

Breeding King Crabs *Paralithodes camtschatica*  
Located in Ocean Environment<sup>1</sup>

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King crabs, *Paralithodes camtschatica* (Tilesius), of the north Pacific follow yearly migration patterns. In late winter they move to waters of less than 40 fath on breeding migrations (Marukawa, 1933; Powell, 1964). The inshore areas of the Kodiak-Afognak Island group provide a suitable environment, wherein molting and breeding occur (Wallace et al., 1949). On the breeding grounds females are selected and grasped by males as described by Powell and Nickerson (1965). A male king crab will release its partner only after she has molted and subsequently bred.

Since king crabs utilize inshore shallows for breeding, it seemed probable that they were simultaneously occupying ocean banks of the Kodiak area.

Portlock Bank and Marmot Flats (Fig. 1), defined by outside isobaths

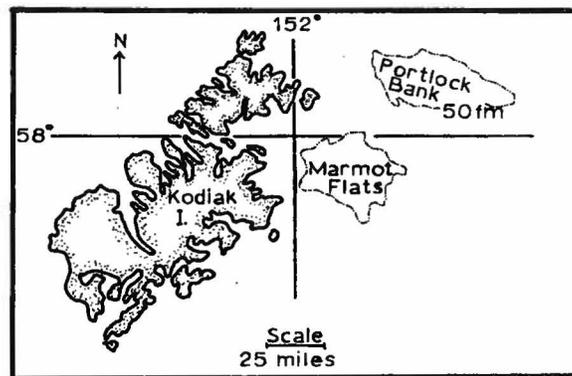


FIG. 1. Geographical locations of Portlock Bank and Marmot Flats.

of 50 fath, are located northeast of Kodiak Island on the edge of the continental shelf. These ocean shallows were the sites of investigative otter trawling operations during April and May of 1966 (McMullen, 1967) and 1967 (J. C. McMullen, 1967, unpublished ADF&G data). Standard 400-mesh eastern otter trawls were fished at 21 and 59 different stations on Portlock Bank and Marmot Flats, respectively.

A total of 3181 king crabs were captured on Portlock Bank in 1966 and 7668 crabs were caught on Marmot Flats the following year.

Nine grasping pairs of king crabs were caught on Portlock Bank. Males continued to grasp their partners after removal from the trawl. A total of

<sup>1</sup>This investigation was conducted with Federal-Aid under the Commercial Fisheries Research and Development Act of 1964 (P.L. 88-309).

2152 females were also caught; 686 had recently undergone ecdysis, and 1466 were approaching ecdysis. Six different tows collected about 75 shed king crab exoskeletons.

Sixteen grasping king crab pairs were caught in 10 different trawls on Marmot Flats. A total of 5837 mature females dominated the catch. The number of recently molted females captured was 264. Nine very new-shell females had spermatophore bands spread around their oviducts. Empty king crab exoskeletons were collected in two tows.

Capture of 25 king crab grasping pairs strongly indicates that king crabs breed on Portlock Bank and Marmot Flats. The presence of new-shell females with spermatophore bands spread in the vicinity of their oviducts also indicates that offshore breeding takes place. The abundance of females in various molt stages during their breeding season and the presence of shed exoskeletons in the trawl collections provide further evidence that king crabs probably molt and breed in an ocean environment.

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