

APPENDIX B: Endangered Species Act Memo and Biological Assessment

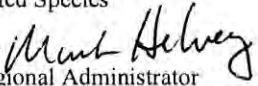


UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
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Long Beach, California 90802-4213

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MEMORANDUM FOR: Chris Yates
Assistant Regional Administrator
For Protected Species

FROM: Mark Helvey 
Assistant Regional Administrator
For Sustainable Fisheries

SUBJECT: Initiation of Section 7 Consultation on Effects of a Proposed Study on the Use of Light-Touch California Halibut Trawl Gear within Historic Monterey Bay Trawl Grounds on Endangered Species Act Listed Species

This memo initiates a consultation under section 7 of the Endangered Species Act (ESA) with respect to a proposed study on the use of light-touch California halibut (*Paralichthys californicus*) trawl gear within historic Monterey Bay trawl grounds now closed to trawling. This survey is in many ways comparable to the fishery-independent surveys for California halibut (halibut) performed in 2007 and 2010 by California Department of Fish and Game, Marine Region (CDFG). The research study will examine the effects of light-touch trawl gear using a video camera mounted on the head rope of the trawl. It will also compare catch composition, obtain an additional set of relative abundance and length frequency data used in stock assessment, track migration and movements of California halibut using Floy dart tags, and provide data on benefits of an ad-hoc marine protected area due to closure of trawl in 2006. The newly acquired data will add an additional index of biomass for future stock assessments of halibut. This research is a partnership between the CDFG and the National Marine Fisheries Service, Southwest Region, Sustainable Fisheries Division (NMFS-SWR-SFD). The proposed action will take place within the boundaries of the National Oceanic and Atmospheric Administration's, Monterey Bay National Marine Sanctuary (MBNMS). The MBNMS requires issuance of a permit in order for the CDFG and NMFS-SWR-SFD to conduct the survey within its waters. Further, since the NMFS-SWR-SFD will be contributing equipment and have an at-sea biologist performing duties on-board the survey vessel, this is the Federal nexus requiring NMFS-SWR-SFD to initiate consultation with the National Marine Fisheries Service, Southwest Region, Protected Resources Division (NMFS-SWR-PRD). Therefore the lead action agency for this proposed action is the NMFS-SWR-SFD, and the CDFG is a non-Federal representative who will be conducting the at-sea research and be carrying out many aspects of the survey. This action is not anticipated to be controversial.

Light-touch trawling would occur within Monterey Bay along the same trawl lines used by CDFG in August 2010 for a fishery-independent halibut trawl survey. A total of 20 daylight



tows, each of 30-minute duration, would be completed in during a four or five day period. This short-term study will take place in July or August 2013 (specific dates to be determined), aboard the F/V *Cecelia*. No ESA-listed species have been encountered on similar CDFG surveys in 2007 and 2010 in Monterey Bay.

There have been no previous consultations to date with the NMFS-SWR-PRD on this proposed survey or previous halibut surveys. The consultation process for this proposed action started with an initial meeting between NMFS-SWR-SFD and NMFS-SWR-PRD on October 22, 2012 asking for assistance on the biological assessment. This memorandum and attached biological assessment are the first official steps in the consultation process for this proposed action.

Based upon past observations of similar surveys and the lack of expected take of ESA-listed species or their critical habitat, we have determined that it is unlikely that ESA species will be taken or adversely affected by this proposed action and similarly, that there will be no adverse impacts to critical habitat. Specifically, we believe that the light-touch trawl survey to be conducted in Monterey Bay is not likely to adversely affect ESA-listed species of marine mammals, sea turtles, salmon, steelhead, or green sturgeon or their critical habitat. Based upon this conclusion, we are requesting informal consultation under section 7 consultation of the ESA. This determination was made utilizing the best available scientific data.

Biological Assessment

The effects of the proposed study on use of light-touch California halibut (*Paralichthys californicus*) trawl gear within historic Monterey Bay trawl grounds on Endangered Species Act listed species

January 10, 2013
National Marine Fisheries Service
Southwest Region
Sustainable Fisheries Division

I. Introduction

The purpose of this biological assessment is to review the potential ecosystem impacts of a proposed study to evaluate the use of light-touch California halibut (*Paralichthys californicus*) trawl gear within Monterey Bay in sufficient detail to determine to what extent the proposed action may affect any of the threatened, endangered, proposed, or sensitive species and designated or proposed critical habitats listed below. In addition, the following information is provided to comply with statutory requirements to use the best scientific and commercial information available when assessing the risks posed to listed and/or proposed species and designated and/or proposed critical habitat by proposed federal actions. This biological assessment has been prepared in accordance with legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (50 CFR 402; 16 U.S.C. 1536 (c)).

In order to comply with the statutory requirements of the Endangered Species Act (ESA), background information related to the short-term study being proposed is provided. The study will document immediate ecosystem impacts from the use of this trawl gear by placing a video camera on the head rope of the trawl net. The study will also document the catch rate and condition of California halibut (halibut) and associated species caught with light-touch trawl fishing gear, and compare the results with those of previous fishery-independent trawl surveys conducted by the California Department of Fish and Wildlife, Marine Region (CDFW) in both 2010 and 2007 using traditional commercial trawl gear. Additionally, the survey will provide another data set of relative abundance and length frequency to be used in the next central halibut stock assessment.

