

10 ► **Higher tree line**

The tree line climbs higher year by year. I believe it increases more year by year, and the forest down here gets thicker.

We observe new birds and insects, which do not have a name in Sámi. Parasites that normally die during winter, survive. My neighbour lost 70 reindeers this way.

We have seen years with poor grazing before, but from the mid-1980s there were several years of inadequate grazing, something which happened again in the beginning of the 1990s, when we lost so much of the stock.

Since the start of the 1990s, reindeer owners have pretty much agreed that what we see now is completely unnatural. There are no long periods of frost anymore. This also makes the big migration of the reindeer in spring more difficult. The numbers of losses during this period are increasing.

In the beginning the weather changes caused enormous problems for us. We were thinking about how we should survive in this business. Where would we move? It causes instability in our lifestyle. But we are adjusting by moving the reindeer earlier, and no longer keep to the old traditions of when this is to be done. We have taught our reindeer to eat pellets despite how expensive they are. After all, we have ascertained that the climate changes are inevitable. They are already upon us.

Now a research project, Ealat, a cooperation between several organisations and research institutes, amongst them the World Reindeer Herders Union, is trying to map out how climate change will affect reindeer herding.

Maybe we have to turn the whole cycle around in the future? If it rains when it is not supposed to rain we might have to stay by the coast during spring and summer instead of on the plains.

I have three sons. One of them will hopefully keep to the family tradition of reindeer herding. But it is no longer a good life. It is an insecure future.

Olav Mathis Eira is a Climate Witness who provided his testimonial to the WWF Climate Witness Programme. His testimonial and that of other Climate Witnesses from around the world can be found at: www.panda.org/climatewitness



CREDIT: Maria Gavrilov

Russian ice refuge for ivory gulls

An extensive survey of the Russian Arctic identified a small island surrounded by heavy sea ice as providing a sanctuary for the world's ivory gull population. Maria Gavrilov of the Russian Arctic and Antarctic Research Institute reports.

Despite rising concern over its population status, the ivory gull remains one of the least-known seabird species in the world. Observed climate changes in the Arctic along with a potential build up of toxic chemicals in the birds suggest that the species may be in trouble. Populations have probably been declining in several parts of its range for a long time, but global data to support this has been lacking.

Recent studies in the Canadian Arctic found a dramatic decline in ivory gull breeding populations. This led delegates at a BirdLife International forum to discuss the need to re-evaluate the species' conservation status in the World Conservation Union's (IUCN) Red List of Threatened Species. However, lack of data from Russia, Norway (Svalbard), and Denmark (Greenland) — where ivory gulls also breed — has made it difficult to scientifically ground such a reassessment. The only surveys of ivory gull numbers ever conducted in Russia, for example, where almost two-thirds of the global breeding

population is believed to be located, took place in the 1990s.

To fill in some of the knowledge gaps, the Russian Arctic and Antarctic Research Institute surveyed ivory gull nesting grounds in Russia, as part of a wider survey of such grounds in the Norwegian and Russian Arctic. The surveys formed part of Russian-Norwegian environmental cooperation in the Barents Sea region in summer 2006.

In Russia, ivory gulls are known to breed in around 50 colonies on high-latitude islands and archipelagos stretching from the north-western Barents Sea to the eastern Kara Sea. The survey team planned to check the most important of these colonies in three different areas: Severnaya Zemlya Archipelago, Franz-Josef Land Archipelago, and Victoria Island.

This ambitious plan to survey a vast and remote area in the short arctic breeding season and under difficult conditions required close cooperation with the Russian Arctic Border Guard network, which provided two of their helicopters ► 16

15 ► to conduct the aerial surveys.

The team flew 4,850 kilometres during the 13-day survey. Dense fog and poor visibility seriously affected planned aerial surveys, but the team nevertheless managed to visit the principal sites in all three areas.

The first stop was Domashny Island—a tiny isle within the Sedov Archipelago (part of Severnaya Zemlya Archipelago) where ivory gulls have been recorded as breeding since the 1930s. A direct total count of incubating birds provided the highest-ever recorded figure of 1,890 breeding pairs (in the 1990s, the population fluctuated between 166 and 1,100 pairs).

Another four occupied colonies were found on the islands of Franz-Josef Land, with between 3 and 450 breeding pairs each.

Victoria Island, the westernmost point of the survey, was reported as an important breeding area for ivory gulls in the 1960s, with the largest colony of 750 pairs observed in the mid-1990s (see *Arctic Bulletin* 03.95). No breeding ivory gulls were observed in 2006, however to the survey team mapped almost 900 old nest bases and holes.

Altogether, the team obtained information for seven breeding colonies with almost 3,000 breeding pairs, including two colonies reported by personnel of weather stations.

The survey confirmed estimates made in the mid-1990s that as many as 10,000 pairs, out of 14,000 worldwide, breed in Russia in good years. It also indicated that in Russia, there is no clear trend in overall population number, but that the number of breeding pairs fluctuates from year to year depending on environmental conditions.

The most obvious environmental difference between the three survey areas was ice conditions: there was no sea ice around Victoria Island, relatively light ice cover in the Franz-Josef Land area, and a vast area of pack ice in the eastern Kara Sea around Domashny Island.

