

panel buildings, two family cabins, and a laundry and wash house now augment the living and research space formerly consisting of two Jamesway huts and the many tents which still serve as the primary sleeping quarters.

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Polar Bear Studies During 1966

Polar bear migratory habits and population dynamics are relatively unknown and to learn more about these aspects, the Arctic Institute of North America (AINA) is supporting a long-range, research project. With funds from the Office of Naval Research the Institute sent Dr. Martin W. Schein to the Arctic Research Laboratory at Point Barrow during April 1965 and he returned to ARL with Dr. Vagn Flyger in March 1966.

With the help of the able pilots at the Arctic Research Laboratory and their small ski equipped airplanes, they developed the following technique for capturing bears. When weather permitted they flew out over the ice in the general area north of Point Barrow with Cessna 180 airplanes. While one airplane flew at an elevation of about 100 feet and searched for polar bear tracks, the other airplane, containing Flyger and Schein, flew slightly behind and at an altitude of about 500 feet. Upon finding polar bear tracks, the planes followed them until they came upon the bear. The plane containing the biologists went on ahead about two or three miles in the direction the bear was travelling and deposited Flyger and Schein on the ice where they hid behind a pressure ridge. The plane then took off and the two planes drove the bear to the waiting biologists. When the bear got to within approximately 50 yards, it was shot with an automatic projectile syringe from a rifle. Syringes contained the drug succinylcholine chloride which paralyzed the bear within a few minutes. While the bears were immobile, they were examined, measured, and marked with ear tags and dye so that they could be recognized later if seen.

Five bears were captured but of these four died because of a combination of overdoses of the drug and circumstances connected with chasing the bear with aircraft. Much, however, was learned from these animals which made it possible to be more successful in capturing and marking bears in Svalbard during August 1966.

The Norsk Polarinstittutt invited Dr. Flyger, supported by AINA, and Dr. Albert W. Erickson, supported by the New York Zoological Society, to accompany them on a polar bear capturing expedition to Svalbard during the summer of 1966. This expedition under the direction of Mr. Thor Larsen from the University of Oslo, operating in the pack ice near Kong Karls Land in a seal hunting vessel was able to capture four bears, mark them, and release them alive. This time a different drug was used: M-99, a synthetic opiate. Working from a ship was much easier than with aircraft because it was possible to observe the bear closely before shooting it with a projectile syringe, thus lessening the chance of an overdose.

Plans are now under way for a large scale program to mark polar bears over the entire Arctic. In any event it is hoped that the Arctic Institute of North America and the Norsk Polarinstittutt will again work together to capture bears in the Svalbard region during 1967 and 1968.

The feasibility of studying bear movements with radio transmitter-receivers is being explored with the National Aeronautics and Space Agency (NASA), Telemetric methods which have been used on other animals including brown and black bears are not applicable to arctic conditions. Recently developments in satellite technology have raised the possibility that perhaps polar bears can be studied by employing a Nimbus B satellite. Such a satellite would pick up messages (giving location, heart-beat, respiration rate, internal temperature, and external temperature) from a transmitter-receiver on a collar around the neck of the bear and relay them to a tracking station on earth. The practicability of this is being studied at present with NASA.

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