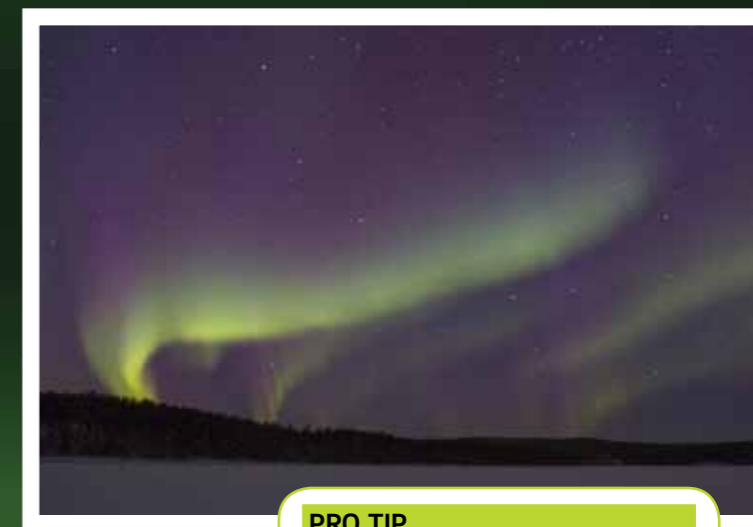


■ Nordic light in the forestland in September. This is actually an old image taken on ISO 100 slide film. Often the light isn't that strong and you need really long shutter speeds. This one is taken at 4min on f/2.8. The green light is not moving around as much as the violet.

■ Aurora Borealis
Råne River valley, is a great spot to take photos of the Nordic light.



PRO TIP

Aurora Borealis, known as the Northern Lights, occurs when charged electron particles from solar wind collide with the Earth's atmospheric gases, releasing particles of light.

Lapland photographer Fredrik Broman works in sub-zero temperatures but that's a small price to pay for shooting one of the world's most spectacular night-time phenomena: the Northern Lights.

The temperatures in Lapland creep even lower once the sun sets, but for Fredrik Broman, that's when the photography gets really interesting. Learning to shoot during his military service for the Swedish Navy, Broman first invested in a good camera while sailing all the way to Australia. Since then he's made a study of the Aurora Borealis, the Northern Lights, the infamous IceHotel and the wild world of the Arctic Circle. Here he shares his tips on shooting some of the most marvellous sights in the snow.

When and where can you see and photograph the Northern Lights? The chances of seeing the lights are better if you're around the Arctic Circle and further north. Some years it has been visible 1000km south in the Stockholm area. From September when the nights are dark again, the chances of seeing the Northern Lights increase. I've seen it as early as the middle of August, but that was back in 2004 when the Northern Lights were really strong. You can usually see it from September until a few days into April. It depends on the sun's activity, as that in turn effects the radiation creating this phenomenon.

LIGHT IN THE LAND MIDNIGHT SUN



■ Snowflakes
Snowflakes on my bedroom window taken from the inside.



■ Snow ice
The rapid not far from my house doesn't freeze over completely in the winter. Fantastic snow patterns and shapes are formed throughout the winter when wind, temperature and water do the work.



"Sunset is not my favourite moment in the evening. It starts getting more interesting an hour after"

■ Sami lavvo in the snow
The lights of a snowmobile light up the foreground of this image. The traditional sami lavvo is heated with a small firewood burner. It's around -25°C outside and 20°C on the inside.

IMAGES

Snowflakes
Shot with a Canon EOS 20D; 1/125sec; f/9; ISO 100

Snow ice
Shot with a Canon EOS 10D

Sami lavvo in the snow
Shot with a Canon EOS 20D; 15sec; f/5.6; ISO 400

How do you photograph the Northern Lights?

1. You need a tripod and a camera with manual settings you can use.
2. Stick with Manual or AV for your camera modes.
3. You often need shutter speeds up to a minute or longer.
4. Try a f/2.8 lens. It'll help a lot. If the lights are really strong, you can go down to a shutter speed of around 10sec with one of these lenses.
5. Do all of the above using ISO around 100-400 for good results.
6. Clear skies and snow on the ground are ideal conditions.

