

Panel:

Øystein Størkersen, NINA

Odd Erling Smuk, NRL

Hans Tømmervik, Russian - Norwegian Environmental Commission

Eldar Gaare, NINA

Bror Saitton, Swedish Saami Association

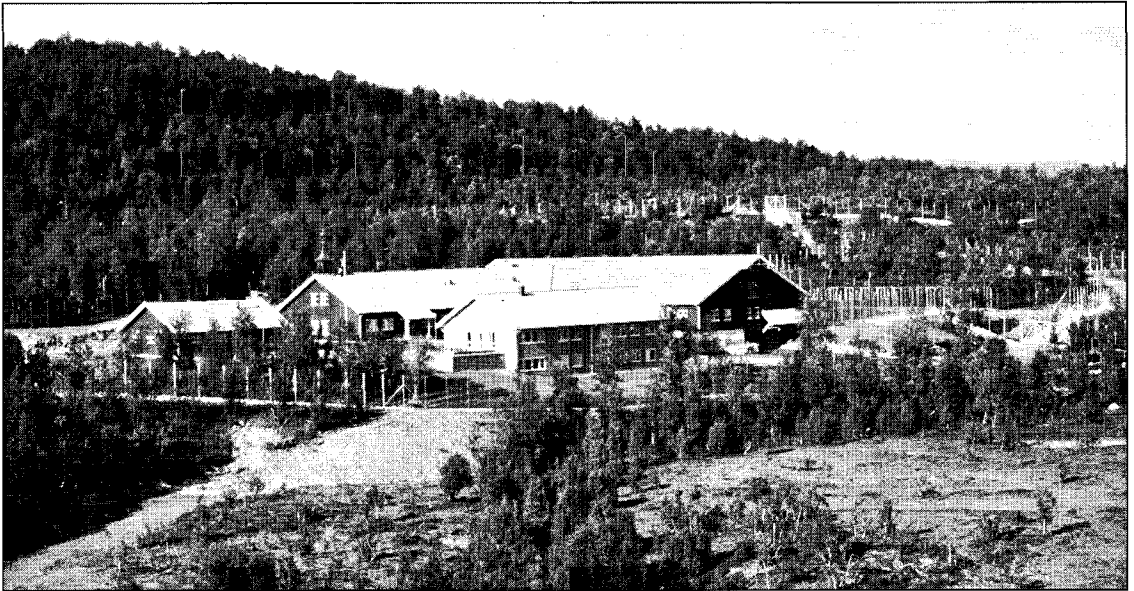
Timo Helle, The Research Institute of Northern Finland

Nikita Vronskii, The Scientific Academy of Russia

3. Presentation of the Centre of Veterinary Medicine in Tromsø and the new facilities of the Department of Arctic Biology, University of Tromsø.

4. Poster session.

Department of Arctic Biology - new facilities



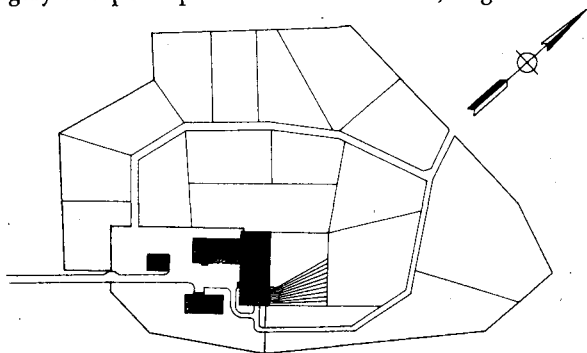
The Department of Arctic Biology in the University of Tromsø is devoted to the study of polar birds and mammals and, in particular, to research in physiological adaptation to life at high latitudes in these species. The principal aim of the work carried out at the Department is to determine animals' basic requirements for growth and reproduction and to explore the homeostatic mechanisms which enable them to survive the apparent rigours of life at high latitudes, including long periods of potential undernutrition and intense cold. Such knowledge is fundamental for predicting how animals will respond to changes in their environment, be those changes of anthropogenic or of natural origin. Information is collected through experimental studies conducted under controlled conditions in the laboratory on a variety of species kept in captivity - including Arctic fox, muskoxen, reindeer, Svalbard ptarmigan and several species of seals - and on field studies on whales, seals and Svalbard reindeer.

New facilities for the Department of Arctic Biology were completed this spring and were officially opened by His Majesty King Harald V on the 5th of June 1993. These facilities, situated in woods only a short walk from the main University campus at Breivika, comprise 2 600 m² of offices, laboratories, workshops and temperature controlled animalrooms designed to hold any Arctic animal from a lemming

to a polar bear. In addition, there are 9 acres of enclosures outdoors built with 3 m high fences to a very high standard (picture). The new facilities, which cost NOK 35 million (US\$ 5 million), have been financed jointly by the Norwegian Ministry of Culture, Education and Research, the Ministry of Agriculture, the Ministry of the Fisheries and the Ministry of the Environment, reflecting the fact that besides basic research and teaching, the Department of Arctic Biology provides information and management advice on issues relating to reindeer husbandry, sealing, whaling and management of fauna in Svalbard.

The new buildings provide excellent facilities for study of Arctic ungulates. In addition to the main paddocks there are special rooms for autopsy, surgery and post-operative care of animals, larger rooms with light- and temperature-control and slatted floors for keeping animals indoors, special semi-indoor paddocks with heated floors (melting snow) in which small groups of animals which need to be caught and handled frequently can be kept.

The Department of Arctic Biology encourages international collaboration in research which will put these new facilities to best use and which will maintain the position of the Department as a world centre for research on Arctic ungulates.



Dissertation

Carl Johan Petersson defended his AgrD thesis *Reindeer herd production- a modelling approach*, at the Swedish University of Agricultural Sciences, Uppsala, Sweden, on December 17, 1993.

He was born in 1950 and grew up in a small village by the coast in the northern part of the Gulf of Bothnia in Sweden. He studied computer sciences for one year at The University of Stockholm, and agronomy, also for one year, at an Agricultural School in 1974 and 1975. In 1982, he graduated as Master of Agronomy at The Swedish University of Agricultural Sciences (SLU).

He joined the Department of Animal Breeding and Genetics, SLU, in 1982, and upto 1985, he worked at the Cattle and Sheep division. During this period he published several papers dealing with lamb survival. He also developed a databank system for the university sheep research herd.

Since 1985 he is working in a reindeer project at the same department. This project deals with

reindeer herd production, the aim of which is to develop a dynamic simulation model for reindeer herd, that could be used to optimize the demographic structure with respect to the production capacity of the herd.

During the course of his engagement in reindeer research, he has planned, constructed and applied a recording and production scheme into a tagged herd in Tännäs Sami village located in the southern part of the reindeer area in Sweden. In the thesis, two publications were based on performance data from these recordings.

Abstract

The thesis is based on five publications dealing with matters related to reindeer herd production. In the first publication, (*A comprehensive transition matrix model for projecting production and resource consumption in reindeer herds*)¹ a deterministic herd model was developed for projecting the dynamic changes in reindeer herd size and structure under defined harvest policies. The model distinguishes between females, males and castrates up to an optional number of age-classes. Calves are further classified based