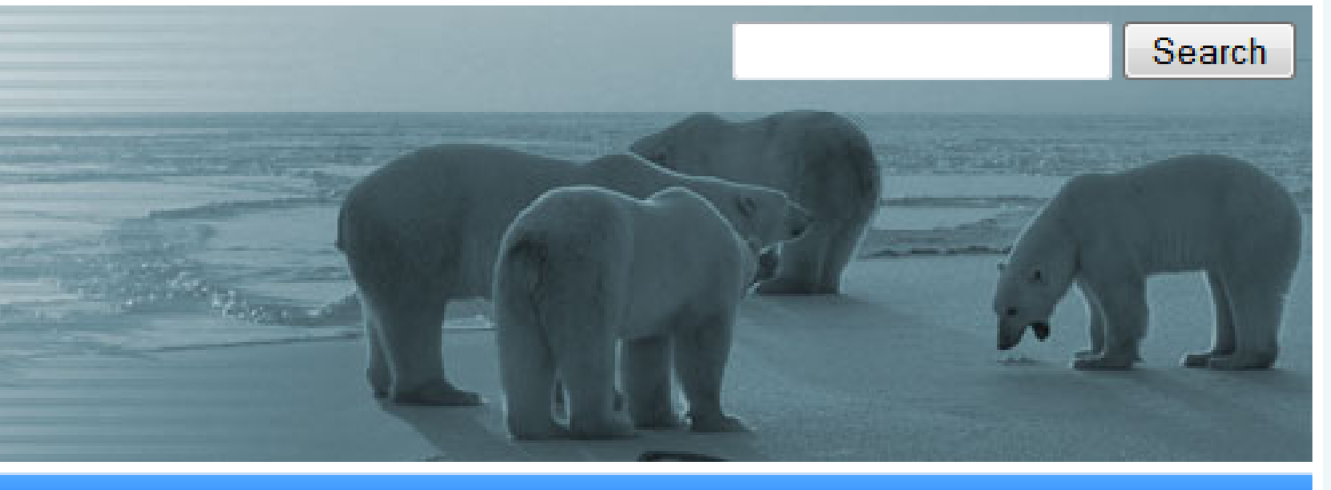

IUCN/Polar Bear Specialist Group 1st meeting

In January 1968, the IUCN organized the first official meeting of the Polar Bear Group, formed under the aegis of the IUCN Survival Service Commission (today Species Survival Commission). There were no proceedings published after the meeting. The reason for this are given in the introduction to the proceedings from the 2nd meeting in 1970: *"Some of the subjects discussed were considered to be confidential and no proceedings were published"*. However, a comprehensive report on the meeting was printed in the IUCN Bulletin of April/June 1968. Below you will find a full version of this report:

Concern for the future welfare of the polar bear brought together a small group of leading Arctic scientists at IUCN headquarters, Morges, Switzerland, during the last three days of January 1968. IUCN had earlier accepted responsibility for acting as the coordinating agency among Arctic nations which first met at Fairbanks, Alaska, in September 1965 to exchange information on polar bear conservation problems. The Union considered it important to call a meeting at this time to review present research activities, to discuss research needs and priorities, and to consider how to achieve more effective scientific collaboration on a continuing basis. Because polar bears share a vast common habitat and may move freely from nation to nation on the slowly revolving Arctic ice pack, the future of the species is a matter of international concern. The polar bear is one of the species listed in IUCN's Red Data Book of the world's rare and endangered animals.

