uncertainty about proposed fishery impacts on humpback whales, because of the opportunistic nature of entanglement observation and reporting, potential for unobserved injury or mortality because of entanglements, and difficulty identifying entangled whales to species and entangling gear to specific fisheries.

2.8.1.4 Steller Sea Lions

We anticipate that the take of Steller sea lions will occur as a result of the proposed continued operation of the PCGF. Incidental take of Steller sea lions occurs as a result of entanglement with fishing gear as a consequence of fishing activity. This take is expected to occur in LE trawl and at-sea hake fisheries. In the effects section, we estimated an average of 14 Steller sea lions per year bycaught in proposed fishing, with a maximum of 45 Steller sea lions bycaught in a single year. Therefore, the incidental take limit for Steller sea lions is a 5-year average of 14 Steller sea lion injuries or mortalities per year, and up to 45 Steller sea lion injuries or mortalities in a single year. In addition to these take limits, we will evaluate total human-caused serious injury and mortality of Steller sea lions annually, and if PBR is exceeded, we will determine whether the MMPA 101(a)(5)(E) permit and Steller sea lion ITS are still valid.

2.8.1.5 Leatherback Sea Turtles

We anticipate that the take of leatherback sea turtles will occur as a result of the proposed continued operation of the PCGF. Incidental take of leatherback sea turtles occurs as a result of entanglement with fishing gear as a consequence of fishing activity. This take is expected to occur in the sablefish pot/trap fishery. In the effects section, we estimated an average of 0.38 leatherback sea turtles per year entangled by proposed fishing, with a maximum of 1 leatherback sea turtle entangled in a single year. Therefore, the incidental take limit for leatherback sea turtles is a 5-year average of 0.38 leatherback sea turtle injury or mortality per year, and up to 1 leatherback sea turtle injury or mortality in a single year. Consistent with the analysis in this biological opinion, unidentified gear entanglements reported to stranding networks would be counted against these take limits in addition to known leatherback sea turtle entanglements in gear of the proposed fishery (until minimum coverage levels are achieved; see Take Monitoring Measures and Terms below). These criteria are conservative in light of uncertainty about proposed fishery impacts on leatherback sea turtles because of low observer coverage for this fishery.

2.8.2 Effect of the Take

In the accompanying biological opinion, we determined that the level of anticipated incidental take of the above identified listed species by the proposed action is not likely to result in jeopardy to the species or destruction of critical habitat.

2.8.3 Reasonable and Prudent Measures

“Reasonable and prudent measures” are nondiscretionary measures to minimize the amount or extent of incidental take (50 CFR 402.02). “Terms and conditions” implement the reasonable and prudent measures (50 CFR 402.14). These must be carried out for the exemption in section 7(o)(2) to apply.

Management Planning and Take Reporting Measures

We include reasonable and prudent measures in this incidental take statement for management planning and take reporting that is applicable to all species considered in this opinion (green sturgeon, eulachon, humpback whales, Steller sea lions, and leatherback sea turtles). These

measures will require NMFS to periodically analyze, report, and review new information, and evaluate whether reinitiation is warranted.

- (1) NMFS shall develop a Pacific Coast Groundfish and Endangered Species Workgroup¹⁰.
- (2) NMFS shall characterize changes in fishing effort.
- (3) NMFS shall update reporting of take considered in this opinion.
- (4) NMFS shall update the NWFSC risk assessment, as needed.

Take Monitoring Measure

We include a reasonable and prudent measure in this incidental take statement to monitor the extent of incidental take of species considered in this opinion associated with the operation of the PCGF. The extent of take monitored will be compared with take limits specified for the fishery (Section 2.8.1, Amount or Extent of Take). To this end, monitoring is specific to observer coverage for all species considered in the opinion, with the exception of humpback whales. We do not anticipate that observer programs will be able to provide accurate bycatch estimates for humpback whales entangled in sablefish pot/trap gear, because the gear is left untended (and therefore unobserved) and humpback whales are mobile once entangled in the gear.

