

INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION

Established by Convention between Canada, Japan  
and the United States for the Conservation of the  
Fisheries Resources of the North Pacific Ocean

---

---

ANNUAL REPORT

FOR THE YEAR

1956

---

---

OFFICES:  
209 Wesbrook Building  
University of British Columbia  
Vancouver 8, B. C., Canada

studied in detail in order to establish relationships that can be applied to other more remote areas.

### KING CRAB INVESTIGATION

#### 1956 Field Work:

During the summer of 1956, two cruises were planned with the chartered vessel *Tordenskjold* to the king crab (*Paralithodes camtschatica*) grounds in the eastern Bering Sea. The trips were each of about two weeks duration, to take place in the latter part of July and the latter part of August. The area covered and the station pattern are the same as those employed in 1955. Essentially, it is designed to cover the area which is utilized by the United States and Japanese crab fishery in the eastern Bering Sea.

The field work was undertaken for the purposes of releasing tagged crabs, determining the distribution on the grounds, observing the condition of the crabs with respect to the moulting cycle, and determining the damage to female and undersized crabs as the result of otter trawling.

Approximately 3,000 crabs were tagged with a plastic "spaghetti" tag, and an additional 1,100 were tagged with Peterson disc tags. Preliminary analysis of the returns from the 1954 and 1955 taggings indicate a lower rate of return for the "spaghetti" tags, and comparable distribution of the two types will enable us to determine whether or not the discrepancy is caused by the tag itself.

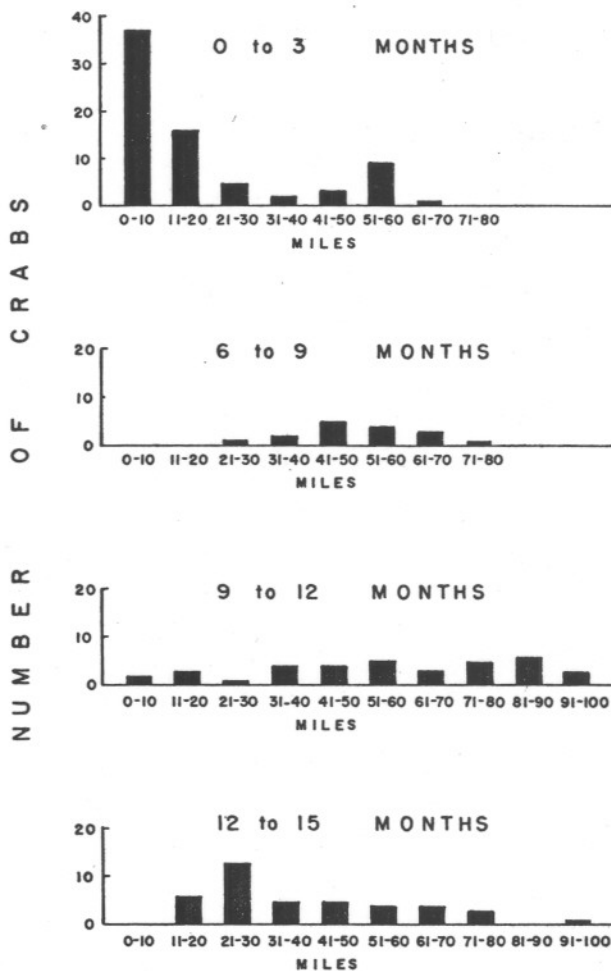


Fig. 9. Migration distances of tagged crabs for various periods of freedom.

For each station the number, size, sex, shell condition and injuries of each crab were noted.

#### Preliminary Analysis of Tagging Results.

As shown in Table 17, tagging studies on king crab were begun in the Bering Sea in 1954 and were continued in 1955 and 1956. In 1954 tagging was done from the commercial vessels with Peterson disc tags, and in 1955 and 1956 from a chartered vessel using chiefly plastic "spaghetti" tags. The Peterson tag could not possibly have remained on the crabs through moulting, but it was believed that the "spaghetti" tags would. Five of the crabs tagged with "spaghetti" tags in 1955 have shown growth, but sufficient data are not available to permit conclusions concerning growth rates.

