



present

OVIBOS

The Muskox and the Global Warming Challenge



52' Animal documentary
Written and directed by Rémy Marion

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The muskox is intriguing, we know its appearance, and we think we know the Arctic where it lives. But Ovibos, as it would be better to call him, is a survivor. He has known mammoths, sand tigers and the first human hunters. To survive, it has adapted to the harshest and most trying conditions for a mammal by covering itself with a coat unique in the world.

Every winter, it fights against the bad winds to scrape a meagre pittance, it faces the hungry wolves and fights to reproduce. It is all this that we want to show but also to feel. The violence of a birth in a blizzard, the carefree carelessness of a summer under the permanent sun, and the beauty of the autumn of all loves. A journey through time and polar space in the footsteps of Ovibos.

PROJECT PRESENTATION

In the tundra landscape, in summer as in winter, the musk ox is like an erratic block deposited by a glacier: it can be seen from afar, it stands out against the monotony of the landscape. A rectangular mass that cuts itself out on the ridge, walking at a slow pace. A mass lying quietly ruminating alongside its fellow creatures. Like a rock, it is a milestone of eternity in the immensity, a moving landmark in a frozen landscape. Like the rock, it is the glacier that brought him there. Ovibos followed the retreat of the ice caps, always further north. He was there long before the men. The first people who first encountered it and hunted it 400,000 years ago must have had their own words to describe it. The first inhabitants of the Arctic, who chased him for thousands of kilometers, passed on stories about him, legends, and poems to tell about him. Let's start with the first descriptions of the Westerners, to set the subject in its context and better grasp Ovibos in its originality.

We owe the first precise description of this species to a Frenchman: Nicolas Jérémie, known as *La Montagne*. It was on his return, in 1720, from his various stays in the south-western part of Hudson Bay that he wrote a reference work for the time.

Since then, the species has disappeared from the region; sometimes a bone or a tooth reminds us that they were numerous before the arrival of firearms. Will they return naturally, or will they have to be reintroduced?



One must wonder about the very name muskox, translated in *moskusokse* in Norwegian, *myskoxe* in Swedish, *Moschusochse* in German. As Vilhjalmur Stefanson wrote, when he planned to exploit this species in an almost industrial way, "we will have to start by changing the name; attaching musk to ox not selling". In the language of the Inuit, it is called in a very homogeneous way from Alaska to Greenland with some variations of transliteration: *Ummingmak* (northern Alaska) to *Umimmar* in eastern Greenland via *Uumiqmaq* in Nunavut. The root of this word is *Umik*: beard and *mak*: big, all meaning the big bearded one, which is more flattering than muskox.

The first thing you notice is the importance of the woollen blanket that almost completely covers the animal. This fur is composed of two types of hair. On contact with the skin, the wadding hair, which is light-coloured, fine and soft as goose down and 5 to 7 centimeters long, guarantees effective thermal protection. On top, like a large coat, the long, dark jar hairs provide protection against wind, blizzard and snow.

At the beginning of summer, musk oxen moult and shed the wadding hair that keeps them so warm. They look funny at this time of year, a bit like old, faded carpets. The entire molt weighs 2.5 kilograms. Ovibos rolls in the tundra to speed up the process. Birds, such as the Snow Bunting or the Lapland Bunting, take advantage of this to build warm and cosy nests, and lemmings make quilts from them to help them get through the winter.



On the other hand, there is a large difference in size between adult males and females. The male is certainly more massive.

An adult male arrives at a male's chest at about 1.35 meters, a female at about 1.20 meters. We are far from the size of a bison of America which measures up to two meters. An adult male bison can weigh up to 400 kilograms and an average of 275 kilograms, females weigh an average of 190 kilograms.