- (1) NMFS shall identify goals for minimum coverage levels to achieve fleet-wide take estimates for green sturgeon, eulachon, Steller sea lions, and leatherback sea turtles, and a plan for implementation.
- (2) NMFS shall consider methods of accounting for take of listed species in unobserved fisheries of the proposed action.

Species-Specific Measures

We also include reasonable and prudent measures in this incidental take statement specific to individual species considered in this opinion. Included are measures to minimize the amount or extent of incidental take associated with NMFS observer program sampling and handling of protected species where these effects are not otherwise authorized or exempted.¹¹ For this action and species contemplated in the opinion, green sturgeon are the only species not otherwise authorized or exempted.

Eulachon

We include the following reasonable and prudent measures in this incidental take statement to monitor and limit impact from the incidental take of eulachon associated with operation of the PCGF.

- (1) NMFS shall regularly develop and modify protocols and implement biological sampling to assess the impacts of the Groundfish FMP actions upon eulachon.

¹⁰ If the workgroup becomes a Council committee, the name of this group may change. We are flexible as to who houses the group and the group name.

¹¹ Samples collected for turtles are authorized under 50 CFR 222.310 and 223.206 of the ESA. For Category I and II fisheries, observers are authorized to take samples of marine mammals under MMPA, Section 118, 50 CFR 229.7(b) and (c), and for Category III fisheries, observers are authorized via 229.7(d). Disentanglement, dehooking, and other handling considered aiding a stranded marine mammal are authorized under MMPA Section 109(h). Samples collected for eulachon do not cause additional effects, because mortality is assumed from trawl bycatch.

- (2) Any changes in groundfish trawling regulations that are anticipated to increase eulachon bycatch (i.e., trawl net requirements such as chafing gear, mesh size, codend specifications) will result in a reinitiation of this biological opinion.
- (3) Promulgation of 4(d) take prohibitions for eulachon shall result in a reinitiation of this biological opinion if operation of the WCGF fishery results in take that is prohibited by the 4(d) rule but not covered by the incidental take statement.

Green Sturgeon

We include the following reasonable and prudent measures in this incidental take statement to monitor the incidental take of Southern DPS green sturgeon associated with operation of the PCGF.

Although the expected incidental capture and associated mortality of Southern DPS green sturgeon per year in the fishery is relatively low, the bycatch data from 2002 through 2010 indicate that incidental capture and mortality can be greater in some years. Given the uncertainties in this analysis, measures should be taken to identify factors contributing to greater incidental take of green sturgeon, to improve our ability to predict when greater levels of incidental take may occur, and to address those factors in the future. The measures and the associated terms and conditions (identified in the following section) also specify monitoring needed to track the fleet-wide incidental take and to estimate the lethal take of Southern DPS green sturgeon in the fishery to demonstrate that the impacts of the fishery are consistent with this opinion. To do that, the measures and associated terms and conditions address the uncertainties regarding the effects on Southern DPS green sturgeon from capture in the fishery.

The primary uncertainties include those regarding the expanded estimate of encounters, the recapture rate of fish that are captured and released alive, and the sublethal and lethal impacts on green sturgeon of capture with trawl gear¹². These uncertainties need to be addressed to more accurately assess the effects of the fishery on Southern DPS green sturgeon. The information generated from implementation of these measures is relevant to and necessary for implementation of the measures described in this take statement under Management Planning and Take Reporting.

- (1) NMFS shall analyze years with a high number of green sturgeon encounters (i.e., years with greater than 28 estimated green sturgeon encounters, representing the number of encounters expected in the fishery in most years) to identify factors associated with greater incidental take of green sturgeon in the PCGF.
- (2) NMFS shall collect biological samples and data on incidental take of Southern DPS green sturgeon associated with the operation of the PCGF.