From the 1954 tagging with Peterson tags, it is evident that all of the male crabs do not shed their shells annually.

A preliminary analysis of the movements of tagged crabs appears to show that there is mixing

of crabs throughout the area now utilized by the fishery. Figure 9 indicates (1) that movements of from 50 to 100 miles are not uncommon and (2) that crabs released on the stations furthest from the fishery (1955 releases recovered in 1956) were well represented in the fishery.

The figures 10-13 showing migration are schematic in nature and are not intended to show actual routes. For more ready understanding, stations from which fewer than three recoveries were made have been omitted. This eliminates much of the data, but the general pattern is clarified and appears essentially the same. This could be expected, since the recovery locations are largely the spots at which the fishery was concentrated. Therefore, until adjustments for the localized nature of the fishery and of the distribution of tag releases have been made, it must be borne in mind that the actual migratory pattern may be quite different than that shown. If migrations to the northwest occurred, little chance of recovery existed because of the modest fishery in that area.

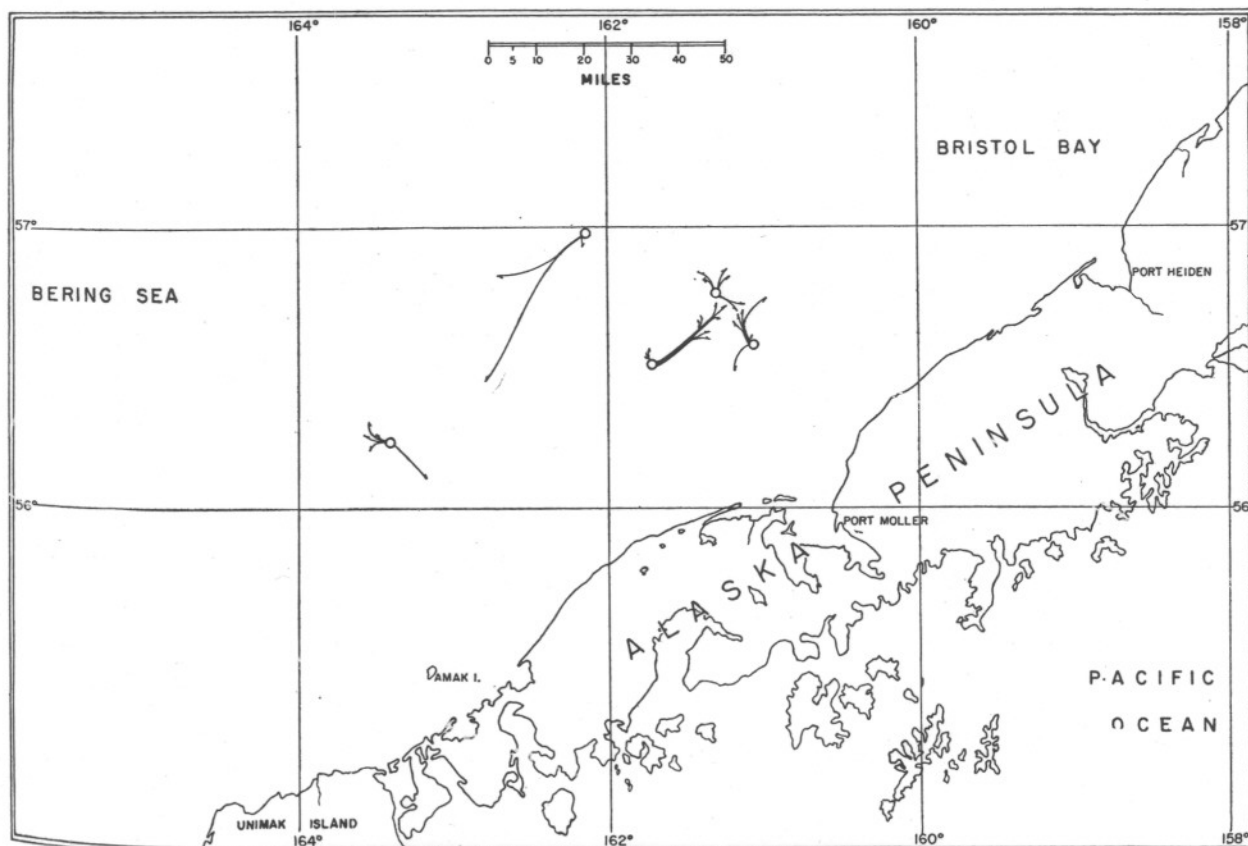


Fig. 10. Migration of tagged king crabs in the Bering Sea; tagged in 1954 and recovered in 1954.

TABLE 17. Bering Sea king crab tagging.

| Year | Number tagged | 1954 recoveries | 1955 recoveries | 1956 recoveries | Total |
|------|---------------|-----------------|-----------------|-----------------|-------|
| 1954 | 1,108         | 44              | 60              | 1               | 105   |
| 1955 | 1,350         |                 | 32              | 53              | 85    |
| 1956 | 4,063         |                 |                 | 54              | 54    |