Threatened, Endangered, Proposed Threatened or Proposed Endangered Species

The following listed species may be affected by the proposed action (Wang, 2012, Pearson-Meyer, 2012, Fahy, 2012 and DeAngelis, 2012.):

Table 1. ESA-listed species that may present off the U.S. west coast in the action area.

Marine Mammals	Status
Blue whale (<i>Balaenoptera musculus</i>)	Endangered
Fin whale (<i>Balaenoptera physalus</i>)	Endangered
Humpback whale (<i>Megaptera novaeangliae</i>)	Endangered
Steller sea lion - eastern distinct population segment (DPS) (<i>Eumetopias jubatus</i>)	Threatened
Guadalupe fur seal (<i>Arctocephalus townsendi</i>)	Threatened
Sea turtles	
Leatherback turtle (<i>Dermochelys coriacea</i>)	Endangered
Loggerhead turtle (<i>Caretta caretta</i>)	Endangered
Olive ridley (<i>Lepidochelys olivacea</i>)	Endangered/Threatened
Green turtle (<i>Chelonia mydas</i>)	Endangered/Threatened
Marine fish	
North American green sturgeon, southern DPS (<i>Acipenser medirostris</i>)	Threatened

Salmonids		
Chinook (<i>Oncorhynchus tshawytscha</i>)	Sacramento River winter, evolutionarily significant unit (ESU)	Endangered
	Central Valley Spring ESU	Threatened
	California Coastal ESU	Threatened
Coho (<i>Oncorhynchus kistuch</i>)	Central California Coastal ESU	Endangered
Steelhead (<i>Oncorhynchus mykiss</i>)	South-Central California Coast DPS	Threatened
	Central California Coast DPS	Threatened
	Central Valley DPS	Threatened

Critical Habitat

The action addressed within this document may affect designated Critical Habitat for species listed below (Wang, 2012, Fahy, 2012 and DeAngelis, 2012):

Table 2. Designated Critical Habitat (by species) within the action area.

Critical Habitat		
Stellar sea lion (<i>Eumetopias jubatus</i>)	Rogue Reef: Pyramid Rock Oxnard Reef: Long Brown Rock and Seal Rock Ano Nuevo Island Southeast Farrallon Island Sugarloaf Island	Associated aquatic zones 3,000 feet seaward in State and Federally managed waters from the baseline of each designated rookery
Green Sturgeon, southern DPS (<i>Acipenser medirostris</i>)	US coastal marine waters within 60 fathoms from Monterey Bay, CA, to Cape Flattery, WA, the Sacramento River and other select waters within the Sacramento-San Joaquin River-Delta system, and other select coastal bays and estuaries waters within California, Oregon, and Washington.	
Leatherback turtle (<i>Dermochelys coriacea</i>)	This designation includes approximately 16,910 square miles stretching along the California coast from Point Arena to Point Arguello east to the 3,000 meter depth contour, and 25,004 square miles stretching from Cape Flattery, Washington to Cape Blanco, Oregon east of the 2,000 meter depth contour. The designated areas comprise approximately 41,914 square miles of marine habitat and include waters from the ocean surface down to a maximum depth of 262 feet (or 80 m).	

Non-ESA Listed Marine Mammals

In addition to the ESA-listed marine mammals described above, a number of non-ESA listed marine mammals, protected under the Marine Mammal Protection Act (MMPA), may also be found in the action area. In particular, California sea lions (*Zalophus californianus*), Pacific harbor seals (*Phoca vitulina*), northern fur seals (*Callorhinus ursinus*), northern elephant seals (*Mirounga angustirostris*), Pacific white-sided dolphins (*Lagenorhynchus obliquendens*), short-beaked Common dolphins (*Delphinus delphis*), northern right-whale dolphins (*Lissodelphis borealis*), striped dolphins (*Stenella coeruleoalba*), common bottlenose dolphins (*Tursiops truncatus*), Risso's dolphins (*Grampus griseus*) harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*Phocoenoides dalli*), Minke whales (*Balaenoptera acutorostrata*) and killer whales (*Orcinus orca*). None of these non-listed ESA species (or stocks) are listed as depleted under the MMPA except killer whales from the Southern Resident population. (The Southern Resident killer population contains three pods, considered one stock under the MMPA and is also listed as a "distinct population segment" (DPS) under the ESA, but it is unlikely that they will be in the area during the summer months.) Based upon the lack of interactions with these non-ESA listed marine mammals in similar surveys performed in 2007 and 2010, the short duration of the proposed survey (4-5 days, with approximately 20 daylight tows), and the monitoring and mitigation procedures outlined in Attachment 1, these non-ESA listed marine mammals above are not considered further in this analysis.

II. Consultations to Date

There have been no previous consultations to date for this proposed action or similar surveys performed by CDFW in 2007 and 2010. The original initiation process for this proposed action started with an initial email from National Marine Fisheries Service, Southwest Region, Sustainable Fisheries Division (NMFS-SWR-SFD) to National Marine Fisheries Service, Southwest Region, Protected Resources Division (NMFS-SWR-PRD) on May 24, 2012. The initiation process was started with the intent to complete the survey in July/August of 2012 but the survey was postponed due to the late time of the year for halibut distribution. The proposed survey is now set to start in July/August 2013. The initiation process for the 2013 survey started with a meeting between NMFS-SWR-SFD and NMFS-SWR-PRD on October 22, 2012. The memorandum and this biological assessment are the first official steps into the consultation process for this 2013 proposed action.