What are the challenges of photographing the Northern Lights? The challenge lies in catching the strong purple or pink light. It moves around a lot and isn't as strong as the green colours.

What tips do you have for photographing the snow before night time? I like to put an object in the foreground as a silhouette. Preferably people. There are so many bad sunset shots, and so many of them are the same.

Sunset is not my favourite moment in the evening. It starts getting more interesting an hour after, especially in the far north when you have exciting light all night long.

In summertime around the Arctic Circle you can't see the Northern Lights. The

nights are too bright with the midnight sun up and shining all night. In spring and then in late summer, when the midnight sun sets again, the light just after sunset is really nice to shoot in.

You have amazing snow and sunset shots: were they difficult to shoot? Well, not really. But when I think of all the outdoor training I've learnt over the years, I realise that they are hard to shoot. Not in a technical photographic way, but in a slow way, they're about experience, learning about the environment and seeing patterns in the snow.

What sort of special housings do you use to protect your camera gear in the snow? You don't really need that. Up in Swedish

PRO TIP

If you're photographing the snow at dusk or in low light, you will definitely need a tripod and a long shutter speed to get the best shots

Lapland where I live and work a lot, we get cold, dry winters. You do need to keep extra batteries inside your long johns!

You've photographed the famous IceHotel – tell us about that shoot. I've taken many shots of the IceHotel. I like it later in the season, in March, when there is sunlight coming through the ice and snow walls. There are so many



“Reindeers and moose are not that shy but you can spend years trying to catch shots of bears and wolves”

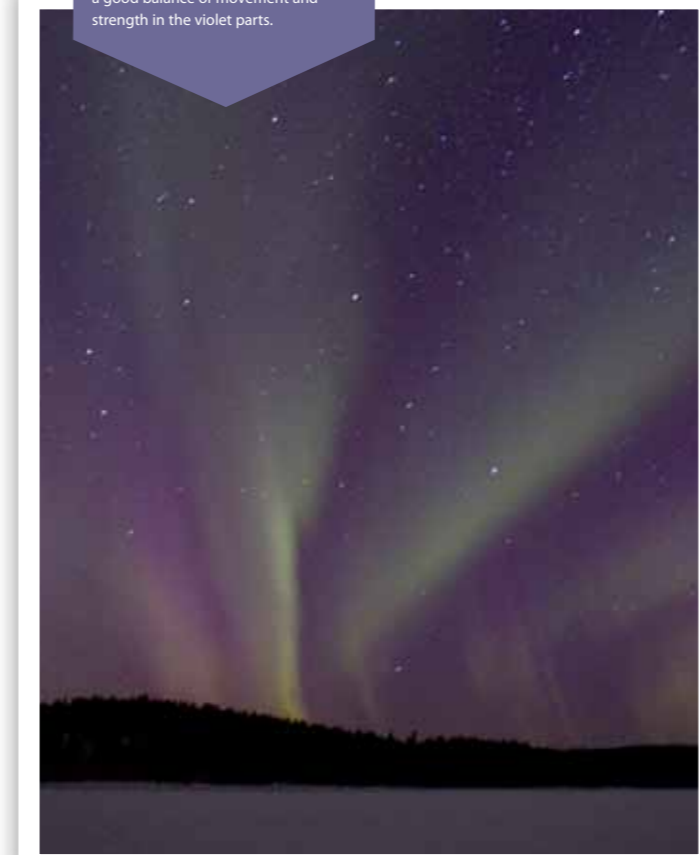
■ Råne River
The rivers in the forestland of Swedish Lapland are great for fantastic snowshoe hikes and cross-country ski tours. Following a river in wintertime is a great experience. The Råne River runs for 210km from Gällivare down to the Gulf of Bothnia, passing my house along the way.

images of the IceHotel out there, but the most interesting thing I do for them now is to tell stories, creating photo essays about other important issues including the importance of environmental issues. It's great they use their strong brand to put focus on those things.