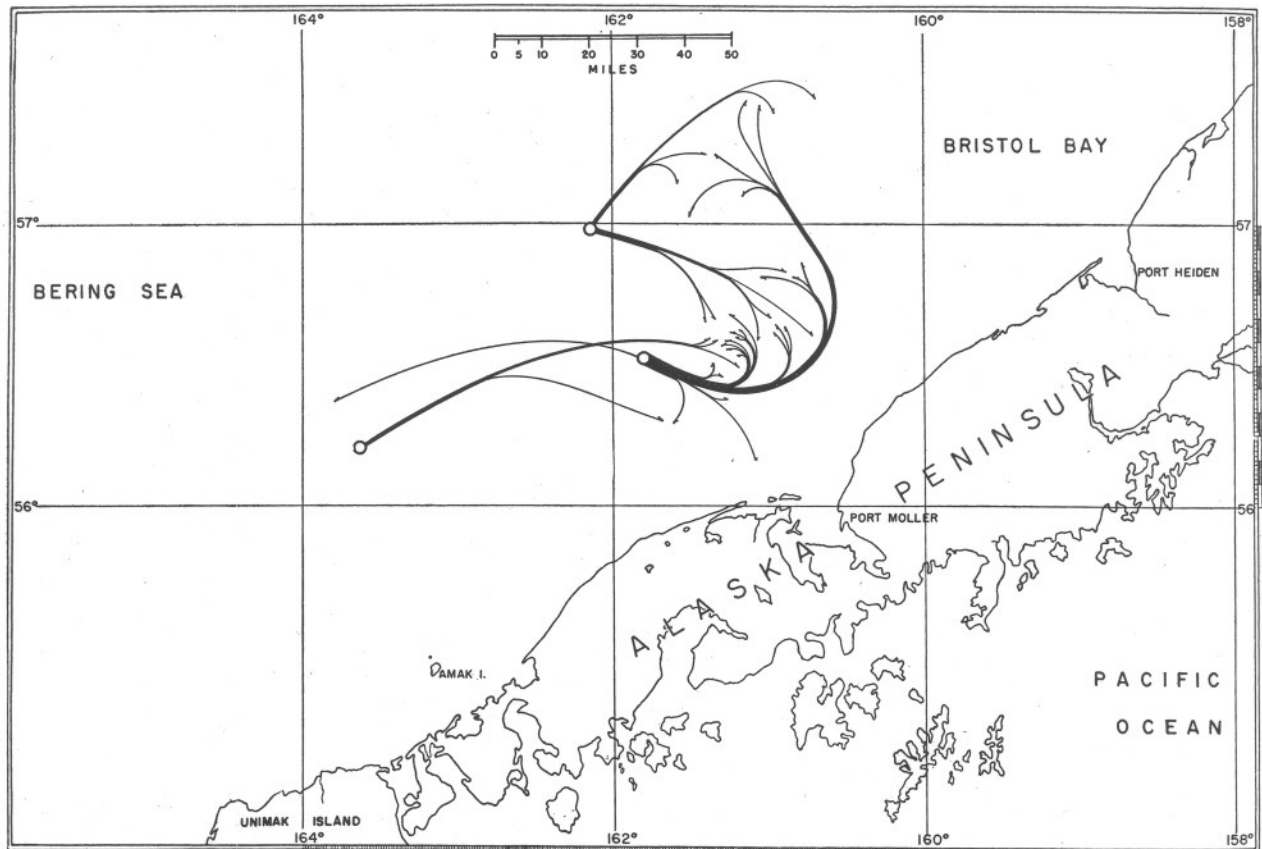


Fig. 11. Migration of tagged king crabs in the Bering Sea; tagged in 1954 and recovered in 1955.

