Conclusion

- The activity of the musk ox is affected both by the size of the enclosure, and temperature.
- The hoof status can be improved in an environment with adapted substrate, as well as improving the condition of the animal.
- All this could prepare a captive musk ox for a reintroduction into an established wild population in the future.

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Activity patterns of musk ox (*Ovibos moschatus*) housed in different conditions.

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Background

The wild musk ox (*Ovibos moschatus*) in Scandinavian has a high level of inbreeding and by using metapopulation managements, the genetic variation could increase in the population. A direct reintroduction of captive musk ox to the wild population can cause problems. By improving the body condition, the animals' possibility to survive in a wild habitat can increase.

The aim of the study was to investigate the musk ox activity in relation to the size and shape of the enclosure, as well as if changing of feeding and watering places can increase the activity of the musk ox, and thereby improve their hoof status. These measures could lead to a better reintroduction of musk ox into an established wild population in the future.

What have been done!

The metapopulation management program was running in Sweden between 2003 and 2006, and there were three attempts to extend the genetic variation. The first musk ox in the program was Ingemar which was transported from wild to captivity in 2003. At that moment he was the father to most of wild musk ox. In 2004, Willy from Kolmården was transported to the wild population. He becomes father to a calf, but the calf died, without any foundlings behind its early death. Unfortunately both Ingemar and Willy died shortly after they came to the new habitats. In 2004, Sofie was transported from the wild to Järvzoo. The Zoo had recently imported Pitorak from Greenland, which she should mate with. After one year Sofie got pregnant and was transported back to wild. She gave birth to a male calf, Pitorak Jr, in May 2006. The DNA tests of the wild musk ox showed that the calf had two alleles which distinguished from other musk ox in the Scandinavian populations. Pitorak Jr became father of a calf in July 2010. This was the first wild-born in 11 years.

This study was performed at Musk ox centrum in Tännäs and at Kolmårdens Wildlife Park.

Results

In this study we have demonstrated that the musk oxen in Tännäs were more active compared to the one in Kolmården. The animals´ activities were registrated through a Tellus GPS-collar. The activity rate was 4.7 km/day in Tännäs and in Kolmården it was 1.9 - 2.2 km/day.

There are both negative and positive correlation between average activity and ambient temperature, in the different housing conditions.

The hoof growth of musk ox in captivity was 1.6 cm/month for Tännäs and for Kolmården it was 1.8 cm/month.