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# Skate Nursery Sites as Habitat Areas of Particular Concern (HAPC)

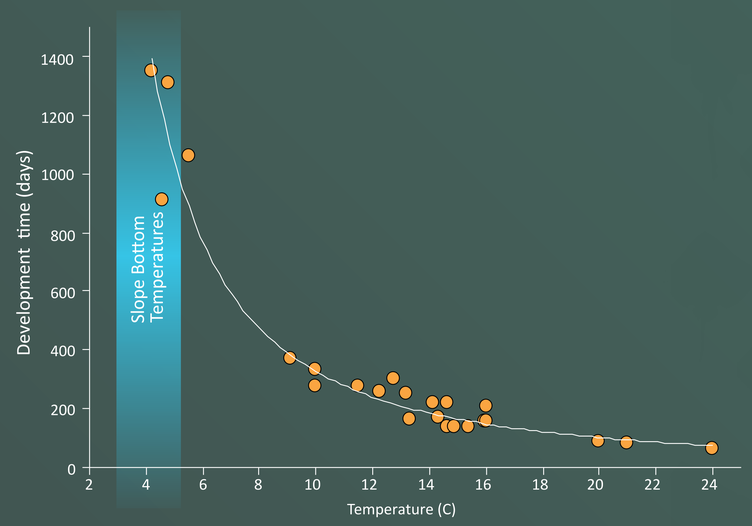
i) **The importance of the ecological function provided by the habitat**

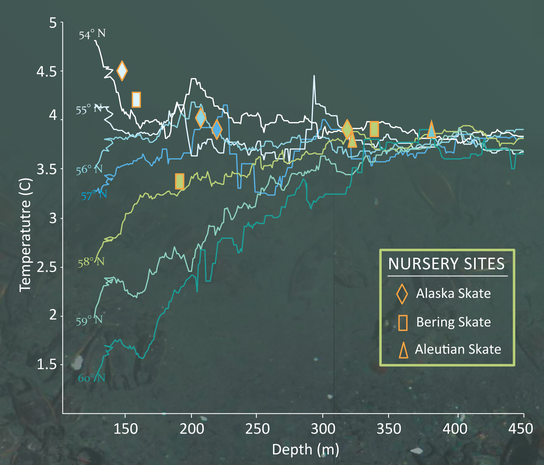
ii) The extent to which the habitat is sensitive to human-induced environmental degradation

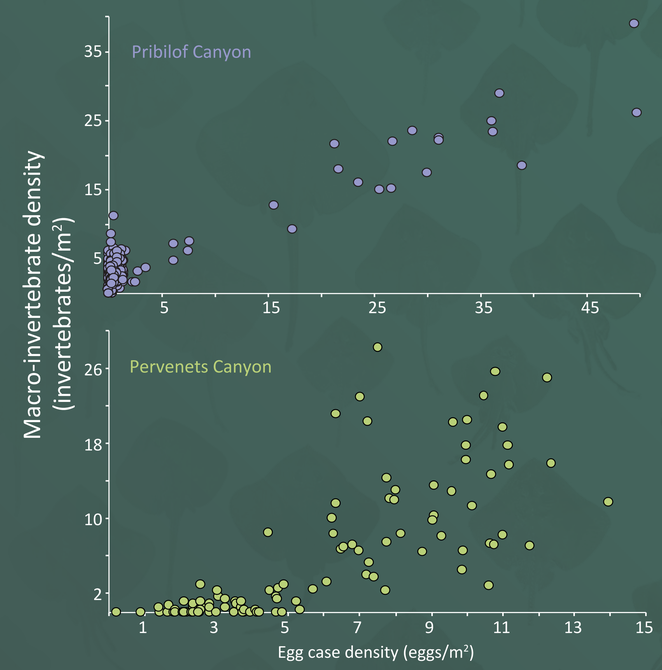
iii) Whether, and to what extent, development activities are, or will be, stressing the habitat type

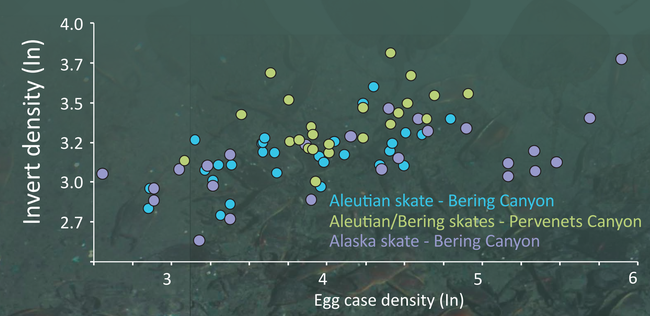
iv) **The rarity of the habitat type**

Skate nurseries in the eastern Bering Sea are exceptional areas of the Essential Fish Habitat (EFH) identified for skates. In 2010 six sites were proposed as Habitat Areas of Particular Concern (HAPC) to be considered for designation by North Pacific Fisheries Management Council. The proposal follows the new HAPC process in which skate nursery sites meet two of the four requirements for consideration by the council, that of function and rarity. Nursery sites function as exceptional reproductive habitat supporting the mass deposition of skate eggs and the successful embryo development and hatching. Mass deposition of egg cases in a single area may serve to swamp predators, allowing higher survival of the species. Site location along the upper slope of undersea canyons may provide optimal oceanographic conditions to support the extended development period required in sub-arctic waters. Skate nursery sites are relatively rare along the upper continental slope of the eastern Bering Sea, with an estimated 25 sites for the eight most abundant skate species. Nearly 30 years of bottom trawl surveys (approximately 12,000 trawls from 20-1200 meters depth) have discovered only 9 nursery sites in the eastern Bering Sea.




| Skate species | Density eggs (km²) | Total area (km²) | Total eggs | YOY survey estimate | Total population estimate | Expected sites |
|---|---|---|---|---|---|---|
| Alaska | 30,554 | 234 | 8,613,243 | 3,552,698 | 119,152,780 | 6 |
| Bering | 6,015 | 99 | 1,117,923 | 286,204 | 12,629,198 | 2 |
| Aleutian | 6,722 | 144 | 357,392 | 605,164 | 7,090,172 | 8 |
| Extrapolations to the remaining 5 abundant EBS skate species | | | | | | |
| Commander | | | *193,320* | 59,338 | 1,790,000 | 2 |
| Whiteblotched | | | *152,280* | 23,332 | 1,410,000 | 2 |
| Whitebrow | | | *154,440* | 100,629 | 1,430,000 | 2 |
| Mud | | | *67,392* | 0 | 624,000 | 1 |
| Roughtail | | | *114,480* | 62,818 | 1,060,000 | 2 |
| | | | | | Total expected nursery sites | 25 |

**Italics indicates expected numbers based on research and survey findings.*

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