Scientists from the circumpolar nations of Norway, Canada, the Soviet Union, the United States and Denmark (Greenland) were invited to attend the meeting. While IUCN was aware that many organizations and individual scientists and conservationists throughout the world were deeply interested in the future of this species, it was decided that more effective results would be achieved by inviting only a limited number of scientists actively involved in polar bear research to participate in a closed working session, as distinct from an open conference. Scientists at the meeting were: T. Larsen and M. Norderhaug from Norway; A.H. Macpherson (who acted as rapporteur) and C.J. Jonkel from Canada; S.M. Uspensky and A.G. Bannikov from the U.S.S.R.; and J.W. Lentfer and J.W. Brooks from the U.S.A. The Danish scientist, C. Vibe, was unfortunately unable to attend. The Chair was to have been taken by the eminent British ecologist, F. Fraser Darling, but at the last moment he was prevented by illness from attending. His place was taken by J.S. Tener, Deputy Director of the Canadian Wildlife Service. Also attending were R.A. Cooley from the U.S.A., who acted as secretary; and C.W. Holloway and N.M. Simon of the IUCN staff at Morges.

In the official opening remarks presented on IUCN's behalf by D.J. Kuenen, Vice-President of the Union, a statement from F. Fraser Darling to the participants was read which set the tone of the meeting:

Our meeting is an exceptionally important one, primarily for our own human obligation to conserve this unique species, the polar bear; secondly, the International Union has taken the initiative very proper to its standing of calling a committee meeting of scientists from the interested countries to talk over their work in a way which can lead ultimately to the end we all so earnestly desire, that of effective conservation. I feel that to some extent national identities will become less sharp as the meeting progresses, because common experience of research in a harsh environment establishes its own brotherhood.

Perhaps we are fortunate in that only five nations are concerned, although you will understand that many others are deeply anxious about the Arctic fauna. It is easier for us to get talking with only five nations, and because the men here are those who have worked on the polar bear, the success of this meeting will justify the initiative of the Union and may lead to further ventures of similar kind for other creatures in other parts of the world. This is a working party of men who know; and in the spirit of science you will give and take.

The meeting proved to be a valuable experiment in international cooperation. The atmosphere was relaxed, participants were frank, and a wide variety of scientific data was freely exchanged. Significant agreements were reached on standardizing research procedures; setting priorities to meet critical research needs; assigning certain areas of research to individual scientists from the five nations; and establishing methods for continued contact and exchange of scientific information and, to a limited extent, exchange of scientific personnel. The polar bear was of concern to the scientists not only in its own right but also as an element of the delicate Arctic biota and of the high latitude ecosystem. This broad approach to the problem prevailed throughout the discussions. Consideration was also given to the polar bear as a natural resource and its cultural and economic values to indigenous peoples.

Research activities

Present and future research programs of each of the nations were reviewed and discussed during the first two days of the meeting. Some of the major findings are summarized below.

U.S.S.R.

The objectives of Soviet research were described by Professor Bannikov in a working paper *On the Conservation of the Polar Bear*. Soviet scientists believe that polar bear stocks have been greatly reduced since the 1930's, and as a result the government has prohibited all hunting of the polar bear since 1956. The only harvest is a few cubs taken for zoos. Other Arctic fauna are also protected more than formerly, and disadvantaged Eskimos are compensated by being paid higher prices for other furs and through social welfare measures. Wrangel Island, an important denning area for polar bears, is being considered for a national park which would give bears there permanent protection. Speaking on the need for mutual efforts by all countries to preserve the polar bears from extinction, Professor Bannikov concluded, "It is high time to raise a question about the protection of the Arctic ecosystem as a whole, as a specific complex which functions in extreme conditions and can be easily destroyed by man". The polar bear, he said, must be considered along with the broader problem of the protection of the entire Arctic environment.

Dr. Uspensky reported on his studies, particularly on the abundance of polar bears on sea-ice and at denning areas in the Soviet Arctic. Data on abundance and distribution are obtained by counting bears from aircraft surveying ice conditions, and through the counting of dens in the spring when females are emerging with new cubs. Uspensky's method of counting polar bears, which he has developed to a high degree during the last decade, was of great interest to scientists from other nations. Other research by Soviet scientists discussed by Dr. Uspensky included craniometric work which shows a marked uniformity in skull measurements throughout the Soviet Arctic; and parasitological studies which indicate that trichinosis in polar bear is of a different type from that identified in other mammals. In the future, Soviet scientists plan to undertake a tagging program to determine migratory movements, and to continue existing studies on den surveys. Interest was also shown in cooperation with scientists of other nations in studies on age determination, morphological and serological taxonomy, ecology and parasitology.