¹² Our conclusions regarding the effects of the fishery on the viability of Southern DPS green sturgeon were based on the best available information from the observer programs and assumptions that green sturgeon encountered in the fishery are not recaptured within the same year, and green sturgeon caught in the fishery and released alive have high survival rates and do not experience significantly adverse sublethal effects. The impacts of the fishery on the species may become of more concern if information indicates that the fishery recaptures the same green sturgeon more than once and/or that green sturgeon encountered and released alive experience higher post-release mortality rates and more severe sublethal impacts than estimated here.

Humpback Whales

We include the following reasonable and prudent measure to improve our knowledge of incidental take of humpback whales in the PCGF.

- (1) NMFS shall provide all west coast observers with the Fixed Gear Guide (http://swr.nmfs.noaa.gov/psd/Fixed%20Gear%20Guide-FINAL_12.14.11.pdf) and the entangled whale hotline (877-SOS-WHAlE) during observer training. The guide will help observers that may opportunistically sight an entangled whale identify the entangling gear to a specific fishery. The hotline provides a resource for reporting and response.

Leatherback Sea Turtles

We include the following reasonable and prudent measures to limit impact from the incidental take of leatherback sea turtles associated with operation of the PCGF.

- (1) NMFS shall educate observers on handling methods that will reduce sea turtle injury or mortality.

2.8.4 Terms and Conditions

The terms and conditions described below are non-discretionary, and NMFS must comply with them in order to implement the reasonable and prudent measures (50 CFR 402.14). NMFS has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this incidental take statement (50 CFR 402.14). If the following terms and conditions are not complied with, the protective coverage of section 7(o)(2) will likely lapse.

Management Planning and Take Reporting Terms and Conditions

Terms and conditions (a,b,c...) specific to each of the above identified reasonable and prudent measures (1,2,3...) for management planning and take reporting are identified below (1.a, etc.).

- 1.a. NMFS shall identify preliminary membership¹³ for a Pacific Coast Groundfish and Endangered Species Workgroup (PCGW) within eight months of opinion issuance.
- 1.b. Within three months of opinion issuance, NMFS shall invite PFMC and USFWS to provide points of contact, participate in the PCGW, and help develop terms of reference for the workgroup (see e. below). NMFS shall request response regarding participation within six months of opinion issuance.
- 1.c. The PCGW shall at a minimum convene on a biennial basis to consider all new information, described in the below measures.
- 1.d. Based on review of new information, the PCGW will make recommendations, for example, to develop new analyses or reports, changes to sampling protocols, implement conservation measures, and identify whether reinitiation is warranted.
- 1.e. The PCGW members shall recommend and NMFS shall adopt the final terms of reference for the PCGW, ideally within 12 months of opinion issuance. These terms

¹³ Membership is subject to change based on technical needs, constituent interest, Council direction, etc.

shall document the purpose and structure of the group, the basis for key recommendations, staff points of contact and their roles and responsibilities, resources needed to accomplish the workgroup purpose, and a breakdown of anticipated work schedules (e.g., for biennial reporting and completing a future consultation following a PCGW recommendation to reinstate).

- 2.a. NMFS shall analyze the available data on fishing effort to evaluate changes in fishing effort by gear type that may result from implementing the IFQ management program, and develop a report to characterize changes on a biennial basis. Roles for this analysis will be defined as part of 1(e), above.
 - i. For example, NMFS shall report any significant increases or changes in the spatial and temporal characteristics of fisheries, where possible.
- 3.a. Fleet-wide take reporting: NMFS shall analyze the available data on observed take of protected species to provide fleet-wide take estimates on a biennial basis. Roles for this reporting will be defined as part of 1(e), above.
- 3.b. Annual tracking of observed take: NMFS Groundfish Observer Programs shall provide annual summaries of observed takes based on final data. NMFS NWR and SWR stranding networks shall provide annual summaries of observed marine mammal and sea turtle human interactions.
- 3.c. Immediate notification: NMFS Groundfish Observer Programs shall provide immediate notification¹⁴ of observed sea turtle takes as well as any opportunistically observed whale or sea turtle entanglements, regardless of whether the entangled species or gear is known.
- 4.a. The need for an updated risk assessment shall be determined by recommendation of the PCGW. Roles for this assessment will be defined as part of 1.e, above.