III. Description of the Proposed Action

The proposed action will take place within the boundaries of the National Oceanic and Atmospheric Administration's, Monterey Bay National Marine Sanctuary (MBNMS). The MBNMS requires issuance of a permit in order for the CDFW and NMFS-SWR-SFD to conduct the survey within its waters. Since the NMFS-SWR-SFD will be contributing equipment and have an at-sea biologist performing duties on-board the survey vessel, this is the Federal nexus requiring NMFS-SWR-SFD to initiate an ESA Section 7 consultation with NMFS-SWR-PRD, and therefore the lead action agency for this proposed action is the NMFS-SWR-SFD. Additionally, the CDFW is a non-Federal representative who will be conducting the at-sea research and be carrying out many aspects of the survey.

NMFS-SWR-SFD and the CDFW have highly experienced and educated biologist for performing the survey operations and obtaining the best available data. The CDFW will cover costs for their own staff to serve as observers, who will identify and enumerate all captured finfish and invertebrate species, measure and tag halibut with dart tags, and preparation and disseminate the catch summary report. NMFS-SWR-SFD will cover costs for their biologist, the video camera equipment, the video data analysis, and the report writing. All other costs will be paid by The Alliance of Communities for Sustainable Fisheries and

the City of Monterey, but may include partial funding by the Southern California Trawlers Association and the Port San Luis Commercial Fishermen's Association, as funded by South Bay Cable Committee and the Central Coast Cable Committee. This would include funding for four days of travel time for the F/V *Cecelia* from Santa Barbara Harbor to Monterey Harbor and return, and 4-to-5-days to perform the proposed survey. They will also provide funding for miscellaneous costs. The costs for these items are not expected to exceed \$20,000.

Background Information, Methods and Objectives

In the summer of 2006, California state legislation (SB 1459) closed Monterey Bay to bottom trawling. Prior to that time trawling had occurred for at least 75 years in this area. In August 2008 the California Fish and Game Commission established criteria for "light-touch" trawl gear (as defined in California Code of Regulations Title 14, see Figure 1) and required that only this gear could be used within the California Halibut Trawl Grounds (CHTG) in southern California. In order to study the feasibility of using light-touch halibut trawl gear within the historic Monterey Bay trawl grounds, a research partnership was developed between CDFW and NMFS-SWR-SFD. The research study will examine the effects of light-touch trawl gear using a video camera mounted on the head rope of the trawl. This survey is many ways comparable to the fishery-independent survey for halibut performed in 2007 and 2010 by the CDFW. Therefore the study will also compare catch composition, obtain an additional set of relative abundance and length frequency data used in halibut stock assessment, track migration and movements of halibut using Floy dart tags, look at the potential economic sustainability of a revived halibut trawl fishery and provide data on benefits of an ad-hoc marine protected area due to closure of the area to trawling in 2006.

Light-touch trawling would occur within the historic Monterey Bay trawl grounds along the same trawl lines used by CDFW in August 2010 in the fishery-independent halibut trawl survey (Figure 2). Tow depths in the previous two surveys ranged from 12 to 41 fathoms. For all general purposes, the 2013 survey will take place at depths from approximately 10 fathoms to 35 fathoms on soft-bottom between approximately 36° 56' North latitude to 36° 48' North latitude. A total of 20 daylight tows, each of 30-minute duration will be undertaken. The vessel speed of the previous two surveys averaged between 2.4 knots to 2.7 knots. It is anticipated that the 2013 survey tow speed similarly will be between 2.4 knots and 2.7 knots depending on current and swell direction (Tanaka, 2012a). The study would occur during a 4-to-5 day period in July or August 2013 (specific dates to be determined), aboard the F/V *Cecelia*. The F/V *Cecelia* (vessel 10292, US Docs 262180) is a 49-foot wooden vessel with a 19 foot beam, and weighs 13 gross tons.

The light-touch trawl net to be used in the proposed trawl survey has different mesh sizes to that of traditional trawl nets used in the 2007 and 2010 California halibut trawl surveys. In 2007 and 2010, the traditional trawl used had a footrope 63 feet long, body mesh of 5 inches, and cod end mesh of 4 inches, as compared to the light-touch trawl net to be used in the 2013 survey which has a footrope 60 feet long, body mesh of 5 inches, and cod end mesh of 7.5 inches (Figure 1). Additionally the light-touch trawl also has no floats on the headrope and therefore has "low-rise" making the net height from the headrope to footrope opening smaller (4 foot opening vs. a 10-to 15 foot opening) than that of a traditional trawl net (McCorkle, 2012). The capacity of the light-touch trawl net is hard to quantify but it is unlikely that the net would catch over 1,000 pounds of fish (McCorkle, 2012). The light-touch trawl net is not made to be a high capacity trawl net. The light-touch trawl net targets halibut for the live fish market, therefore trawls are short and the net is made to catch fish and keep them in the best condition possible (McCorkle, 2012).

