

京都府沖合における底曳網によるズワイガニ混獲量とリリース直後の生残率

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By-catch of snow crab *Chionoecetes opilio* by commercial Danish seiners in the water off Kyoto Prefecture and their survival ratio after release at sea

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A large number of snow crabs, *Chionoecetes opilio*, are caught incidentally by Danish seiners in the closed crab fishing seasons (spring and autumn) and released at sea. During the crab fishing season (winter), under-sized males, and immature and mature females carrying orange eggs are also released. The objective of this study is to estimate the amount of by-catch of snow crab and their survival ratio after release. Based on fishermen's logbook data from 2009-2011 in the waters off Kyoto Prefecture, the mean crab by-catch (kg/haul) was estimated at 35-84 kg in winter, and 36-38 kg and 23-36 kg in spring and autumn, respectively. Total by-catch throughout the year was estimated at 216.7 tons, which corresponded to approximately 2.5 times the annual commercial crab landings. The average survival ratio of the crabs after release was estimated at 94-99% in spring and winter (Feb.) seasons, 64-88% in winter (Nov.-Dec.) and 2-9% in the autumn. The relationships between the survival ratio and the surface water temperature showed high negative correlations. The mean total loss of snow crab by discarding mortality was estimated at 40.6 tons. The estimated total amount of loss due to by-catch appears to have decreased compared to two decades ago through efforts such as the establishment of prohibited fishing areas and use of the improved seine net for protection of snow crabs during the closed crab season.

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