

SITE MANUAL

Villum Research Station

Station Nord

2015



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2 Introduction

The Villum Research Station is located at 81°36N, 16°40W in the very nord-east of Greenland next to the Danish Military Station Station Nord, where 5 persons are maintaining the station and clearing the landing stripe all around the year.

2.1 About the Site Manual

This manual will provide information about conducting fieldwork in the Station Nord area with the Villum Research Station as your base.

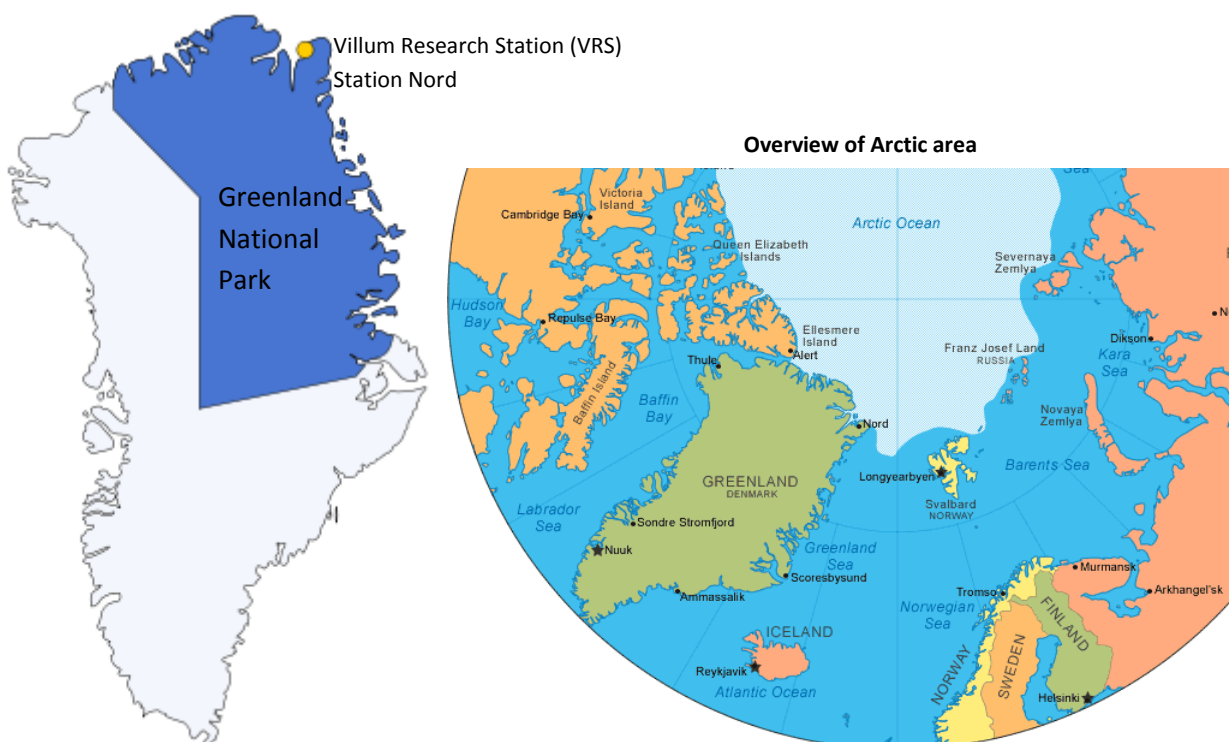
The manual is in 5 sections:

1. General introduction to the Station Nord
2. Practical information for going to Villum Research Station (VRS)
3. Information and safety issues on the VRS
4. Cargo
5. Applications, administration and appendixes