What else do you take photos of when you're in Lapland?
I do a lot of outdoor activity photography. I love rafting and kayaking and enjoy taking photos of those.

Do you see any wildlife while you're out shooting?
Yes, it happens. It's hard to catch in the sensor though. You need to specialise in wildlife photography to get the perfect images there. Reindeers and moose are not that shy but you can spend years trying to catch shots of bears and wolves in the wild. I've been in hideouts in Finland for bear and wolf spotting and that's a fantastic experience. The bears and wolves run away long before you see them. If you're "lucky" to run into a bear

■ Råne River Nordic light
Råne River valley, is a great spot to take photos of the Nordic light. There are fractions of violet light here, and it moves around. I used ISO 800 with a shutter speed of 30sec to get a good balance of movement and strength in the violet parts.



IMAGES

■ Råne River
Shot with a Canon EOS 40D; 15sec; f/16; ISO 200

■ Råne River Nordic light
Shot with a Canon EOS 7D; 25sec; f/4; ISO 800

■ Luleå
Shot with a Canon EOS 40D; 1/160sec; f/5; ISO 100

■ Luleå
The city of Luleå has for a long time been connected with the steel industry. Now the University and a creative community has overtaken the domination of what the city stands for. The municipality needs a new image to communicate more truly what it stands for. An urban lifestyle combined with the wilderness and interests connected to that. The waters of Luleå River and the Gulf of Bothnia surround the centre and provide access to fantastic nature, right around the corner. This is the first image in a series of ten telling more about the city in the far north of Sweden, taken by the Råne River just north of Luleå. Model: Sandra. Make-up and styling: Arctictrend.se



PHOTO TOUR

with Fredrik Broman and DP Editor-at-Large Ewen Bell!

With the help of specialist experts on Norway and Sweden, 50 Degrees North, we've designed a sensational adventure into the Arctic snow and ice. We'll have enough daylight to chase reindeer and landscapes under the sun, plus deeply dark nights for shooting the Northern Lights. Starting in the northeast of Sweden and finishing in the northwest of Norway, this adventure includes reindeer races, traditional markets and some of the most breathtaking scenery Scandinavia has to offer.

Dates: Jan 30-Feb 12, 2012; Feb 04-Feb 17, 2013.
Max group size 8 people, US\$9890 per person.
fiftydegreesnorth.com and ewenbell.com



■ Hilleberg
Taken for the Swedish tentmaker Hilleberg. I didn't bring my tripod on this cross-country ski tour in March, but I had my backpack, and balanced the camera on it. 20sec shutter speed, with my friend Johan from Hilleberg walking through with his lamp.

“Skiing is a perfect way to get around while taking pictures.”

■ Niemisel Nordic lights
In this image you can see lights over the nearby village of Niemisel. Taken right on the frozen riverbed outside my house in Lassbyn.

with cubs, you do need to be careful as they can be dangerous. Most Swedes haven't seen even one bear in the wild in their whole life.

Do you ski and shoot photos at the same time if you're in a remote spot? Skiing is a perfect way to get around while taking pictures. Cross country or alpine skiing are the best. It's much faster than snowshoeing, but you need some training before you get the balance and can handle the camera at the same time. You need a good backpack so you can get out your equipment quickly when you spot something you want to shoot.

IMAGES

Hilleberg
Shot with a Canon EOS 7D; 20sec; f/7.1; ISO 400

Niemisel Nordic lights
Shot with a Canon EOS 7D; 30sec; f/4; ISO 800

IceHotel interior
Shot with a Canon EOS 20D; 1/500sec; f/8; ISO 400

For more of Fredrik's work, check out riverworks.se

■ IceHotel interior
The IceHotel is built from scratch every year. Early in the season, from December, you don't get any outside light into the structure, but later on around March, the light inside is fantastic. The sun reaches through the walls. The IceHotel melts down around the end of April every year.

