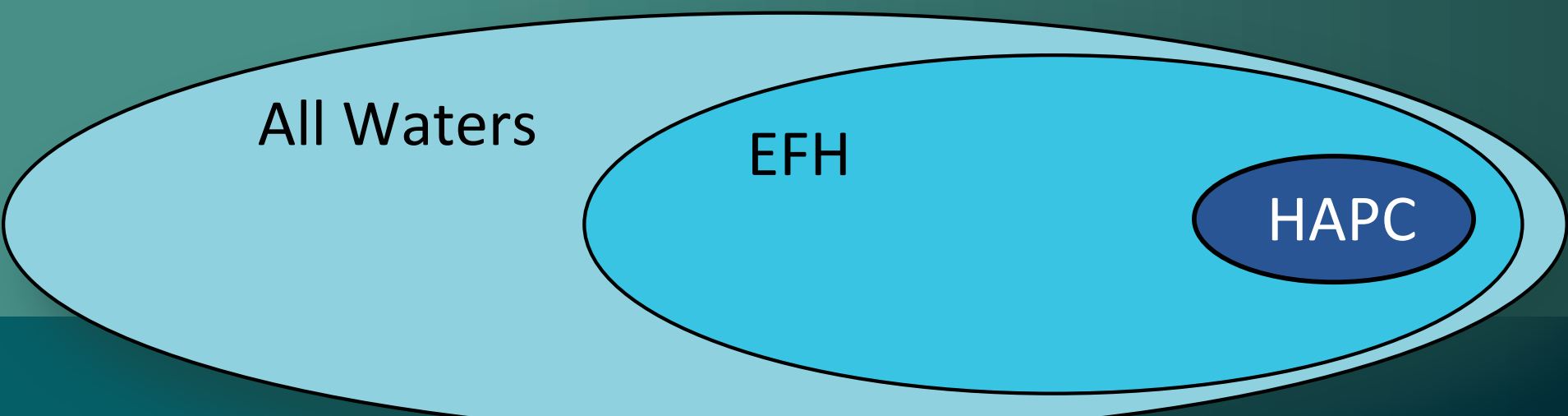


# Skate Nursery HAPC Designation in the Eastern Bering Sea



## ABSTRACT

Skates exhibit K life history strategies and depend on high juvenile survivorship and recruitment for sustained healthy populations. Skate nurseries are areas of exceptional skate productivity and essential for successful skate reproduction. The protracted embryo development (>3 years) and low fecundity substantially increases the exposure of embryos to predation and disturbances at nursery sites. In 2010, six skate nursery areas were proposed as Habitat Areas of Particular Concern (HAPC) in response to a Request for Proposals (RFP) by the North Pacific Fisheries Management Council (NPFMC). Specifically, HAPCs are geographic sites that fall within the distribution of Essential Fish Habitat (EFH) for species managed under a Fishery Management Plan (FMP). The six HAPCs are comprised of 8 skate nursery sites for three of the most abundant skate species in the EBS: Aleutian (*Bathyrāja aleutica*), Alaska (*B. parmifera*), and Bering (*B. interrupta*) skates. After public review, the NPFMC choose to designate the six HAPCs, request NMFS monitor these HAPCs for changes in egg density, and add skate research and monitoring to their Research Priorities list. Lastly, no protective measures, such as gear or area restrictions were taken at this time. The recognition of these sites as HAPC highlights the importance of this essential fish habitat for conservation, providing a platform for closer monitoring of disturbances causing detrimental effects (i.e. fishing, drilling, dredging). We believe the habitat designation will provide, at the least, a broader understanding of the importance of these sites and emphasize the need for further research and monitoring to ensure healthy skate populations and sustainable fisheries as designated under the Magnuson-Stevens Fishery Conservation and Management Act.

The purpose of HAPCs is to focus conservation, management, and research efforts on subsets of EFH that are vulnerable to degradation or are especially important ecologically for federally managed fish. The HAPC designation alone does not confer additional protection or restrictions to an area, but helps to focus EFH conservation, management, and research priorities. HAPC designation is a valuable way to acknowledge areas where we have detailed information on ecological function and habitat vulnerability, indicating a greater need for conservation and management. In some instances the Council and NMFS may develop fishery management measures to conserve the habitat within the HAPC. HAPCs are a subset of EFH that deserve special attention because they provide extremely important ecological functions and/or are especially vulnerable to degradation. For instance, HAPC designation may be warranted for areas that play a vital role in the reproductive cycle of a managed species (e.g., grouper spawning sites) or areas that contain a rare habitat type (e.g., corals) that may be sensitive to disturbance from fishing or other human activities. A Council may designate an area as a HAPC for one or more of the following reasons: The habitat provides important ecological functions. The habitat is sensitive to human-induced environmental degradation. Development activities are, or will be, stressing the habitat. The habitat type is rare. Additionally, a Council may establish HAPC priorities based on concerns for any particular habitat area, i.e. Areas of Skate Egg Concentration.