Take Monitoring Terms and Conditions

Terms and conditions specific to the above identified reasonable and prudent measures for take monitoring are identified below.

- a. Roles of workgroup participants to identify minimum coverage levels for monitoring and an implementation plan will be defined as part of the Management Planning and Take Reporting Term and Condition 1.e, above.
- b. The minimum goals for monitoring will be defined for fisheries with anticipated observable take of ESA-listed species identified in Table 33, below.

Table 33. Anticipated observable take in the PCGF fishery by species and fisheries.

Species*	Fisheries	Source
Green sturgeon	LE groundfish bottom trawl and at-sea hake fisheries	Al-Humaidhi et al. 2012
Eulachon	LE groundfish bottom trawl and at-sea hake fisheries	Al-Humaidhi et al. 2012
Steller sea lions	LE groundfish bottom trawl and at-sea hake fisheries	Jannot et al. 2011

¹⁴ By immediate, NMFS means as soon as practicably feasible. For sea turtles, contact the Southwest Fisheries Science Center, attention Scott Benson. For marine mammals, use the 1-800-SOS-WHALE hotline for reporting.

Leatherback sea turtles**	Sablefish pot/trap fisheries	Jannot et al. 2011 and stranding records
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*Although humpback whale take is anticipated in sablefish pot/trap fisheries, observer programs as described in the analysis above do not observe this take because humpback whales are mobile once entangled.

**Leatherback sea turtles are not mobile once entangled, and therefore, entanglements are readily observable upon gear retrieval.

- c. The implementation plan will identify a near-term timeframe to implement goals for minimum monitoring coverage.
- d. Once implemented, NMFS shall meet or exceed the minimum monitoring each year, unless take is no longer observed for a minimum number of years.

Species-specific Terms and Conditions

Eulachon

Terms and conditions specific to each of the above identified reasonable and prudent measures for fishery modification are identified below.

- 1.a. By late summer/early fall of each year, the Groundfish Observer Program will analyze the current year's eulachon bycatch data and will discuss and modify, if necessary, protocols and sampling procedures with NMFS PRD and NWFSC for the following year.
- 2.a. Any proposed changes in groundfish regulations that are anticipated to increase eulachon bycatch (i.e., fishing effort, trawl net requirements such as chafing gear, mesh size, codend specifications) will be evaluated by the PCGW to determine whether reinitiation is warranted.

Green Sturgeon

Terms and conditions specific to each of the above identified reasonable and prudent measures for fishery modification are identified below.

- 1.a. In coordination with the PCGW, NMFS shall evaluate years of high green sturgeon encounters (i.e., years with greater than 28 estimated green sturgeon encounters, representing the number of encounters expected on average based on the WCGOP and A-SHOP data and estimates from 2002 through 2010) to investigate factors that may have contributed to the higher number of encounters compared to other years. Factors to investigate include characteristics of the fishery (e.g., the level and distribution of fishing effort in the LE groundfish bottom trawl sector, by area, season, depth, haul duration, etc.), characteristics of the observer program (e.g., overall observer coverage rates, the distribution of observer coverage by sector, area, and season), characteristics of green sturgeon populations and movements (e.g., distribution of green sturgeon along the coast, transition of a strong year class of juveniles to subadults), and oceanographic conditions (e.g., water temperature, productivity).
- 2.a. NMFS shall continue to collect biological data on observed green sturgeon throughout the Groundfish Observer Programs, according to the green sturgeon sampling protocol in the observer manuals. These data will be provided to NMFS PRD in the take reports

as described in this section of the opinion under Management Planning and Take Reporting.