Canada

Four provinces and the Yukon and Northwest Territories have management responsibilities for polar bears in Canada. More bears are taken each year in Canada than elsewhere in the Arctic and most of this harvest occurs in the Northwest Territories where only Eskimos are allowed to hunt them. The federal Canadian Wildlife Service is connected primarily with research rather than management. Dr. Macpherson described the federal-provincial-territorial committee established to bring together management and research on polar bears. In 1967, the Northwest Territories adopted a quota system in an effort to reduce the take of bears by each Eskimo village. The intention is to reduce the harvest to 386 animals, or approximately one hundred below the average of the past 10 years. Enforcement of the quota is difficult and regulations are made effective mainly through persuasion. Trophy hunting is completely prohibited in Canada but commercial interests are attempting to have this restriction modified. In recent years the use of mechanized snowmobiles by Eskimos to hunt polar bears has greatly increased the pressure on the resource in certain regions. Human populations are increasing in the Canadian Arctic and this will bring additional pressures on the wildlife resources. Use of set guns is strictly prohibited throughout Canada.

Dr. Jonkel of the Canadian Wildlife Service reported on current research dealing with the life history, biology and ecology of polar bears in Canada. Basic biological data are being sought to guide management agencies in maintaining the present number and distribution of bears while still allowing an annual kill by Eskimo hunters. To this end the Service has undertaken to capture and mark bears in the various Arctic regions of Canada; to collect skeletal, reproductive, and tissue specimens from bears killed by Eskimos; to experiment with census techniques; and to coordinate polar bear research with Canadian and international agencies. Annual movements, reproductive rates, and latitudinal differences in polar bear populations are receiving special emphasis. The provinces of Ontario, Manitoba and Quebec are cooperating with the Canadian Wildlife Service in this research. A technique for capturing polar bear by foot snare has been developed and used for tagging and marking animals. Twenty bears were tagged by the end of 1967, and experimental work is underway on radio tracking. Dr. Jonkel reviewed the important taxonomic work of T. H. Manning, conducted under contract with the Canadian Wildlife Service, which suggest racial differences in bears from Greenland, Canada, and Alaska. Scientists from the other nations indicated interest in this work and in cooperating to provide Manning with skulls from other Arctic regions for analysis. Dr. Jonkel also noted that a major paper by C. R. Harrington, on polar bear denning in Canada was soon to be published. Canada plans to concentrate future research in areas where bears may be in danger of extinction. Present work will be continued, and an evaluation of potential parks or reserves will be undertaken.

Norway

All of Norway's bears are in the vicinity of the Spitzbergen Islands. Kong Karl's Land, the most easterly of the islands, is a known denning area and was established as a polar bear reserve in 1939. Mr. Norderhaug pointed out that the average annual harvest during the last few years has been about three hundred bears, most of which are taken by professional hunters and others using set guns. The harvest of bears by sealers has declined in the last few years owing to a reduction in sealing effort in these waters. About forty bears a year are taken by trophy hunters in the summer from boats cruising along the edge of the ice pack. Trophy hunters may take only one bear a year and are not permitted to take cubs or sows with cubs, while professional hunters, meteorological crews and other wintering parties are not restricted by regulation. According to Norderhaug, work is currently being done on extensive revision of regulatory policies aimed at better protection of the Arctic fauna in the Spitzbergen Islands. Mr. Larsen reported on the polar bear research activities of Norwegian scientists. Summer expeditions were carried out in 1966 and 1967. Techniques were developed to capture and mark bears by working from a small vessel along the edge of the ice pack. Fifty-five bears had been marked by the end of 1967 in a program in which American biologists participated. All were captured with syringe guns using tranquillizing drugs (primarily Sernylan or M99). Comparative studies of blood serum collected from bears in Spitzbergen, Canada and Alaska have been undertaken by Mr. Larsen, using an electrophoresis technique, and preliminary results indicate possible racial differences between Alaska and Spitzbergen bears. This work will be continued with more refined tests being employed. Scientists from the other nations agreed to provide additional blood samples from across the Arctic. Other work includes physiological research by N. Øritsland on thermoregulating mechanisms in bears, the physiological effects of immobilizing drugs, and studies by O. Lønø on hunting methods and statistics, reproduction, food, age determination, and radio activity. Most of the research is directed towards improving management regulations.