### PRIMARY SKATE NURSERY PUBLICATIONS

Hoff, G.R. 2010. Identification of skate nursery habitat in the eastern Bering Sea. *Marine Ecology Progress Series* 403, 243–254.

Hoff, G.R. 2009. Embryo developmental events and the egg case of the Aleutian skate *Bathyrāja aleutica* (Gilbert) and the Alaska skate *Bathyrāja parmifera* (Bean). *Journal of Fish Biology* 74, 483–501.

Hoff, G.R. 2009. Skate *Bathyrāja* spp. egg predation in the eastern Bering Sea. *Journal of Fish Biology* 74, 250–269.

Hoff, G.R. 2008. A nursery site of the Alaska skate (*Bathyrāja parmifera*) in the eastern Bering Sea. *Fishery Bulletin* 106:233–244.

Hoff, G.R. 2007. Reproductive biology of the Alaska skate *Bathyrāja parmifera*, with regard to nursery sites, embryo development and predation. Ph.D. Dissertation, University of Washington, Seattle. 161 pp.

### HAPC INFORMATION

NOAA Fisheries <http://www.alaskafisheries.noaa.gov/habitat/efh/hapc/default.htm>

North Pacific Fisheries Management Council <http://www.alaskafisheries.noaa.gov/habitat/efh/hapc/default.htm>

HAPC Process Document, Sept 2010 [http://www.npfmc.org/wp-content/PDFdocuments/conservation\\_issues/HAPC/hapc\\_process092010.pdf](http://www.npfmc.org/wp-content/PDFdocuments/conservation_issues/HAPC/hapc_process092010.pdf)

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### GOA Jig Gear

The Council and the Enforcement Committee reviewed a discussion paper on limiting other gear types on board vessels jigging for Pacific cod in the Gulf, and moved to take further discussion until such a time as more catch and participation data are available under the Amendment 83 sector split management structure. Under separate TAC allocations for each gear type sector, there could be incentives to increase the duration of one sector's season at the expense of another; the discussion paper allows from such a foreseen concern. It is unclear at this time, though, whether gear restrictions would adequately address accompanying issues of misreporting Pacific cod in the Gulf, for example, longline catch misreported as jigcatch. The federal 83 season for the jig sector opened on June 10. Based on catch data thus far in 2012, it is anticipated that the jig sector fleet will receive a 1% step-up in its TAC allocation for the 2013 season. Though recognizing the potential incentive to misreport Pacific cod catch under sector splits, the Council noted that there is no clear indication that widespread misreporting of catch is occurring at this time.

Photo: Paul Olsen 10/12

### HAPC

The Council made an initial review of the analysis to identify areas of skate egg concentration as Habitat Areas of Particular Concern (HAPCs). The Enforcement Committee also reviewed the analysis. The Council selected Alternative 2 and Options a, d, and e for "Preferred" Preliminary Alternative (PPA), and released the document for public review. The Council moved to settle from Alternative 2 its intent to "discourage fishing in these areas" of skate egg concentration with gear that makes contact with the sea floor. The Council adopted a revised Statement of Purpose and Need, based on public comments. The motion is available on the Council's website.

Under Option a, NMFS would monitor HAPC for changes in egg density and other potential effects of fishing, and the Council would request that industry support collection of data in evaluation of monitoring and management efforts relative to those HAPCs. Under Option d, the Council would suggest adding research and monitoring of areas of skate egg concentration to the Council's research priority list. The intent of its PPA is to monitor the potential impacts of fishing activities in the proposed HAPCs primarily at the population level and, if practicable, to develop additional information on fishery interactions with areas of skate egg concentrations.

Finally, under Option e, the Council would adopt the formatting standards as stated in the final rule implementing Amendment 89 to the BSAI Groundfish FMP, which establishes Bering Sea habitat conservation measures. This option is a housekeeping amendment to consolidate figures and tables that describe the Bering Sea Habitat Conservation Area (HCA), the Northern Bering Sea Research Area and Saint Lawrence Island HCA, and the Norton Sound, Eklutna Strait, and Kuskoquim Bay HCAs. Staff contact is David Wetzel.

Photo: NMFS 10/12

Photo: NMFS 10/12

Above: Whitefish waiting on the lead line to Quinlan. Left: Permanent Squidoff address the community and guests of Quinlan at a reception during the Council meeting. Below: The Coast Guard cutter Martin.