Section 1

General introduction to the Station Nord area

3 Where to find Villum Research Station, Station Nord



6

4 Climate and Wind Chill factor

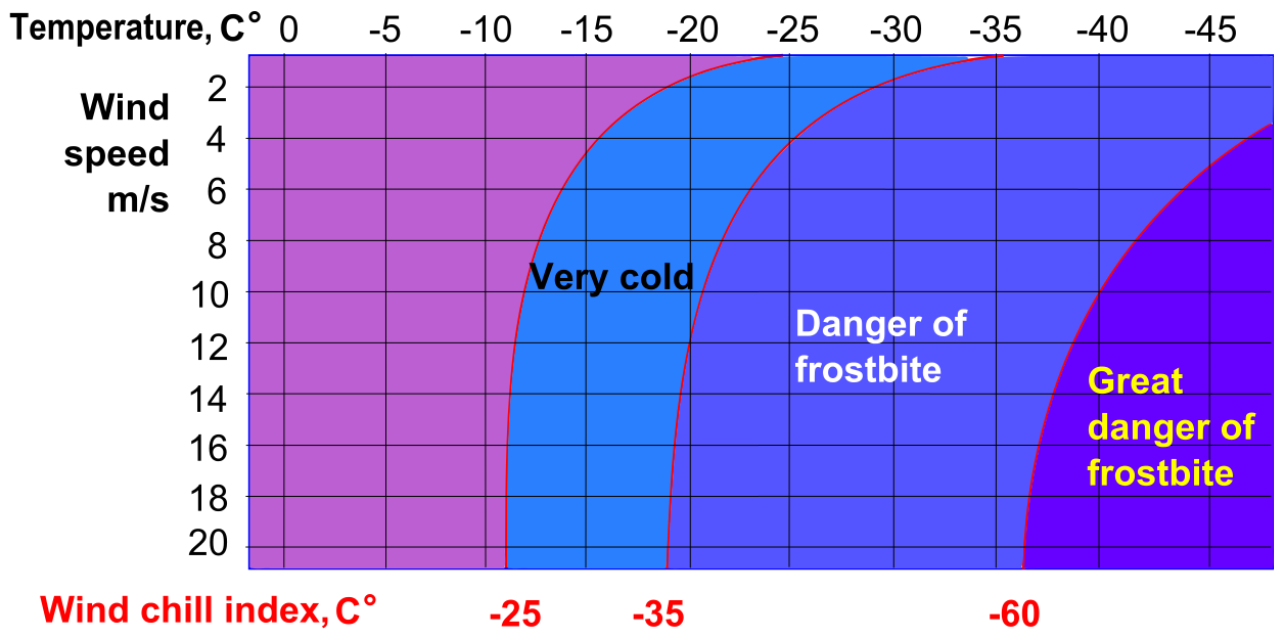
Station Nord features a very cold polar tundra climate with average temperatures just a few degrees above the freezing point in the midst of the sort summer.

In the Table below the climate data for Station Nord is given.

Climate data for Nord													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	-5 (23)	-5 (23)	-2 (28)	2 (36)	6 (43)	10 (50)	14 (57)	13 (55)	5 (41)	1 (34)	1 (34)	2 (36)	14 (57)
Average high °C (°F)	-27 (-17)	-26 (-15)	-27 (-17)	-18 (0)	-6 (21)	2 (36)	6 (43)	4 (39)	-6 (21)	-18 (0)	-22 (-8)	-24 (-11)	-13.5 (7.7)
Average low °C (°F)	-32 (-26)	-32 (-26)	-33 (-27)	-23 (-9)	-12 (10)	-1 (30)	1 (34)	1 (34)	-10 (14)	-21 (-6)	-27 (-17)	-29 (-20)	-18.2 (-0.7)
Record low °C (°F)	-51 (-60)	-47 (-53)	-46 (-51)	-37 (-35)	-24 (-11)	-10 (14)	-2 (28)	-13 (9)	-30 (-22)	-32 (-26)	-45 (-49)	-42 (-44)	-51 (-60)
Source: Weatherbase ^[2]													

The combination of very low temperatures and wind can be very dangerous, since the cooling is very fast and the wind chill factor must be taken in account to avoid frostbite.

