



Encyclopedia of Life

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Muskox Podcast and Scientist Interview

Ovibos moschatus

There's a chill in the air this week as we travel to a mountain range in Norway in search of muskoxen, Ice Age survivors that once roamed the far north alongside the woolly mammoth. Introduced to Norway from Greenland in the 1940s, muskoxen flourished on these cool, dry slopes until 2006, when the seemingly healthy animals began to die.

Transcript

Ari: For the Encyclopedia of Life, I'm Ari Daniel Shapiro. And this is: One Species at a Time.

Bretten: Looking for something that's dark, brown and hairy.

Ari: That's Tord Bretten – a park ranger in Dovrefjell, a mountain range in south central Norway. And he's looking for musk oxen, or *Ovibos moschatus*. He walks across spongy lichens until finally he stops, and scans the landscape. Did you spot one, Tord?

Bretten: Yes, we have one male between the small stream and the biggest snow patch. That black spot.

Ari: Oh, that black spot. Can I look through your binoculars?

Bretten: Yes.

Ari: This male weighs close to half a ton. Two horns curl out of his shaggy head. He's healthy and robust, like the other 300 or so animals in the herd. But back in 2006, Bretten had a mystery on his hands. Dead musk oxen were turning up everywhere.

Bretten: I was out every day and we found musk oxes all the time.

Ari: Dead.

Bretten: Yes, and some of them we saw – we had a small herd of five here, I saw every day for three days. And the third day, there were just four. One of them had died, and she was – I saw her – it was a fully-grown cow. I saw her the day before, and she didn't look ill at all. Next day she was just dead.

Ari: 25 dead animals were found that season. Another 60 went missing from the herd, and they were presumed dead.

Bretten: Oh, I was a bit worried that the population could get extinguished. I grew up down here and I'm used to them, I like them. I've seen them almost all my life. It would be a pity if they disappear.

Ari: There was no obvious cause of death. So Bretten invited Bjørnar Ytrehus to come visit. He's a vet with the Norwegian Veterinary Institute, and he was just as puzzled. The animals had plenty of fat reserves. Their bellies were full of food. It looked like they'd just dropped in place. But then he looked at their lungs.

Ytrehus: The lower part of the lungs was dark, firm and with a lot of liquid inside. A bloody, watery, cut surface. These were signs of pneumonia.

Ari: A pneumonia caused by *Pasteurella* bacteria. Ytrehus had seen this kind of thing in sheep and reindeer before, and he knew that it's usually related to some kind of stress. As for what stressed the musk oxen:

Ytrehus: The temperature in this period had reached an all-time high.

Ari: It was the fall, and so the musk oxen had already grown in their warm winter wool. They were overheating.

Ytrehus: When they experience heat, they have to pant to get rid of the heat. And this will accumulate bacteria that normally are found in the throat into the lungs.

Ari: Which is what led to the pneumonia. Usually, the cooler, drier mountains of Dovrefjell are an ideal place for the musk oxen. In fact, since the 2006 die off when a third of the animals were lost, the temperatures have cooled and the herd's recovered. But Ytrehus worries that it could happen again.

Ytrehus: As the climate changes, the climate on the mountain will also change in a warmer and wetter direction.

Ari: Ironically, musk oxen disappeared from Norway after the last ice age once it got too warm here. So the musk oxen in Dovrefjell today – they're not originally from Norway. They were

brought over from Greenland back in the 40s. And they were deposited in Dovrefjell – one of the few places in Norway today where the climate's right for them.

Bjørnar Ytrehus' great-uncle was partly responsible for the transport of these animals. He worked in Greenland in the 40s and 50s.

Ytrehus: He was lending his sled dogs to the people who wanted to catch calves. He regarded that as one of the worst things he had done in his life.

Ari: Why?

Ytrehus: Oh, because they killed the adult musk oxen to capture the calves. And the calves were crying for their mothers. And they brought the calves onboard the ship and took it back to Norway. I think he regarded that as a terrible thing to do now that he's an old man, but I'm sort of comforting him in that it is great that we have musk oxen on Dovre. And that they may have some use for us now.

Ari: Ytrehus sees these musk oxen as environmental sentinels, warning us about what could happen to animals in a world that's getting warmer and wetter. The musk oxen were transplanted here to recall Norway's past. But they may have more to say about the future.

You can see pictures from my trip to Dovrefjell at eol.org. And to hear about one of Tord Bretten's close encounters with a musk ox.

Bretten: When I finally had locked the door and I turned, I had a musk ox five feet behind me. That was exciting.

Ari: Our series, *One Species at a Time*, is produced by Atlantic Public Media in Woods Hole, Massachusetts. I'm Ari Daniel Shapiro.

Meet the Scientist

Meet scientist Ytrehus Bjørnar who you heard in the Muskox podcast:



Where do you work?

Norwegian Veterinary Institute, Oslo, Norway.

What do you study?

My research is currently focused on infectious diseases, the impact of global change on wild animals and diseases transmissible between livestock and wildlife or between wildlife and humans (zoonoses).

What are three titles you would give yourself?

Veterinarian, wildlife enthusiast, contemplator.

What do you like to do when you are not working?

Hike in the forests and mountains with my family and my dog.

What do you like most about science?

To experience how amazing life is, how the body functions and how ecosystems work. It gives me reverence for life.

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