PREDATION ON RINGED SEALS IN THE WESTERN BEAUFORT SEA

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Polar bears (Ursus maritimus) and arctic foxes (Alopex lagopus) are the principal predators of ringed seals (Phoca hispida) and may exert considerable influence on seal populations. Arctic foxes prey only on ringed seal pups in subnivean birth lairs, whereas the bears also prey on older seals in and out of lairs. Rates of predation by foxes can be measured by random surveys of seal lairs, using trained dogs, but predation rates by bears appear to be poorly estimated by this method.

We used trained dogs to locate 203 lairs, including 20 pupping lairs, in the western Beaufort Sea in 1982 to 1987. Foxes entered 14.4% of the lairs and killed pups in 4 (20%) of the birth lairs. Those rates agree well with data from other parts of the Arctic and, we believe, are accurate estimates of the actual rates in the Alaskan Beaufort Sea.

Polar bears entered only 3 (1.5%) of 196 lairs located during random searches in 1982 to 1987. No kill was made at that site. While tracking bears from low-flying aircraft near the areas surveyed with the dogs, we observed indications of much higher rates of kills at lairs.

We have begun to quantify the take of ringed seals by radio-collared bears in relation to the densities of seal lairs and breathing holes, using trained dogs to locate those structures within 2 km of tracks paralleling the paths of the bears. In April 1987, along 51.5 km of polar bear tracks in the western Beaufort Sea, polar bears attempted without success to capture seals at 8/20 (40%) breathing holes, 3/9 (33%) resting lairs, and 2/2 (100%) pupping lairs located by the dogs. Three adult females averaged one attempt every 2.68 km, and three adult males averaged one attempt every 6.84 km.

We located an additional 145 seal structures during random surveys with the dogs and while tracking bears from low-flying aircraft in April and May 1987. In all, we examined 29 breathing holes, 16 resting lairs, and 12 birth lairs in which bears attempted to capture seals. Seals were killed at 10.3% of those breathing holes, 6.2% of the resting lairs, and 75.0% of the birth lairs.

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