



*Santa Claus*  
**REINDEER**  
ARCTIC CIRCLE • LAPLAND

Nature's Crown in Numbers — Explore the Story Behind Every Antler.

# Antlers in the Nordic Wild 2025

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Nature's Crown in Numbers — Explore the Story Behind Every Antler.

Welcome to the Nordic wild, where reindeer roam across snowy plains and forests, wearing one of nature's most iconic symbols — their antlers.

This booklet invites you to discover the science, mystery, and beauty of reindeer antlers through facts, folklore, and fascinating details. Whether you're an animal lover, a traveler, or an educator, there's something here for you.

— The Santa Claus Reindeer Team

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# Antlers vs. Horns: What's the Difference?

Reindeer antlers are some of the most iconic and awe-inspiring natural features in the Nordic wilderness. To understand their uniqueness, we first need to explore what antlers are, how they differ from horns, and how they grow each year with the help of an extraordinary tissue called velvet.

Checklist		
Feature	Antlers (Reindeer)	Horns (e.g., Goats, Cattle)
Material	Bone	Keratin (like fingernails)
Branches	Branched structure	Unbranched, often curved
Growth	Grown and shed annually	Permanent, continue growing slowly
Sex	Grown by both sexes (in reindeer)	Typically only males (or both, but smaller)
Velvet stage	Yes	No

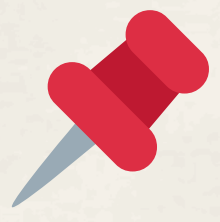


## Reindeer Antlers

Reindeer antlers are among nature's most fascinating and fast-growing structures—symbolic, functional, and rich in biological wonder.

Unique among deer species, both male and female reindeer grow and shed antlers each year, making them a remarkable subject for wildlife enthusiasts, educators, and travelers alike.

In this guide, "Antlers of the Nordic Wild", we explore the life cycle, purpose, and cultural relevance of these magnificent natural crowns through data-driven insights and fascinating facts.



# General Overview

Reindeer (**Rangifer tarandus**) are called caribou in North America, but both are the same species.

Both male and female reindeer grow antlers, which is **unique among deer species**.

**Antlers** are made of bone and are one of the fastest-growing tissues in the animal kingdom.

Antlers are **grown and shed** annually.

Antler growth is **fueled by testosterone and daylight changes**; this is known as photoperiodism.





# Biology & Growth Cycle

Antlers begin to grow in spring and are initially covered in a soft, blood-rich layer called **velvet**.

Velvet supplies nutrients and oxygen to the **growing bone**.

By late summer or early autumn, the velvet dries and is rubbed off, **revealing** the hard antlers.

Males typically **shed** their antlers in late autumn to early winter (November–December).

Antlers are shed after the **rutting season** (mating season), which occurs in the autumn.

Females retain theirs through the winter and shed them in spring, usually after **giving birth**.





# Interesting & Lesser-Known Facts

Some **castrated males** may never shed their antlers, as their testosterone stays low and does not trigger shedding.

Occasionally, **antler abnormalities** occur due to injury, genetic conditions, or uneven hormones.

Reindeer antlers are covered **in hair** during velvet phase, giving them a velvety appearance and feel.

Antler bone is **porous inside**, yet very strong.

Antlers are shed annually through a process where **osteoclasts (bone-resorbing cells)** break the bone connection.





# Fastest Growing Bone on Earth

Few things in nature grow as quickly—or as beautifully—as reindeer antlers. These seasonal structures are not only symbols of strength and survival, but also a biological marvel. Antlers are, quite literally, the fastest-growing bone tissue on Earth.



## How Fast Do Antlers Grow?

During the peak growth season in spring and early summer, reindeer antlers can grow at astonishing speeds:

- Up to 2–3 centimeters (1 inch) per day in adult males
- Growing antlers may reach full size within 70–120 days

To put this into perspective: that's up to 1,000 times faster than the growth rate of human bone.

The growth begins at the pedicle, the bony base on the reindeer's skull, and continues outward in a branched structure. This rapid pace allows reindeer to form impressive antlers in time for the autumn rutting season, when males compete for mates and females use their antlers for food access and protection.



# Fastest Growing Bone on Earth



## Velvet: The Secret Behind the Speed

What makes such fast growth possible is a special skin called velvet—a soft, vascular covering rich in:

- Blood vessels
- Nerves
- Growth hormones

Velvet acts like a living delivery system, transporting essential oxygen, minerals (especially calcium and phosphorus), and proteins directly to the growing bone tissue.

Velvet is sensitive and full of nerve endings, which is why reindeer often avoid bumping their growing antlers. If injured, the velvet can bleed easily and interrupt the antler's development.

Once the antler has fully mineralized into hard bone (usually by late summer), the velvet dries up and naturally sheds, often seen as hanging pieces of skin or fur on the antlers.



# Fastest Growing Bone on Earth

## Hormones and Light: The Triggers of Growth

Antler development is governed by a fascinating internal system that responds to changing daylight hours—a phenomenon known as photoperiodism.

Here's how it works:

- As daylight increases in the spring, the pineal gland in the reindeer's brain detects the change.
- This signals the production of testosterone, which stimulates antler growth.
- Testosterone levels rise steadily, peaking in the late summer (triggering hardening) and then falling off in late autumn, which leads to antler shedding.

Importantly, castrated males (or those with low testosterone) may never shed their antlers, and may retain them year-round.

Photoperiodism ensures that antlers are ready exactly when needed—in time for mating season for males, and for food defense in winter for females.

# MAP OF ANTLER SHEDDING SEASONS ACROSS THE NORDICS





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