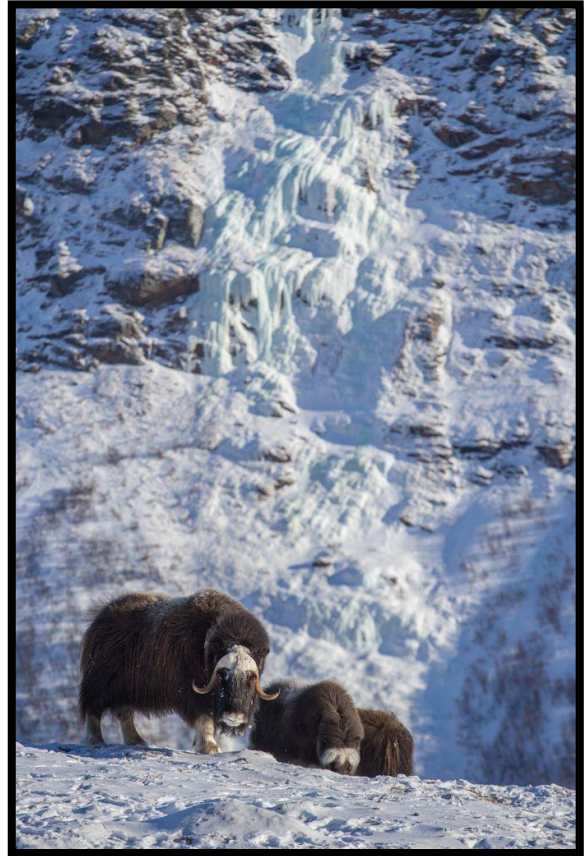
Horns, like our hair or nails, continue to grow throughout the life of the animal. From a distance, it is easy to distinguish between adult males and females. Male horns meet in the middle of the forehead and form a thick helmet. They measure up to 60 centimetres following the curvature. The horns of the females are not joined and a pretty white tuft of hair catches the eye from a great distance. Curved upwards and very pointed in males, these horns are formidable weapons against wolves that are too pressing. The legs are short and massive, covered with white hair. The very round hooves are split and equipped with vestigial dewclaws. Soft pads allow the musk ox to move with ease on the rock. Its front hooves are more massive and remarkably effective in scraping snow.



Of course, Ovibos is at the forefront of climate change. It has gone through many difficult periods to which it has had to adapt, mainly by moving north. Now it seems to be in a rush, it is north of the north of any land. With an estimated global population in 2019 of 170,000 individuals, 55 transplanted populations, low genetic

variability, the species' response to rapid changes in the Arctic is completely unpredictable. Six populations are already in decline, the largest of which represents 41% of the world population. The disturbances generated by climate change, diseases and various nuisances linked to anthropogenic activities may have cumulative effects whose possible impacts we do not know.

The reintroduced populations give great hope of conserving the species, but Ovibos has been reintroduced or introduced into regions from which it had naturally disappeared, such as Scandinavia or Siberia, most certainly



for climatic reasons. There is no evidence that the situation is now much more favourable to maintaining a population in these regions in the long term, quite the contrary. While some populations are booming, they can also collapse rapidly.

Ovibos is already reacting to new bacteria and viruses, but its entire environment is changing. Initially, these changes may be favourable to it. As the aerial images show, the Arctic is getting greener, bushy vegetation is settling on formerly bare ground.

The rise in temperature has an impact on wind speed and the duration of sea ice in the Arctic, changing ocean circulation and the timing and intensity of precipitation. Inland, it rains more than it snows in winter. If temperatures drop below zero, the ground can become covered with ice, forcing muskoxen to expend more energy to access their food.

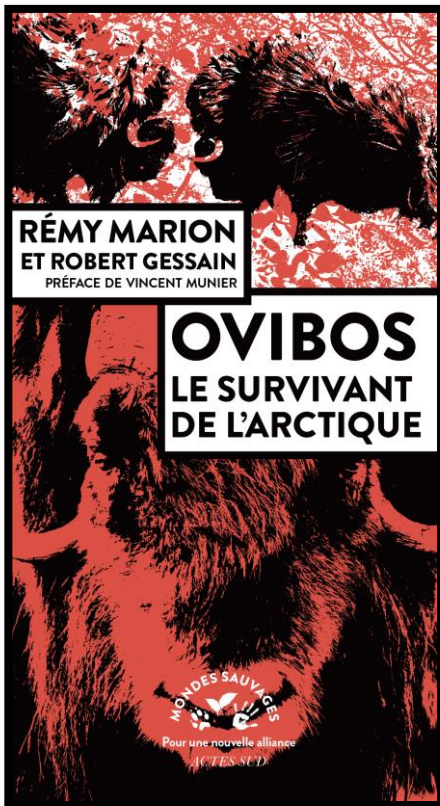
On the other hand, frost-free rain can, by reducing the snow cover, help animals to reach plants. But without this insulation, plant productivity may decline during the next growing season. If pregnant females are unable to meet the nutritional needs of their embryos, young muskoxen will suffer the consequences. Studies on the growth of calves or cattle show that the impacts of climate change are already visible.

Musk oxen are susceptible to the pathologies typical of sheep and cattle. Proximity to farms can be a cause of transmission, but increased movement of humans and other vectors may be involved. Indigenous populations travel little, or simply from one village to another. Surprisingly, as a study in Svalbard shows, it is not the tourists, but their guides who carry the most bacteria under their boots, seeds in their bags or clothes. Tourists are often equipped with new clothes and therefore free of sources of pollution.