A NMFS-SWR-SFD Biologist will be present during all tows using an underwater video camera attached to the net and will operate the camera to record net and door performance. A CDFW Department

biologist will be on-board during all tows to monitor and process the catch. A graduate student from California State University, Moss Landing Marine Laboratories will be on-board for one or two days to collect information on halibut length and maturity. All halibut will be measured and condition noted as soon as possible after the catch is placed on the deck. The CDFW will retain any halibut which do not survive towing and will retain any other sub-legal sized halibut for life history studies. All legal-sized halibut in good condition will be tagged and released. The CDFW will provide standard dart tags. All non-halibut will be identified to species, measured individually (except some invertebrates), and weighed as species aggregates. In past surveys, Pacific sea nettles (*Chrysaora fuscescens*) were only observed and not weighted or counted due to broken individuals or the numbers were too numerous to be weighed. For the 2013 survey, every attempt will be made to identify, weigh and count Pacific sea nettles as they are considered primary prey for the leatherback sea turtle. The condition of all non-halibut species will be noted, and all will be released. Fish may be placed into a separate bin with fresh seawater to keep them alive before assessment and release.

Video data will be processed using standard techniques developed by NMFS-SWR-SFD personnel. The CDFW will prepare a summary report and tables relative to halibut captured as well as associated species. NMFS-SWR-SFD will analyze all video footage to assess performance of the light-touch halibut trawl net, and will prepare a summary report of their findings. All data and reports will be made available to the public and shared among the parties participating in the proposed study.

This proposed action will not only help to understand and quantify the use of light-touch trawl gear for a potential halibut fishery, but it will also provide another index of relative abundance for the halibut stock assessment. Additionally, this proposed study will help researchers understand the extent light-touch trawl gear minimizes contact with the seafloor. To our knowledge, there are no interrelated or interdependent actions that exist.

Action Area

The proposed action will take place in the Pacific Ocean off the coast of California in Monterey Bay and within MBNMS waters. Trawling using light-touch trawl gear would occur within the historic Monterey Bay trawl grounds along the same trawl lines used by CDFW in the August 2010 fishery-independent halibut trawl survey (Figure 2). Specifically, the proposed survey will take place at depths from approximately 10 fathoms to 35 fathoms on soft-bottom between approximately 36° 56' North to 36° 48' North latitude (Tanaka, 2012a). The survey expects to complete 20 daylight tows, each of 30-minute duration.

IV. Status of the Species and Critical Habitat in the Action Area

This section describes how ESA-listed species may be directly or indirectly affected by the proposed action. Direct effects would include incidental capture and injury or mortality in fishing nets, and indirect effects would be the loss of forage and possible loss of habitat due to performing the proposed study.

Status of Species

There are five individual species or DPSs (and therefore, "species" under the ESA) of marine mammals listed as under the ESA that occur in Monterey Bay, California (Table 1). These ESA-listed marine mammals occur in the action area but the probability of the 2013 survey having any incident with any of these species is unlikely based on the seasonality and short duration of the proposed project (DeAngelis, 2012). Again, the proposed survey will only perform 20 tows within a 4-5 day period. Tows will only

last 30 minutes and be carried-out in daylight hours. A monitoring and mitigation protocol will be followed including a visual scan of the sea surface before net deployment, and deploying and retrieving the trawl net as quickly as possible to minimize chances of having an interaction with ESA listed species (Attachment 1). If a marine mammal is caught it will trigger an immediate call to the appropriate personnel and the survey will cease. Further, there were no records of incidental take of ESA-listed marine mammals recorded during similar surveys performed by CDFW within Monterey Bay in 2007 and 2010 (Attachment 2 and Attachment 3). Due to the seasonality and short duration of the survey, having a protocol in place to minimize potential interactions, and the fact that the two previous surveys did not have encounters with ESA-listed marine mammals, NMFS-SWR-SFD believes it is highly unlikely that there will be any interactions with ESA-listed marine mammals during the proposed study.

With respect to ESA-listed sea turtles, four sea turtle species (green, loggerhead, leatherback, olive ridley) are found off the California coast at times and have stranded in central California, although it is extremely rare with respect to the hard-shelled turtles, that is, the green, loggerhead and olive ridley turtles (Fahy, 2012). Leatherbacks are found in the Monterey Bay area at the end of summer through fall so they have a higher likelihood of being in the action area than the hard-shelled turtles. Due to the small vessel size, the short duration of the proposed survey and the relatively short distance from the harbor to the trawl area, NMFS-SWR-SFD believes the chance of ship strikes to leatherbacks and other protected species to be minimal. Additionally, the light-touch trawl net also has no floats on the headrope and therefore operates with a low profile making the net height from the headrope to footrope opening smaller (4 foot opening vs. a 10-to15 foot opening) than that of a traditional trawl net (McCorkle, 2012).