Norwegian scientists plan to continue their efforts in the summer of 1968, and to establish a wintering party on Edge Island to conduct additional ecological and physiological investigations, including den counts and abundance surveys by dog team. Tagging efforts will continue, and additional experimental work with radio telemetry may be undertaken, perhaps with the cooperation of scientists from Denmark and the U.S.S.R.

Denmark

Although Dr. C. Vibe was unable to attend, copies of his working paper were distributed and discussed. The killing of polar bears in Greenland is prohibited except by residents. Since the majority of the population of Greenland is Eskimo, this policy has had almost the identical effect as that of Canada in keeping the resource predominantly for aboriginal use. Motor boat hunting in certain areas is outlawed, and mothers and cubs are protected in important denning areas. Pressure on the polar bear resource other than to meet local needs has not been great, and the total harvest is estimated to be only about one hundred a year. Denmark recognizes, however, that this may not be true in the years immediately ahead, and additional regulations undoubtedly will be necessary.

Very little research on the polar bear has been carried out in Greenland in the last few years. There is no indication that there will be any change in the immediate future. This is apparently the result of budgetary limitations and the urgency of other problems requiring research. At the close of the meeting the working group passed a resolution requesting IUCN to inform the Government of Denmark of its regrets at the absence of a Danish participant. The resolution also pointed out the importance of obtaining further knowledge of the polar bear in Greenland and pledged the cooperation of all members to this end.

U.S.A.

A unique situation exists in Alaska with respect to the harvesting of polar bear. Until 1940 the main harvest was by Eskimos for subsistence purposes, much as occurs in Greenland and Canada today. During the last two decades, however, almost a complete shift has occurred from Eskimo hunting by dog teams to white trophy hunters using aircraft to search out and kill bears on the offshore ice pack. Most of the hunters are affluent non-resident sportsmen who are able to spend several thousand dollars for the hunt.

Regulation of hunting, which is under the jurisdiction of the Alaska Government, has been made increasingly restrictive during recent years. Each trophy hunter is now limited to one polar bear every four years. There is a summer close season, and no cubs or females with cubs can be taken throughout the year. Moreover, no guide can service more than six hunters a year. Since the total number of guides is controlled by rigorous examinations conducted by the state government, this tends to reduce or at least set a limit on the size of the annual harvests by trophy hunters. Harvests have fluctuated widely from year to year but have averaged around 300 in recent years. The annual income to Alaska from this kind of hunting amounts to about a quarter of a million dollars and this tends to make additional restrictions on hunting difficult, even though public opinion in the U.S.A. may favor more stringent conservation measures.

Most of the research on the polar bear in Alaska is being conducted by the state government under the direction of J. Lentfer. Priority is given to investigating abundance and migrations of polar bear, discreteness of local populations, and productivity in relation to harvests. Lentfer has developed highly successful techniques for immobilizing and marking polar bears. During the last two years approximately one hundred animals have been tagged and released in connection with migration studies. Mr. Lentfer reported on experimental flights over sea-ice using various census survey techniques to determine abundance and distribution. He also discussed age determination studies based on analysis of tooth cementum layering; parasitological investigations; and other phases of harvest assessment aimed at improving management decisions. Beginning in 1968, the U.S. Fish and Wildlife Service will initiate a cooperative research program with the state government. According to Mr. Brooks, the Service will undertake experimental telemetry work employing newly designed transponding transmitters having a wide range for tracking and a long battery life. It is expected that several of these devices will be attached to bears in the spring of 1968 in an effort to improve knowledge of circumpolar migrations. The federal agency also plans to develop and test various aerial census techniques, including the use of remote sensing equipment, to determine more precisely the number of polar bears in Alaska waters and their movements. The state agency will continue its present programs, as well as cooperative studies with other countries.