Ovibos has seen mastodons disappear, he has travelled thousands of kilometers, believing he could travel without limits around the globe, but we all live in this capsule closed by a thin layer of atmosphere, there is no planet B, no plan B, no escape, only one injunction: to live together in harmony and in the sharing of territories. We will have to face all together, like a herd of Ovibos facing its natural predator, the wolf, or perish in scattered order.



PRODUCTION NOTE



Rémy Marion is a director, lecturer and author of several books on the polar regions, territories of the world that have fascinated him for more than 25 years. After having taken an interest in polar bears and penguins in numerous writings (*Guide for penguins* in 1995, *Little polar bear* in 2001, *Latest news on the polar bear* in 2009...), he now focuses on musk oxen, or in other words the ovibos in *Ovibos, the Arctic survivor*. The book takes the form of a posthumous dialogue with Robert Gessain. A physician and anthropologist of the first half of the 20th century, he accompanied the French explorer Paul-Émile Victor on his expeditions to Greenland in the 1930s. Fifty years apart, Robert Gessain and Rémy Marion both discovered the fascinating animal known as the Ovibos.

The desire to devote a documentary to the astonishing Ovibos came from there, from Rémy Marion's passion for this polar animal with abundant fur. With its small paws and quiet appearance, the musk ox intrigues. How has it managed to survive since prehistoric times in the face of its many predators (wolves and men), and the many climatic changes? Man's greed for the Arctic and its oil wealth and global warming do not seem to bode well for the Ovibos. Its advance towards the Great North for millennia, fleeing the hunters, could soon find a catastrophic outcome if nothing is done to save it... But for the moment, like a rock, it still holds on.

Thanks to Rémy Marion's networks and the very many images he has already shot, we have a large inventory of archives that will constitute a large part of the film. However, Rémy has already identified the complementary sequences that we will need to shoot. To do this, we are planning a two week shooting:

1 week in February in Norway for sequences of cold, snow and storms

1 week at the end of August in Northern Quebec to shoot sequences of fights, views from the sea...

Our partner, the company Pôles d'Images de Rémy Marion, assures us of the latter's know-how and experience and we are currently studying the possibility of another Canadian or Scandinavian partner.

Sensitive to global warming and the disappearance of species, this subject is close to our hearts. It is for these reasons that we feel it is more necessary than ever to make this tundra animal, its way of life and the perils it faces known. We hope that the project will captivate you as much as we do.

Frédéric Malegue

SCREENPLAY



The film starts at the end of winter when the young calves are born.

The blizzard blows, the snow flies. The calves are born on the snow and attract the polar foxes, which are always fond of a placenta or a stillborn calf. The adults scratch the frozen ground and ruminant lying down, calmly.

Very quickly, the young of the year discover their environment and social relationships are created, they like to play like goats, real little goats.

But let's start with the first description, and the first confusion, its name! Muskox in English, but it is neither an ox nor muskox, to avoid this confusion we will most often use its Latin name, *Ovibos*, which is prettier and closer to the truth.

We are in Churchill, the area where the first description was written. It has disappeared from this area, not like its Pleistocene counterparts - the mammoths, woolly rhinos, and other sand-toothed tigers - because of climate change, but it was nearly wiped off the planet by human hands. It has been hunted for its fleece and captured for zoos.

The origins of the species are certainly to be found on the Mediterranean coasts or in the Balkans, it lived in the south of France. Its close cousins are the Serows living in the north of Japan and the Gorals in the Himalayas. *Ovibos* climbs and climbs like a mouflon, nothing to do with a bison or a buffalo.



As soon as the spring heat is hot, the rivers are freed from frost, plants point under the snow, ptarmigan and polar foxes begin to change colour. Migratory birds and caribous return to Oribos. Plants bloom: the yellow of the Arctic poppies, the purple of the saxifrages and silenes, the light yellow of the mountain avens.

During the winter, the musk oxen have hydrated with snow and they lack salt. They gather where natural salt deposits are easily accessible. They start scratching at anything and everything to get rid of their winter fleece. Fluffy flakes blow in the wind and cling to the fine branches of the dwarf willows.

At the end of winter, old, weakened males become isolated from the herd. They become potential prey by being alone. The wolves are relentless and manage to lay down a male that has had its glory days but will feed the new litter of cubs.