Although all four sea turtle species may be in the action area at the time of the proposed study, there have been no interactions with sea turtles in similar surveys performed in Monterey Bay by CDFW. Also, a monitoring and mitigation protocol will be followed to minimize any chance of having an interaction with ESA listed sea turtles. The protocol includes a visual scan of the sea surface before deployment, and deploying and retrieving the trawl net as quickly as possible (Attachment 1). Additionally, with specific regard to leatherback sea turtles, each morning of a trawl survey day, the scientific crew will call the appropriate NMFS leatherback sea turtle expert (Attachment 1) to get the most recent information on location of leatherbacks within the specific survey area in order to avoid potential interactions. An interaction with a sea turtle will trigger an immediate call to the appropriate personnel and the survey will cease. However, NMFS-SWR-SFD believes the study is not likely to have any interactions with ESA-listed sea turtles.

There are seven individual evolutionarily significant units (ESUs; and therefore "species" under ESA) of salmonids listed as under the ESA that occur in Monterey Bay (Table 1). The ESA-listed salmonids may be present during the proposed survey, and could be found in water depths between 17-170 fathoms offshore (Pearson-Meyer, 2012). Data from the beginning of the 2011 Chinook fishing season (season runs from April – September) indicate Chinook were caught in waters between 20-30 fathoms in Monterey Bay. In the 2010 CDFW halibut survey, the tows closest to land were 3 miles from shore, and at a depth ranging from 12 to 34 fathoms (Tanaka, 2012b). There was no incidental take of salmonids, including ESA-listed salmonids, during similar surveys performed by CDFW within Monterey Bay in both 2007 and 2010.

Although salmonids may be present in the action area, the proposed trawl survey would likely avoid capture of salmonids because the gear is not designed to target pelagic species but rather bottom-dwelling halibut. The light-touch trawl net is not expected to catch salmonids during deployment or retrieval because the net will collapse on itself during these times, thereby making the net unfishable. NMFS-SWR-SFD believes the proposed study will not likely affect salmonids species within the action area.

On April 7, 2006, NMFS determined that the Southern DPS of North American green sturgeon (*Acipenser medirostris*) were at risk of being threatened (71 FR 17757). Green sturgeon are an anadromous species that range from the Bering Sea, Alaska, to Ensenada, Mexico (Figure 3). The only known spawning population for the Southern DPS is in the Sacramento River (NMFS, 2009). Tagging data have confirmed the presence of Southern DPS green sturgeon in Monterey Bay (Lindley et al., 2008). Additionally, the commercial California set-net fishery using one-panel trammel nets and fished at depths between 30 and 31 fathoms, caught seven green sturgeon in 1999 and one green sturgeon in 2000 (of unknown DPS) as bycatch (Rasmussen, 2006). The bycatch occurred within the area of the proposed project between 37° N to 36° 30' N latitude.

Data from the West Coast Groundfish Observer Program (WCGOP) show there were 457 green sturgeon caught as incidental catch on observed tows between 36° N to 38° N latitude during the 2002 to 2010 time period. WCGOP records indicate that out of 4,849 total observed tows during 2002 to 2010, only 237 observed tows were positive for green sturgeon. These observed positive tows were from the Limited Entry California Halibut Fishery, the California Halibut Fishery, or the Limited Entry Trawl fishery and were conducted north of 37.1875° N latitude (i.e., north of Monterey Bay). As a result, incidental take of green sturgeon during the survey is not expected as green sturgeon have not been caught as bycatch in the trawl fishery south of 37.1875° N latitude. Furthermore, green sturgeon were not listed as bycatch in similar surveys performed by CDFW in Monterey Bay in both 2007 and 2010 (Attachment 2 and Attachment 3). As a result, NMFS-SWR-SFD has determined that undertaking the California halibut light-touch trawl research survey is not likely to adversely affect green sturgeon. However, should any green sturgeon interactions occur, it will trigger an immediate call to the appropriate NMFS personnel and the survey will cease.

Critical Habitat

Critical habitat has only been identified for Stellar sea lions, leatherback turtles, and the green sturgeon southern DPS that occur in the proposed study area. Critical habitat for Stellar sea lions in California includes the rookeries at Ano Nuevo Island, Sugarloaf Island, and the southeast Farrallon Islands (50 CFR 226.202 on Aug. 27, 1993). The proposed halibut survey does not fish near these islands, therefore the proposed action is not expected to affect critical habitat for Stellar sea lions.

Critical habitat for the leatherback turtle has been identified as being off the California coast from Point Arena to Point Arguello east to the 3,000 meter depth contour and includes waters from the ocean surface down to a maximum depth of 80 meters (Benson et al., 2007; Graham, 2009). Leatherback sea turtles feed primarily on jellyfish species (75 FR 319). The primary constituent element essential for conservation of leatherback turtles is the occurrence of prey species, primarily scyphomedusae of the order Semaestomeae of sufficient condition, distribution, diversity, abundance and density necessary to support individual as well as population growth, reproduction, and development of leatherbacks. Previous halibut surveys have been known to catch Pacific sea nettle jellyfish of the order Semaestomeae. Although previous similar surveys have not shown any direct interaction with leatherback sea turtles, Pacific sea nettle jellyfish were present in all 12 tows of the 2010 survey. Jellyfish caught in these past surveys were only noted and not weighed or counted due to broken individuals or the numbers were too numerous to be weighed. For the 2013 survey the scientific crew will attempt to identify, weigh and count Pacific sea nettles to the best of their ability. The presence of the primary prey species during past tows within the study area suggest there could be impacts to sea turtle prey, in particular jellyfish removals by the survey. However, the proposed 2013 survey will only be performing 20 tows within Monterey Bay and will use light-touch trawl gear with 7.5-inch mesh which has been shown to reduce the amount of bycatch compared to traditional trawl gear with 4.5-inch mesh (CDFW, 2008). Also, as mentioned previously, the light-touch trawl operates with a low profile making the net height from the headrope to footrope opening smaller than that of a traditional trawl net (McCorkle,