### NPFMC MEETING Minutes June 2012

#### C-2 HAPC Areas of Skate Egg Concentration

##### BACKGROUND

In 2010, the Council set a habitat priority type—"skate nurseries"—and issued an RFP in conjunction with completion of its EFH five-year review. Council staff initially screened proposals, and the joint groundfish Plan Teams reviewed the HAPC proposals for rarity and ecological merit. The Council selected a HAPC proposal from the Alaska Fisheries Science Center (AFSC) for further analysis. In February and March/April 2012, the Council made initial reviews of an analysis of alternatives and options to identify and conserve six areas of skate egg concentration as HAPCs in the eastern Bering Sea.

The Council refined its alternatives based on the recommendations of the Enforcement Committee and requested further analysis. Additionally, at the request of NMFS, option e was added to address a housekeeping issue for the BSAI Groundfish FMP. Sarah Mellon gave the NPFMC staff report on this agenda item. The SSC had given its report earlier, Lori Swanson gave the AP report, and public comment was taken.

##### COUNCIL DISCUSSION/ACTION

Mr. Twiet moved the following, which was seconded:

- The Council approves the Skate Egg Concentration HAPC EA/RI/IRFA for release as a Public Review Draft analysis with the changes and edits as outlined by the SSC.
- The Council adopts Alternative 2, Options a, d, and e as its preliminary preferred alternative.

##### Alternative 2: Identify skate egg concentration HAPC(s):

The Council may select to identify – individually, severally, or all six of the areas of skate egg concentration as HAPC. At each of the six areas of skate egg concentration, the spatial extent of research bottom trawls containing more than 1,000 egg cases per kilometer squared (km<sup>2</sup>) have been established. Boundary lines are then snapped outward to the nearest minute of latitude or longitude. The intent of Alternative 2 is to identify these areas as HAPCs. Under Alternative 2, the six proposed areas of skate egg concentration will be identified as HAPC:

**Option a:** NMFS would monitor HAPCs for changes in egg density and other potential effects of fishing, and the Council would request that industry support collection of data in evaluation of monitoring and management efforts relative to those HAPCs.

**Option d:** Suggest adding research and monitoring of areas of skate egg concentration to the Council's research priority list.

**Option e:** Adopt formatting standards as stated in the final rule implementing Amendment 89 to the BSAI Groundfish FMP. With the addition of Option a, the intent of this alternative is to monitor the impacts of fishing activities in the proposed HAPC sites, primarily at the population level, and if practicable, develop additional information on fishery interactions with egg concentrations. The Council also adopted the following modified Statement and Purpose of Need:

HAPC are geographic sites that fall within the distribution of Essential Fish Habitat for the Council's managed species. The Council has a formalized process, identified in its FMPs, for selecting HAPCs that begins with the Council identifying habitat priorities—here, areas of skate egg concentration. Candidate HAPCs must be responsive to the Council priority, must be rare (defined as uncommon habitat that occurs in discrete areas within only one or two Alaska regions), and must meet one of three other considerations: provide an important ecological function; be sensitive to human-induced degradation; or be stressed by development activities. The candidate HAPC identify sites of egg concentration by skate species (Rajidae) in the eastern Bering Sea. Skates are elasmobranch fish that are long-lived, slow to mature, and produce few young. Skates deposit egg cases in soft substrates on the sea floor in small, distinct sites. A reproducing skate deposits only several egg cases during each reproductive season. Depending on the species, a single egg case can hold from one to four individual skate embryos, and development can take up to three years. Thus, a single egg case site will hold several year classes and species, and eggs growing at different rates. Distinct skate egg deposition sites have been highlighted by skate stock experts while assessing skate information from research survey and catch locations. The scientists noted repeated findings of distinct sites where egg cases recruit to sampling or fishing gear contacting the sea floor: egg case prongs (or horns) entangle in or cases recruits into the gear. These sites are discrete areas near the shelf/slope break that serve as important spawning and embryonic development areas for skate species. It is therefore important to consider: 1) designating these areas as HAPCs; 2) to consider restricting activities which impact the habitat at these sites; and 3) to monitor the continued utility of these sites for skate spawning and embryonic development, and further study for the relationship between the habitat features of these sites and site selection for skate egg deposition. Mr. Twiet spoke to his motion noting that these unique areas are worthy of preservation, and that these are sites that we want to protect from a broad range of fisheries and other potential impacts. He noted that by declaring the area a HAPC, it becomes a helpful tool in agency to agency consultation.

Mr. Henderscheidt moved to amend, which was seconded, to add at the end of the purpose and needs statement in the analysis: These sites are discrete areas near the shelf/slope break that serve as important spawning and embryonic development areas for skate species. It is therefore important to consider: 1) designating these areas as HAPCs; 2) to consider restricting activities which impact the habitat at these sites; and 3) to monitor the continued utility of these sites for skate spawning and embryonic development, and further study for the relationship between the habitat features of these sites and site selection for skate egg deposition. The amendment passed without objection, and the amended main motion passed unanimously.