- 2.b. NMFS shall ensure that green sturgeon tissue samples collected are appropriately stored and transported for genetic analysis.
- 2.c. In coordination with the PCGW, NMFS shall develop and implement methods to monitor the extent to which individual green sturgeon incidentally captured in the PCGF are recaptured each year. These methods may involve applying external tags (e.g., spaghetti tags) or internal tags (e.g., PIT tags) to green sturgeon encountered and observed in the fishery.
- 2.d. In coordination with the PCGW, NMFS shall develop and implement methods to monitor the impacts on green sturgeon of capture and release in the fishery. The methods should address the lethal and sublethal impacts on green sturgeon post-release. Methods may include the application of external or internal tags to green sturgeon encountered and observed in the fishery and/or development and implementation of a fish condition key to more consistently assess the condition of fish caught and released in the fishery. ESA coverage must be obtained for any additional take of Southern DPS green sturgeon as a result of implementing this term and condition, if not already considered in this opinion.

Humpback Whales

- 1.a. Reporting shall be directed from observers through the observer program.
- 1.b. Reporting shall be similar to or modeled after the attached form (Appendix B).

Leatherback Sea Turtles

- 1.a. NMFS shall provide information to observers regarding regulations requiring fishermen to properly handle, release, and resuscitate sea turtles, per 50 CFR 223.206(d)(1).
- 1.b. NMFS shall provide information on sea turtle biology during groundfish observer training.

2.9 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

2.9.1 Eulachon

The following conservation recommendations for eulachon would provide information for future consultations involving the operation of the PCGF:

- (1) NMFS should continue operations for the NMFS Observer Program and an adequate level of observation for the WA/OR/CA pink shrimp fishery.
- (2) NMFS should retain eulachon bycatch for archiving: whole body eulachon specimens should be retained for further understanding of the species. Eulachon marine life history

is poorly understood; therefore, the impact of the Groundfish FMP upon eulachon is not well understood. Whole body specimens can allow for stock identification (genetic samples), diet (stomach analysis), sex ratios (examination of gonads), age (Ba:Ca ratios in otoliths), presence (locations of captures), and general morphology measurements. Eulachon sampling procedures for sample size, collection location and frequency, and archiving details should be determined by NMFS PRD, NWFSC, and Groundfish Observer Programs.

2.9.2 Green Sturgeon

The following conservation recommendations for green sturgeon and green sturgeon critical habitat would provide information for future consultations involving the operation of the PCGF:

- (1) NMFS should develop a rangewide abundance estimate for the Southern DPS green sturgeon. The lack of data to generate reliable rangewide abundance estimates of adult and subadult Southern DPS green sturgeon was a source of uncertainty in the analysis in this opinion of the impacts of the fishery to the species. This source of uncertainty can be reduced or eliminated by developing an abundance estimate. One of the main concerns with existing abundance estimates is that the data used were generally from studies not specifically designed to sample green sturgeon. Reliable methods need to be developed for estimating the abundance of adults, subadults, and juveniles. In particular, methods for monitoring the annual spawning run size and for monitoring the abundance of juveniles are needed. These methods would need to be applied over a sufficiently long period of time (e.g., at least 10 years) to collect the data required to generate reliable rangewide abundance estimates.
- (2) NMFS should assess the effects of bottom trawl gear on bottom habitat within designated green sturgeon critical habitat. Repeated disturbance of bottom habitats could be a concern for green sturgeon critical habitat because of effects on prey resources. Information needed to evaluate the effects of this fishery on green sturgeon critical habitat include characterization of the bottom types where bottom trawl fishing occurs, quantification of the area affected by bottom trawl gear, and quantification of the distribution, frequency, and level of bottom trawling effort throughout green sturgeon critical habitat to assess the level of repeated impacts.
- (3) NMFS should continue to monitor state-managed fishery sectors that encounter green sturgeon (i.e., the California halibut bottom trawl sector) and, if funding is available, increase coverage rates. Develop minimum coverage levels necessary to extrapolate fleet-wide take estimates from monitoring data. Rationale: The observer program provides valuable data to estimate the effects of these fisheries on Southern DPS green sturgeon and inform the assessment of the environmental baseline, which is an integral part of the opinion analysis. Determining the minimum coverage levels necessary to extrapolate fleet-wide take estimates from monitoring data would help to set target coverage levels.