2012). With the increase in mesh size of the cod end from 4 inches to 7.5 inches and the low-rise of the net, a reduction in the catch of Pacific sea nettles relative to previous CDFW survey tows is expected. Further, the net is not expected to catch large quantities of Pacific sea nettles when being deployed or retrieved because the doors will not be in proper fishing configuration resulting in a collapsed and unfishable net. Therefore NMFS-SWR-SFD believes the proposed survey is not likely to have any affect on leatherback sea turtles critical habitat as there have been no incidental take of sea turtles in previous surveys and the bycatch of leatherback prey will most likely be lower than previous similar surveys. Further due to the short duration of the proposed survey, obstruction of sea turtle migratory pathways is not expected. Finally, the survey will implement a mitigation and monitoring protocol to address concerns regarding the catch of jellies.

Figure 4 shows the critical habitat for green sturgeon which encompasses U.S. coastal marine waters within 60 fathoms from Monterey Bay, California, to Cape Flattery, Washington, the Sacramento River and other select waters within the Sacramento-San Joaquin River-Delta system, and other select coastal bays and estuaries waters within California, Oregon, and Washington. Within the study area, the Southern DPS green sturgeon critical habitat specifically includes coastal marine waters in Monterey Bay from the mean low, low water line onshore to the 60 fathom depth contour offshore. Monterey Bay is the most southerly area designated as critical habitat defined in the final report for green sturgeon critical habitat (NMFS, 2009). The southerly point of Monterey Bay is the dividing line between being designated as having "low" conservation value and "medium/high" conservation value. Additionally, the coastal marine waters of Monterey Bay, are outside of the connectivity corridor identified by the Critical Habitat Review Team (CHRT) when they designated critical habitat. Further, most Southern DPS subadults and adults exiting San Francisco Bay are believed to migrate north, but some small portion also migrates south as far as Monterey Bay, primarily in winter months. Thus, since the proposed survey will take place in the summer months when sturgeon would not be normally utilizing Monterey Bay, the impact to critical habitat will be minimal, if any.

Essential features of the nearshore coastal marine habitat for green sturgeon are a migratory corridor for safe and timely passage of fish within marine and between estuarine and marine habitats, suitable water quality, and abundant food resources (NMFS, 2009). The final green sturgeon critical habitat report lists three activities that may affect the primary constituent elements within the area from Monterey Bay to San Francisco Bay. Those activities include bottom trawl fisheries that may affect benthic habitats and food resources; the release of effluents from power plants (thermal effluent); and desalination plants (hypersaline effluent; plants are located as far north as Santa Cruz) that may affect water quality. The CHRT further stated that fishing vessels using bottom trawl gear may affect green sturgeon critical habitat by affecting sediment quality and available food resources for green sturgeon. Bottom trawling and the use of other bottom tending gear may result in positive effects on food resources (by digging up and making prey resources more available for green sturgeon), but may also result in adverse effects by potentially removing or disturbing benthic prey resources (NMFS, 2009).

The prey resources important to green sturgeon within the marine portion of their life-cycle (as well as in the freshwater environment) are believed to include mainly benthic invertebrate and similarly related fishes. The trawl operations are designed to specifically target soft-bottom benthic finfish and are generally considered effective at avoiding species that would be considered bycatch. However, bottom trawl fisheries can disturb the bottom. Information prepared by NMFS indicates that habitat impacts by bottom trawl gear in areas where California halibut trawling occurs (soft-benthic bottom) have the lowest sensitivity classification for impacts to seafloor habitat by bottom trawl gears (CDFW, 2008). Mean recovery time for trawl gear impacts in the CHTG is estimated by NMFS to be less than one year in the absence of continued fishing (CDFW, 2008). The proposed survey should potentially minimize the disturbance of the seafloor compared to previous similar surveys as the proposed survey will be using light-touch trawl gear, which is thought to have a lesser degree of a physical impact on the seafloor.

Further, the proposed study will be performed over such a short time period (only 4-to-5 days with approximately 20 tows) that any seafloor disturbance will be very temporary. Therefore, NMFS-SWR-SFD believes the proposed study will not disturb a migratory corridor, effect water quality or an abundant food source defined within critical habitat. Consequently, the proposed survey will not likely effect green sturgeon critical habitat within the action area.

V. Environmental Baseline and Cumulative Effects

In the summer of 2006, California state legislation (SB 1459) closed Monterey Bay to trawling. Prior to this time trawling had occurred for at least 75 years in this area. Present fisheries in Monterey Bay include: hook-and-line for white seabass, California halibut, salmonids, and rockfish (*Sebastes* species); purse seine for California market squid, Pacific sardine, Northern anchovy, and Pacific mackerel; and, trap for hagfish.