This difference is believed to explain the observed distribution of breeding ivory gulls. Good sea ice cover probably provided better

foraging conditions for the gulls, which feed on sympagic (species that live permanently under polar sea ice) fish and crustaceans. Most of the birds were breeding in close proximity to human settlements and managed to survive human impacts and stray dogs.

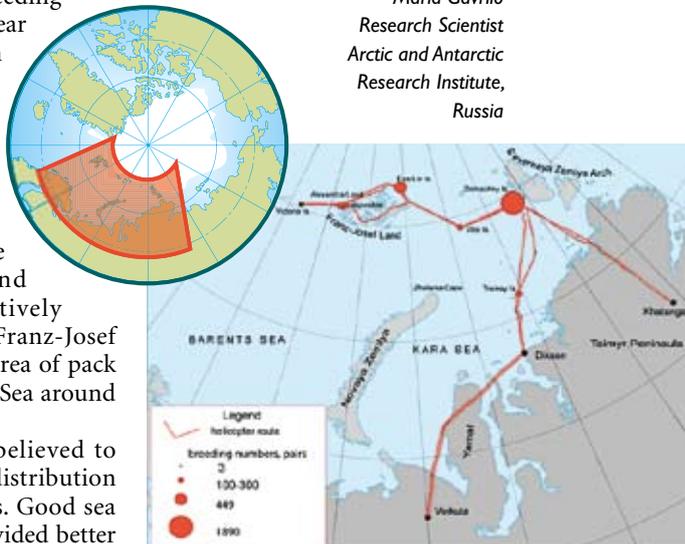
Overall, the 2006 ivory gull breeding season was favourable, especially in the eastern Kara Sea where a very high breeding density and large clutch sizes were observed. The team reported the highest-ever percentage of three-egg clutches, earlier hatching dates, and a greater body mass both in breeding adults and chicks at hatching.

The northeast Barents Sea and eastern Kara Sea remain the main breeding area for the ivory gull at the global level—and the importance of this region is growing given the recent ice cover retreat in other breeding grounds such as the Atlantic sector of the Arctic.

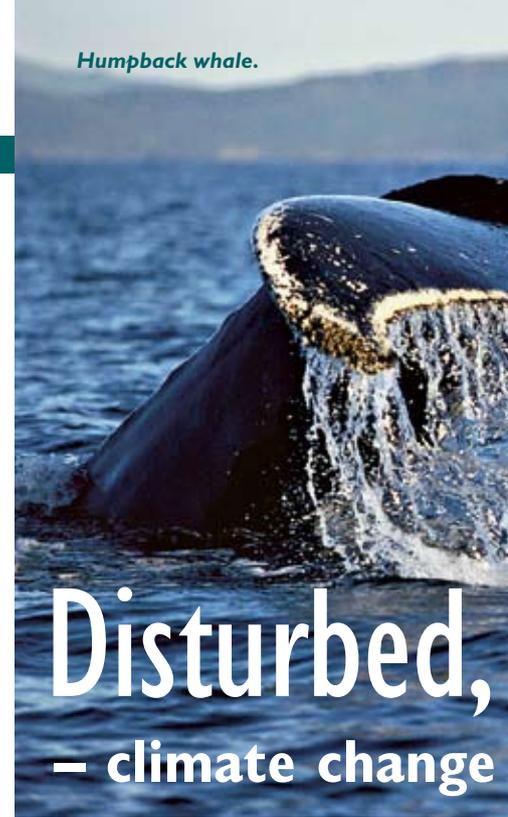
However, the gulls' tendency to aggregate in large numbers for breeding—as evidenced by the record number of pairs on Domashny Island, which accounted for around 20 percent of the estimated Russian population—also indicates that the species is highly vulnerable to various threats that may impact on the population level.

Ongoing monitoring and research of the ivory gull in this key area is crucially important in order to develop a conservation strategy with a circumpolar perspective. This work is ongoing within the Arctic Council's Conservation for Fauna and Flora seabird expert group.

Maria Gavrilov
Research Scientist
Arctic and Antarctic
Research Institute,
Russia



Humpback whale.



Disturbed, — climate change

The Arctic's whales are facing increasing threats from climate change, according to a new report published by WWF and the Whale and Dolphin Conservation Society (WDCCS). Joanna Benn reports.

The impact of climate change on whales, dolphins, and porpoises is growing. And with climate change impacts currently being greatest in polar regions, the Arctic's cetaceans are particularly vulnerable.

According to a report released by WWF and WDCCS, *Whales in Hot Water — The Impact of A Changing Climate on Whales, Dolphins, and Porpoises*, cetaceans that rely on polar, icy waters for their habitat and food resources—such as belugas, narwhals, and bowhead whales, which are permanently resident in the Arctic—are likely to be affected by reduced sea ice cover. In the case of bowhead whales in the western Arctic, one study identified significant reductions in ice cover in eight of the 16 assessed regions of seasonal importance to this species.

In addition to the direct loss of ice-edge habitat, a warmer Arctic with less ice and more exposed ocean may cause more temperate species to expand their normal distributions northward. This could result in changes in food webs and



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