Research agreements

While much valuable research is being conducted on the polar bear, members of the working committee agreed that unnecessary duplication of research existed in many areas; that standardized research methods should be developed where possible so that data from the various countries will be comparable; that certain important areas of research were being wholly neglected; that priorities should be established to focus scientific research more directly on the critical problems relating to international conservation of the species; and that closer coordination was needed in order to increase the effectiveness of these research efforts.

Top on the list of research priorities is the urgent need for more precise knowledge about the size of the world's polar bear population, the regional distribution, and the dynamics of reproduction. Wide disagreement exists among polar bear scientists as to the actual status of the species, and this has led to international controversy over issues of national conservation policy. It was agreed that concerted international aerial surveys of the Polar Basin must await development of more sophisticated techniques, such as heat-sensors on fast aircraft, but meanwhile each nation should continue its present census programs and report results of experimental techniques to other nations to avoid duplication of effort. The aerial census work in Alaska, the denning studies in the Soviet Union, and the age, sex and reproductive studies in Canada, Norway and Alaska were singled out as especially important areas of research, and agreement was reached to exchange specimens, materials and raw data among the nations. At the suggestion of Dr. Uspensky, investigators agreed to attempt to locate and evaluate denning areas within their national boundaries and make these findings available to other workers.

High priority was also given to the study of migration. Without precise information on the movements and habits of polar bear, it is impossible to determine the extent to which it is truly an international circumpolar species. Do all bears move in the same clockwise pattern throughout the Arctic, or are these discrete circumpolar populations? The scientists agreed to conduct a cooperative capturing and marking program on a standardized basis so that the origin of all tagged bears could be determined by workers in all parts of the Arctic. Uniform tags, tattoos and serial numbers were designated, and each nation agreed to publicize the marking program among its nationals, to return each other's tags with all available data, and to record the information on standard punch card forms in three languages for use by all scientists. It was also agreed that taxonomic research to determine possible racial differences by skull comparisons should be the joint responsibility of scientists in Canada and the U.S.S.R., who have done this work previously, and that all other investigators will make skulls available to them. Related studies of food habits, behaviour, physiology, diseases and parasites should continue with full exchange of raw data among cooperating scientists.

A far-reaching outcome of the meeting was the formation of a permanent international committee of scientists engaged in polar bear research. The delegates at the meeting agreed there was need for continuing scientific communication and collaboration, and they voted unanimously to request the establishment of such an organization under IUCN's Survival Service Commission. The proposal was subsequently approved by the SSC. The principal objective of the newly established "Polar Bear Group" is to expedite the collection of scientific data on the animal as a basis for future management and conservation. It will attempt to ascertain the scientific problems and geographical regions in which international research is desirable; determine research priorities and stimulate national and international interest in polar bear research; as well as serve as a general forum for exchange of ideas and information on this and related high Arctic fauna.

The group is composed of two members nominated by responsible federal ministries in the respective countries. However, the members act as scientists at meetings rather than as officials of their respective governments. Dr. S. M. Uspensky of the Soviet Union was unanimously elected first chairman of the group. A periodic newsletter will be published and distributed to a broad audience. The group will attempt to meet and discuss research progress at yearly intervals. Should scientific evidence indicate the need for concerted international regulations to protect the animal, the group can request the IUCN Executive Board to organize a high level international conference to consider conservation and management measures.

Action in calling this special meeting has not only advanced conservation of the species but has helped create a broader understanding of the Arctic environment. It may also serve as a new approach to ecological situations elsewhere in the world which can be satisfactorily resolved only through international scientific cooperation.