VI. Effects of the Action

NMFS-SWR-SFD believes the above analysis of the potential impacts from the proposed survey may affect, but is not likely to adversely affect the listed species identified and the designated critical habitat reviewed. Further NMFS-SWR-SFD believes the expected effects to be discountable and it would be extremely unlikely for take of any of the ESA-listed species to occur.

Analysis of Alternate Actions

The only alternate action for the purposes of this proposed survey would be to not perform the California halibut light-touch trawl survey within Monterey Bay. If this survey is not performed the CDFW will not be able to add an additional index of biomass in future stock assessments for California halibut and the effects and economic viability of light-touch California halibut trawl gear in Monterey Bay would remain unknown.

VII. CONCLUSION

The proposed research survey is a short-term study conducted over a 4-to-5 day period performing approximately 20 daytime tows. The study will test light-touch trawl gear with 7.5-inch mesh in the cod end which has been shown to reduce the amount of bycatch compared to traditional trawl gear (CDFW, 2008). No ESA-listed species from the included list (Table 1) have been encountered in similar CDFW surveys performed in Monterey Bay. Based upon past observations of comparable surveys and the lack of take of these ESA-listed species, NMFS-SWR-SFD has determined that it is unlikely that these species will be taken or adversely affected by this proposed action. Specifically, it is believed that the light-touch trawl survey proposed to be conducted in Monterey Bay is not likely to adversely affect ESA-listed species of marine mammals, sea turtles, salmon, steelhead, or green sturgeon, or designated critical habitat. It is the determination of NMFS-SWR-SFD that the proposed action may affect, but is not likely to adversely affect ESA-listed species that may be within the proposed action area or their critical habitat. This determination was made utilizing the best available scientific data. Based upon this conclusion, NMFS-SWR-SFD is requesting informal consultation under section 7 of the ESA.

IX. LIST OF DOCUMENTS

Attachment 1. 2013 Light-touch California Halibut Trawl Survey in Monterey Bay: Marine Mammal, Sea Turtle, Green Sturgeon and Pacific Sea Nettle Jellyfish Monitoring and Mitigation Protocol.

Attachment 2. 2007 Cruise Report State Finfish Management Project, Fishery Independent Trawl Survey in Monterey Bay.

Attachment 3. 2010 Cruise Report State Finfish Management Project, California Halibut (*Paralichthys californicus*) Trawl Survey of North Monterey Bay.

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XI. LIST OF CONTACTS/CONTRIBUTORS/PREPARERS

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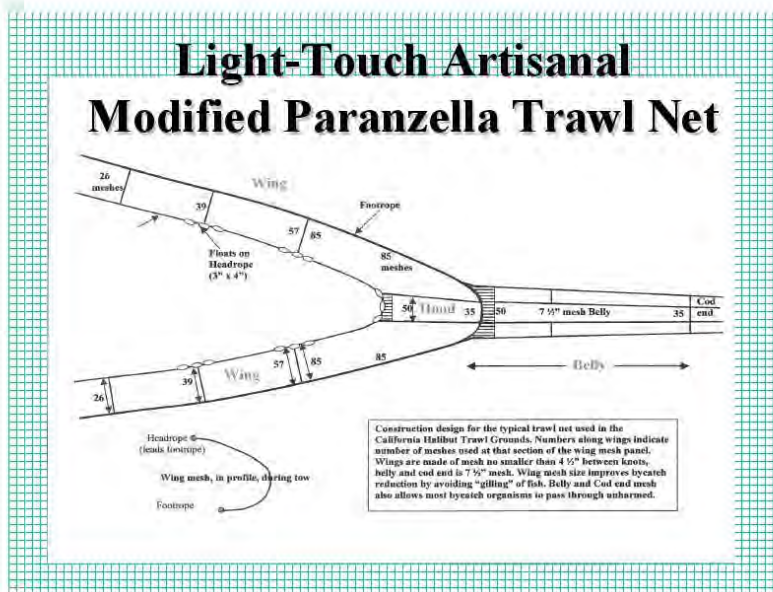


Figure 1. Diagram of light-touch trawl net gear with design specifics. (Gear specifics as required by the California Code of Regulations Title 14. Specific description per CCR Title 14 § 124. Halibut Trawling. (b) Gears. Special gear requirements apply while trawling for California halibut in the California Halibut Trawl grounds. Each trawl net, including trawl doors and footrope chain, shall meet the following requirements: (1) Each trawl net shall have a headrope not exceeding 90 feet in length. The headrope is defined as a chain, rope, or wire attached to the trawl webbing forming the leading edge of the top panel of the trawl net. Headrope shall be measured from where it intersects the bridle on the left side of the net to where it intersects the bridle on the right side of the net. (2) The thickness of the webbing of any portion of the trawl net shall not exceed 7 millimeters in diameter. (3) Each trawl door shall not exceed 500 pounds in weight. (4) Any chain attached to the footrope shall not exceed one quarter inch in diameter of the link material. The footrope is defined as a rope or wire attached to the trawl webbing forming the leading edge of the bottom panel of the trawl net. (5) The trawl shall have no rollers or bobbins on any part of the net or footrope. Rollers or bobbins are devices made of wood, steel, rubber, plastic, or other hard material that encircle the trawl footrope. These devices are commonly used to either bounce or pivot over seabed obstructions, in order to prevent the trawl footrope and net from snagging on the seabed.)

