

Gol'tsev, V. N. 1972. Distribution and assessment of numbers of the Pacific walrus in the autumn of 1970. Abstr. Papers 5th All-Union Conf. Studies Mar. Mam., 1972, Pt. I. Sec. I. Pinnipedia, pp. 25-28. ^{*}/

p. 26 In the past, the existing, largely disorganized industry considerably undermined the stock of Pacific walruses. The numbers of this representative of Arctic pinnipeds in the mid 50's of our century were estimated at 38-40 thousand head (Fay, 1957; Nikulin, 1958). G. A. Fedoseev (1962), who conducted an assessment in 1960 by the method of aerial photography of the hauling grounds, determined that the number of population was 50 thousand head.

With the goal of restoration of the status, the state-operated walrus industry of the U.S.S.R. was closed, and cropping for satisfaction only of the needs of the native population of Chukotka was limited in 1962 to 1 thousand head.

In recent years, oral communication from hunters', published notes (Chugunkov, 1970, 1972), and personal observations have indicated an expansion of the range of the Pacific walrus. There have been recorded occurrences of small groups in Karagin Bay, where earlier they dwelled continually (Suborov, 1914), and there has been development of a hauling ground on Verkhoturov Island; some have approached the Commander Islands, and a single animal was met on the ice in the Okhotsk Sea. Some coastal hauling grounds in Chukotka, which were considered to be extinct and had not been visited by walruses for many years have been placed in regular operation again. The number of walruses coming onto them year after year is growing. These facts indirectly indicate growth in numbers of the population.

Our assessment of the walrus population was undertaken in the period 13 September to 19 October 1970 by IL-14 aircraft, equipped with an aerial camera. Tabulation of the

p.27 animals on the shore hauling grounds and on large ice haulouts was done from the photographs. Small hauled out herds and animals found in the water were counted visually. In a preliminary survey of the coast of the Chukotsk Peninsula and the western part of the Chukchi Sea, we determined that there were four functional hauling grounds on shore: Rudder in the Gulf of Anadyr, Arakamchechen and Dezhnev in Bering Strait, and Inchoun in the Chukchi Sea. Ice haulouts of walruses were located from southwestern Wrangell Island down to Cape Billings on grayish-white and white ice with a compactness of from 2 to 10 BaMMOB .

Gradually, with the formation of young ice, the borders were drawn in on the east and accordingly on the west, with merging of haulouts of walruses along the edge.

The area occupied by haulouts changed considerably: on 25 September it comprised $15,000 \text{ km}^2$, and on 15 October $6,800 \text{ km}^2$. The density of walruses per square km also continually declined (25 Sept. - $5.9 \text{ walruses/km}^2$; 17 Oct. - $2.7 \text{ walruses/km}^2$). This was combined with the beginning, in the first days of October, of the migration of walruses southeastward to Bering Strait. Along the way, the walruses rested near the coast on the ice that they met, and where there was no ice, they came ashore.

In this period, the number of walruses on the coastal haulouts suddenly increased. In the middle of September on all the hauling grounds there were 11,500 head, but on 18 October on only three hauling grounds (excluding Rudder) 41,700 walruses were photographed.

The total number of the population of the Pacific walrus constitutes 101,000 head. Of these 62% were registered photographically and the rest visually.

p.28 In as much as the data on reproductive capacity of the walrus is very inconsistent (Fay, 1957; Burns, 1965; Brooks,

Krylov, 1968); we used a median estimate of production on the population curve (Fedoseev, Gol'tsev, 1969).

In this case, in the contemporary population of walruses, the number of calves comprises 15-17%, and the coefficient of natural mortality is 8 - 10%. With calculation on this basis, the annual increment amounts to 5 - 6%, i. e. 5 - 6,000 head.

The limit on cropping of walruses by the native population of Chokotke at this time can be increased to 1,500 head. Then the general harvest from the population will comprise 4.2 thousand (1,500 taken in Alaska, 1,500 in Soviet waters, and 40% hunting loss). The annual growth of the population will amount to 800 - 1,800 head.

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