COMBINING FIELD OBSERVATIONS AND MODELING APPROACHES TO EXAMINE GREENLAND HALIBUT (*REINHARDTIUS HIPPOGLOSSOIDES*) EARLY LIFE ECOLOGY IN THE SOUTHEASTERN BERING SEA

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Spawning in Greenland halibut occurs along the continental slope and in underwater canyons in the Eastern Bering Sea. It is assumed that these bathymetric features and their associated circulation patterns deliver eggs and larvae to suitable nursery habitats over the continental shelf. However, there have been no directed field studies examining spawning areas and transport of Greenland halibut early life stages in the Bering Sea, nor is it known how large-scale oceanographic forcing modulates specific physical mechanisms of delivery. The present study was undertaken to better define spawning areas of Greenland halibut, to examine development and distribution of eggs and larvae, and to understand the influence of climate variations on interannual patterns of transport, distribution and abundance. Results indicate that eggs occur in Bering and Pribilof Canyons and over the adjacent slope in February and March, suggesting that spawning occurs in these regions. Larvae are present over the slope and outer shelf and shelf in winter and spring and settled juveniles were collected over the shelf in September. Oceanographic modeling approaches (ROMS) indicate depth-discrete variations in transport pathways as well as interannual variability in transport trajectories. Overall, results highlight that large-scale atmospheric and oceanographic forcing modulates the specific physical mechanisms of delivery, ultimately varying the degree of slope-shelf connectivity.

EXAMPLE