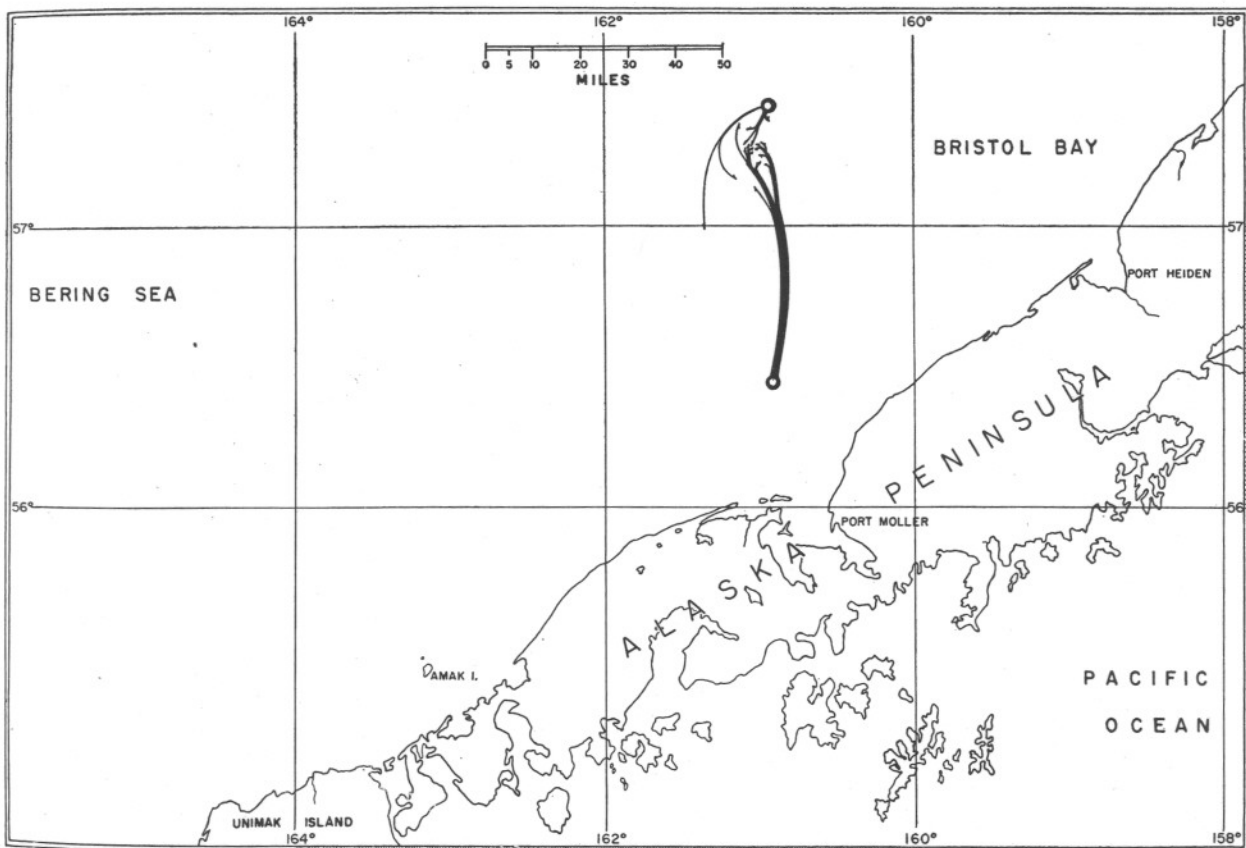


Fig. 12. Migration of tagged king crabs in the Bering Sea; tagged in 1955 and recovered in 1955.