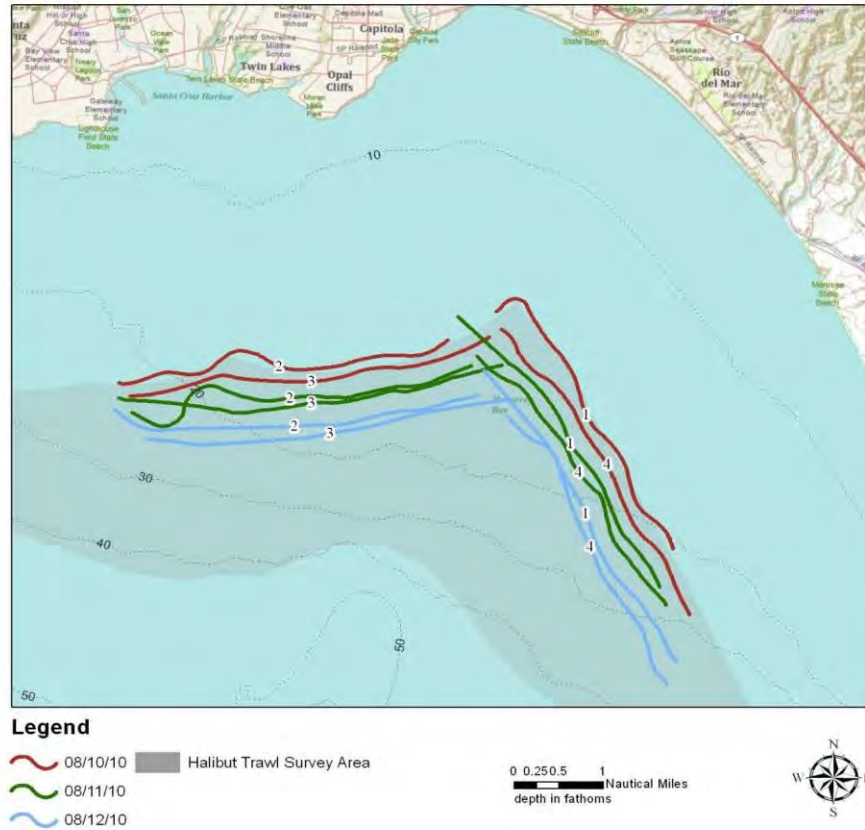


Figure 2. California halibut trawl survey tow tracks for 2010 California Department of Fish and Game fishery-independent trawl survey in north Monterey Bay.

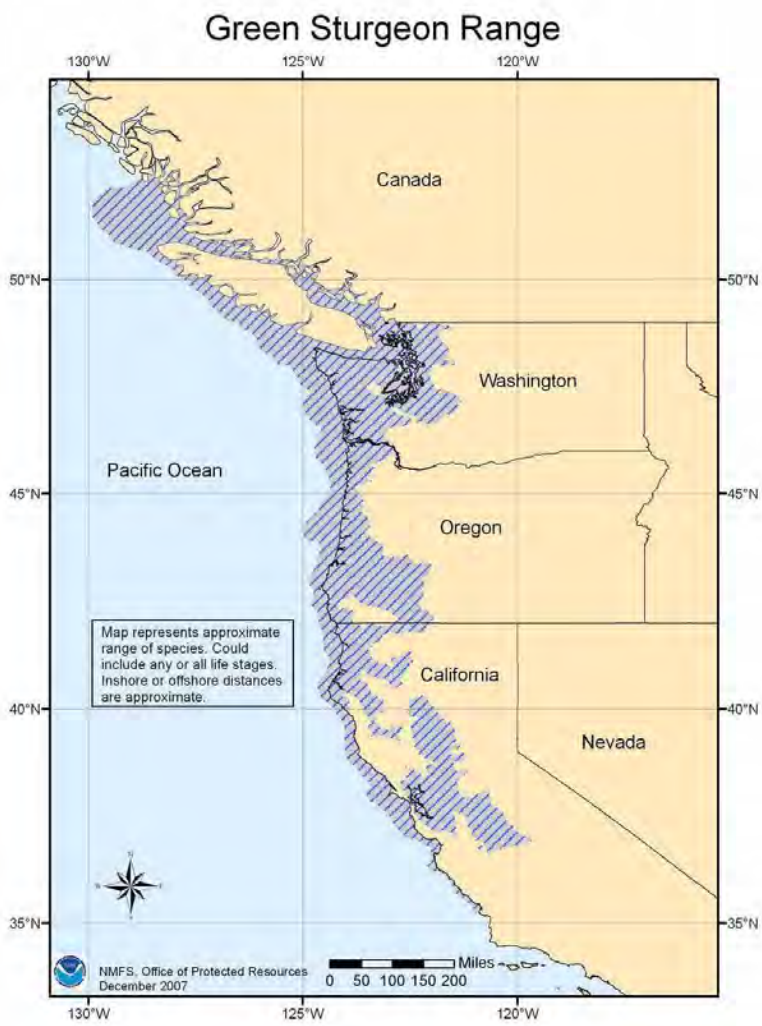


Figure 3. North American green sturgeon range (NMFS, 2009).



Figure 4. North American green sturgeon critical habitat (NMFS, 2009).