During the Arctic summer, the coastline is filled with the calls of migratory birds. Clouds of dwarf robins and their strident cries invade the scree slopes. Black-legged kittiwakes twirl around and gather on ledges to escape the polar fox. The small carnivore is losing its white coat to a brown tundra-coloured coat.

The Oribos are hot, hotter and hotter. They often bathe to cool off and escape the billions of mosquitoes that are circling around them. The grass at the bottom of the valleys is rich, it is a time of abundance and almost carefree. Snowdrifts are ideal resting places for naps and slides. A white hare shows its ears, ptarmigan hide among the willows.

Autumn arrives quickly from September onwards, the vegetation that receives less energy changes colour. The tundra lights up red and yellow.

In northern mainland Canada, grizzly bears hunt the last ground squirrels under the intrigued eye of muskoxen. It is the time of love for Oribos and therefore of fighting. When two breeding males collide, the impact is equivalent to a vehicle hitting a wall at 70 km/h. The shocks can be heard far away but do not seem to disturb the rest of



Map of animated distributions with disappearance and reintroduction

the herd. The loser will go wandering alone. As they attack each other, hairs and willows fly. The struggle is brutal and primitive. The winner will be the father of the next litter.

Winter arrives suddenly with the first snows that will cover the vegetation. The hills are covered with a shroud that may be fatal to some individuals. The herds gather. The musk oxen do not migrate, they face the winter. They are positioned on hilltops and plateaus beaten by the bad wind, where the snow is blown away and offers meagre food more easily. Caribou leave the tundra to take refuge in the boreal forest. The last birds fly South.

The aurora borealis begins to set the sky ablaze. They dance like puppets; whirl around and then leave in a luminous saraband.

The snow gets thicker, movements become difficult. You have to scratch more and more to access a meagre food supply. Wolves take advantage of this. They attack the less mobile herd, catching a young but in a last burst, the adults put the carnivores on the run. Some are not so fortunate, and the wolves share its flesh, which will allow the pack to spend the winter.



At the end of February, the temperatures are extreme, the wind cuts like a scythe. The Ovibos fight under a gangue of snow and ice.

And carrying not far away, the fragile 3-month-old polar cubs leave the dens, they should have encountered musk oxen in this territory, but they leave towards the ice floe, their mother is hungry.

With global warming, things are getting more complicated for the fauna and mainly for the Ovibos. He who has fled to the far north can no longer go any further. If a thaw occurs in the middle of winter, the ground will be covered with a layer of ice that is impossible to scratch. If melted snow falls for a few days, the fur is wet and will freeze on the animal.

On the other hand, some introduced populations such as in Norway live close to cattle or sheep farms and may be infected by diseases. Elsewhere, as in Alaska, huge pipelines block the tundra.

While the population of 150,000 individuals may suggest a certain abundance, it must be taken into account that they all originate from eastern Greenland or northern Canada, and therefore there is little genetic variability in the populations, and consequently a susceptibility to viruses and other pathogens.

Ovibos will still have to struggle to survive but the cold warrior has experienced much more...



After multiple trips to the Arctic and many encounters with musk oxen, the shootings will complete my images already made in Norway, East Greenland and Northern Labrador.

The musk oxen will be monitored throughout the year in different locations.

The harshness of the climate they have to face will be a priority to show and feel. The species is rather calm and peaceful, it is the variety of situations, landscapes and shooting modes that will energise the story.

Scenes of predation and social behaviour will alternate with neighbouring species: polar fox, birds, arctic hare and polar wolf.

Drone images of musk oxen as well as glacier and iceberg landscapes will help to situate and visualise the scale of the scenery, immense and desolate, majestic and impressive.

The commentary will only be there to convey the information, but the narrator will give way to the sounds of the wind, ice and the herds of Ovibos. Music with string instruments, rather organic like the cello, but also jaw harp and hang drum will carry the narration.

The life of the ovibos is a drama played out in slow motion but in which flashes of lightning resound in images and sounds.

Rémy Marion

CV REMY MARION AUTHOR - DIRECTOR

Director, lecturer, author of 25 books on the polar regions.

Manager of the company **Pôles d'images** (UAV shooting and production of institutional and nature films)

Organiser and guide of polar trips since 1988.

Author of numerous popularisation articles.

Co-director and co-author of *Métamorphoses de l'ours polaire* and *Fort comme un ours*, two 52-minute documentaries for ARTE and *Albatros et gorfous un été austral* for France 2.

Organiser of five international symposia on the theme of the polar bear and the polar regions.

Permanent consultant of the association Pôles Actions.

Member of the Geographical Society and the Society of French Explorers.