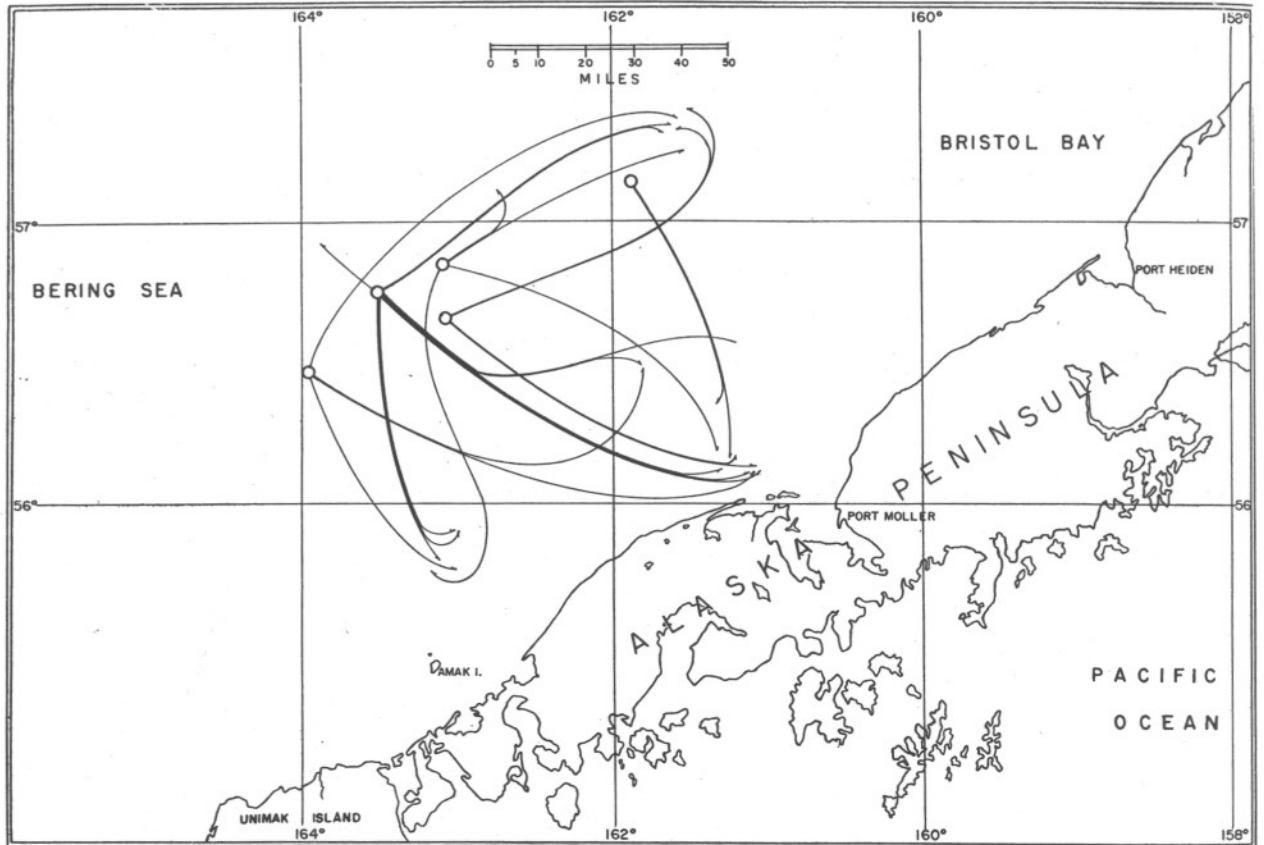


Fig. 13. Migration of tagged king crabs in the Bering Sea; tagged in 1955 and recovered in 1956.