2.9.3 Humpback Whales and Leatherback Sea Turtles

The following conservation recommendations for humpback whales and leatherback sea turtles provide general guidance for unique, visual marking of sablefish pot/trap gear as identifiable to a specific fishery, as well as guidance to report, track, and retrieve pot/trap gear that becomes lost, and guidance to minimize the loss of pot/trap gear. Implementing these recommendations would

improve our knowledge of incidental take of humpback whales and leatherback sea turtles in the PCGF and minimize that take. Washington and Oregon commercial Dungeness crab fisheries are example models where regulations for unique, visual marking of gear and programs to report, track, and retrieve lost gear are established. Citations regarding these regulations and programs are provided below. Dan Ayres, WDFW's Coastal Shellfish Lead Biologist, is a point of contact for questions about the Washington fishery: Daniel.Ayres@dfw.wa.gov or 360-249-4628 ext. 209. Kelly Corbett, ODFW's Commercial Crab Project Leader, is a point of contact for questions about the Oregon fishery: Kelly.C.Corbett@state.or.us or 541-867-0300 ext. 244. These measures shall be further discussed and developed by the PCGW, who may recommend adoption as conservation measures.

- (1) NMFS and the PCGW should work with the PFMC to require or recommend visual marking that can be used to uniquely identify sablefish pot/trap gear (e.g., OAR 635-005-0480 and WAC 220-52-040 for Dungeness Crab Buoy Tag and Gear Marking Requirements). Visual marking can help identify gear entangled on a whale or turtle to a specific fishery, while absence of visual markings can also help rule out a fishery that uses unique, visual markers (e.g., Figure 10).



Figure 10. In this photograph, unique, visual markers (blue tag and buoy identification number) confirm that the entangled gear is from the Washington commercial crab fishery.

- (2) NMFS and the PCGW should work with the PFMC to create electronic monitoring and logbook reporting requirements for the sablefish pot/trap fishery that require or recommend fishers to document effort and lost gear (see Appendix C for example logbook regulations, instructions, and entry forms that include lost gear reporting).
- (3) NMFS and the PCGW should work with the PFMC to develop a database to track sablefish pot/trap fishing effort, locations, and lost fixed-gear (see Appendix D for an example database).

- (4) NMFS and the PCGW should work with the PFMC to summarize data on lost gear from the sablefish pot/trap fishery to evaluate the magnitude of gear loss and factors that may influence loss (specific areas, times of year, etc.). Also, summarize fixed-gear fishing effort and locations to support overlap analysis with humpback whale (or other large whale) migrations or aggregation. Data summary should follow the reporting cycle developed for the PCGW above.
- (5) NMFS and the PCGW should work with the PFMC to promote retrieval of lost gear (see Appendix E and Appendix F for information about example programs for gear recovery).
- (6) NMFS and the PCGW should work with the PFMC to assess available technology to minimize loss of sablefish pot/trap gear (i.e., Gearfinder technology) and promote use of appropriate technology.
- (7) NMFS and the PCGW should work with the PFMC to investigate the practice of storing sablefish pot/trap gear in the ocean to evaluate the potential for conservation issues and any need for additional regulation.

2.9.4 Leatherback Sea Turtles

- (1) NMFS and the PCGW should assess the feasibility of collecting data to assess bycatch of jellyfish in the groundfish trawl fisheries.
 - (a) NMFS and the PCGW should consider the practicality of identifying jellyfish to species that could be encountered in the groundfish trawl fisheries.
 - (b) NMFS and the PCGW should evaluate methods that observers could use to estimate the proportion of jellyfish in a trawl set and, if applicable, the proportion of brown sea nettles in that estimate.

2.10 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action on listed species or designated critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

[REDACTED]

[REDACTED]

[REDACTED]