GOYAVE FILMOGRAPHY

GOYAVE has been collaborating for 20 years with the main French television channels in the production of documentaries, reports and short fiction films. Since its creation, Frédéric Malègue, producer and director, has always shown his willingness to open the viewers to the realities of other countries and cultures. In addition to short films on Beirut and the Tunisian revolution, he has produced various documentaries in Vietnam, India, Palestine, Venezuela, Chile and the Dominican Republic.

Selective filmography

Claude Sautet, calm and dissonance (documentary by Thomas Boujut and Amine Mestari, 52', 2020)
Prebuy ARTE France.

Rigour and perfectionism. These are undoubtedly two of the words that best define Claude Sautet.

This meticulous, almost maniacal care, which gives him absolute control over the smallest detail, is his trademark. It also reveals another aspect of his personality, that of a sensitive being, perpetually prey to doubt. Claude Sautet has nourished all his films with himself.

Grock, shadows and lights of a legendary clown (Documentary by Alix Maurin and Fabiano D'Amato, 52', 2019)
Creative Documentary - HD - Coproduction Screenshot Productions, DreamPixies, Broadcasted Arte and RTS

How did the famous Swiss clown Grock reign for half a century on all circus and music-hall stages, to the point of becoming one of the most famous artists in the world? Thanks to the man behind the mask, Adrien Wettach, the other side of the virtuoso clown, that of an entrepreneur who was a precursor of show business, who turned his character into a product. At the risk of going astray during the Second World War.

Johnny Clegg, the White Zulu (Documentary by Amine Mestari, 52', 2019)
Documentary music - HD - Coproduction Screenshot Productions, Arte Broadcasting, International Sales Arte Distribution

With the hit "Asimbonanga", the South African musician Johnny Clegg became a star. He had the courage to unite blacks and whites by mixing English and Zulu, African rhythms and rock and became the symbol of the anti-apartheid struggle. This film tells his story and that of his music which espouses the history of South Africa and his long journey towards freedom.

Vietnam War, at the heart of secret negotiations (Documentary by Daniel Roussel, 52', 2014)

Documentary history - HD - Coproduction Al Di Sopra Production and Arte France, Diffusion Arte, Public Senate

- Grand prix of the Pessac Festival 2014
- FIGRA Nomination in the category Land(s) of History

From 1970 to 1973, the American and North Vietnamese delegations met in the greatest secrecy, in the suburbs of Paris, to prepare for peace. A plunge into history with, as a bonus, excerpts from these bitter negotiations.

Les Niños du kitesurf (Documentary 26' by Frédéric Malègue broadcast on France 3 programme Thalassa, 2012)

A Frenchman saves young delinquents from the favelas of the Dominican Republic by teaching them kite surfing, more than a sport, a promise of employment and social status...

Des Étoiles et des Hommes (Documentary by Samuel Albaric and Pierre François Didek, 52', 2009)

- Immersion Documentary - HD - Coproduction CEA, Diffusion Cinécinéma, CNDP
- Nancy Researchers' Film Festival, France (April 2009)
 - FICFA, Canada (September 2009)
 - Let's find out in Oullins, France (November 2009)
 - RISC Festival in Marseille, France (November 2010)

On the occasion of the International Year of Astronomy in 2009, this Documentary proposes to take us behind the scenes of one of the largest astrophysics services in 2009 (The SAP) and to discover, behind the research itself, those who drive it forward.

Gaza Memories (Documentary by Samuel Albaric, 46', 2007)

Documentary - DVCam

- Images in library in Paris, France (2008)
- Tiburon International Film Festival (TIFF), USA (March 2008)
- Brooklyn International Film Festival, USA (May/June 2008)
- Soleluna doc Fest in Palermo, Italy (July 2008)
- International New Generation Film Festival in Lyon, France (September 2008)
- Festival des libertés in Brussels, Belgium (October 2008)
- Arab Film Festival in San Francisco, USA (October 2008)
- Interviews Belfort International Film Festival, France (November 2008)
- FIPA, International Festival of Audiovisual Programmes in Biarritz, France (January 2009)
- Al Ard Doc of Sardinia, Italy (February 2011)

The film is a succession of phone calls between Wissam, a young Palestinian, and Sam, a young French director. Together they evoke memories of a phantasmagorical Gaza where bakers seduce young girls and vegetable sellers take us into the fabulous world of the Djinns.

Hacienda Redemption (investigation, 35', 2006)

| *In Santa Teresa, Venezuela, Alberto Vollmer has set up a rehabilitation center for young people used as paid assassins by Venezuelan mafias..*