WIND CHILL



Wind Chill factor illustration from Wikipedia

5 Station Nord – field site

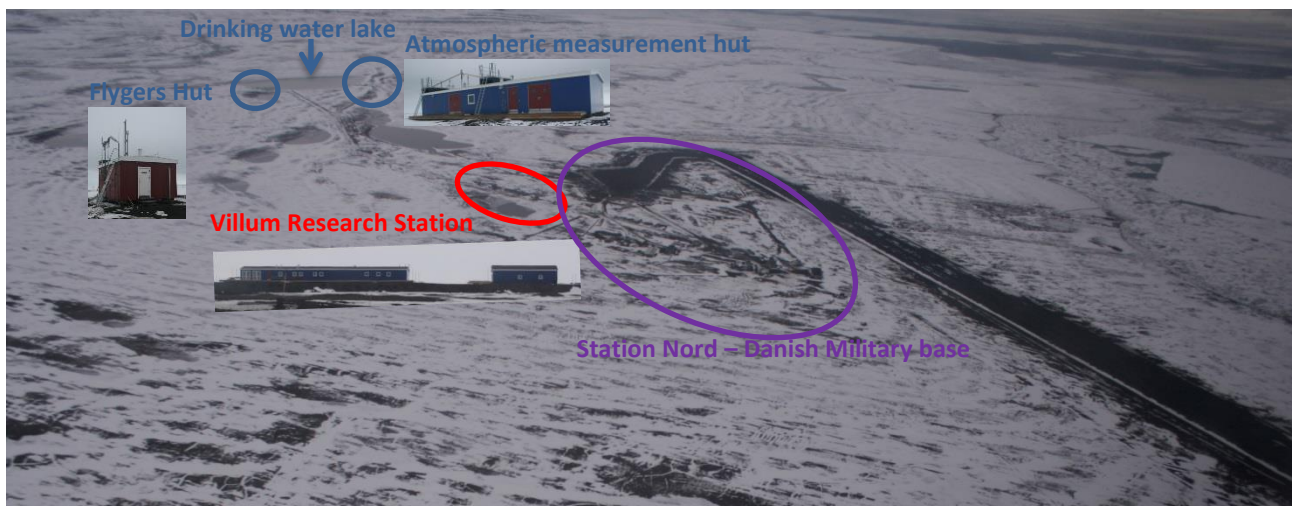
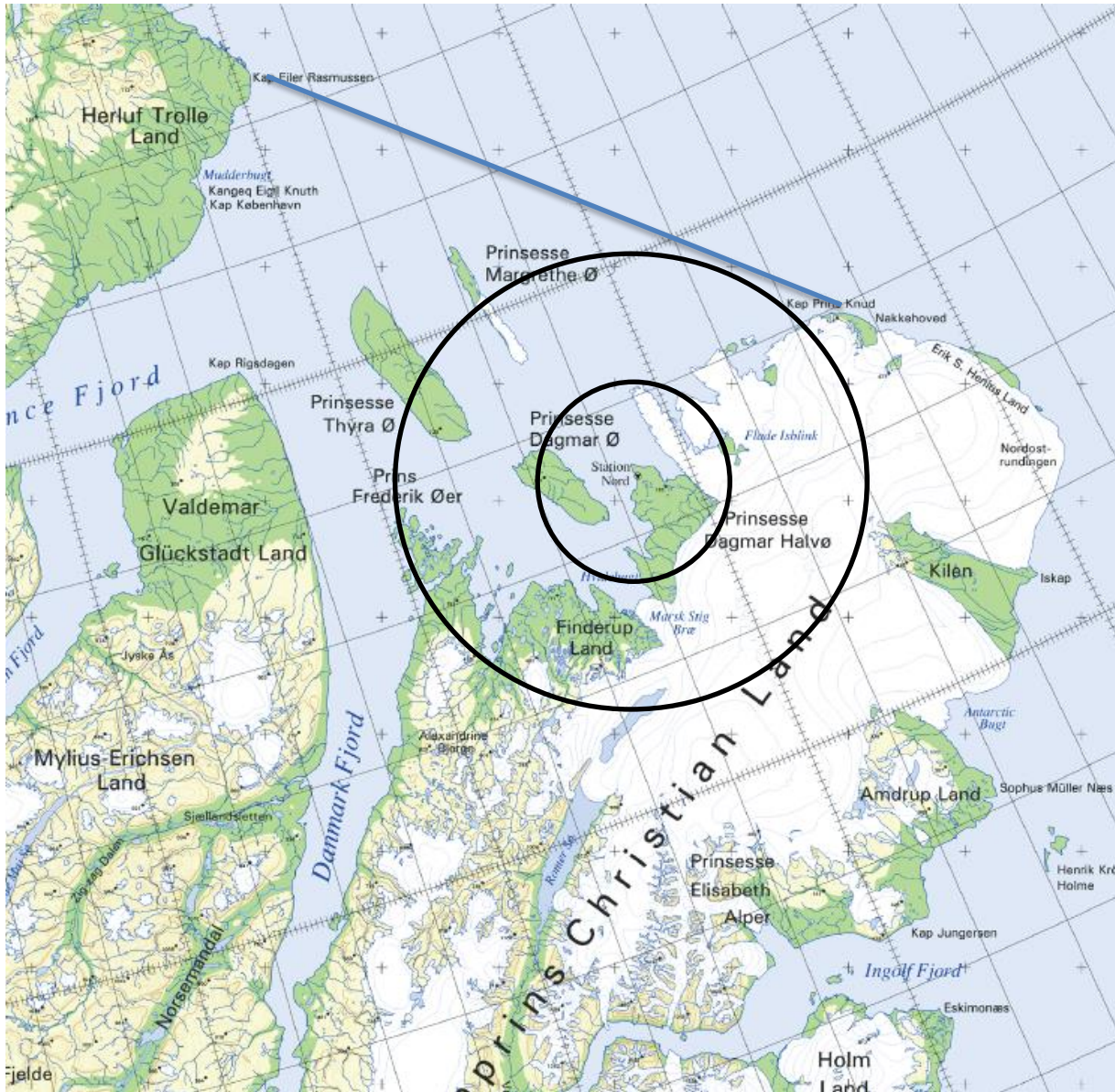


Photo: Egon Frandsen, September 1, 2014



- Blue line is approximately edge of the ice in August 2014 according to the satellite image
- Circles is approximately 20 and 50 km from Station Nord

The primary working area will be within the 20 km radius line. For work between 20 and 50 km distance from the station you will need special permission from the VRS/ASP logistics team and the military Staff at station Nord.

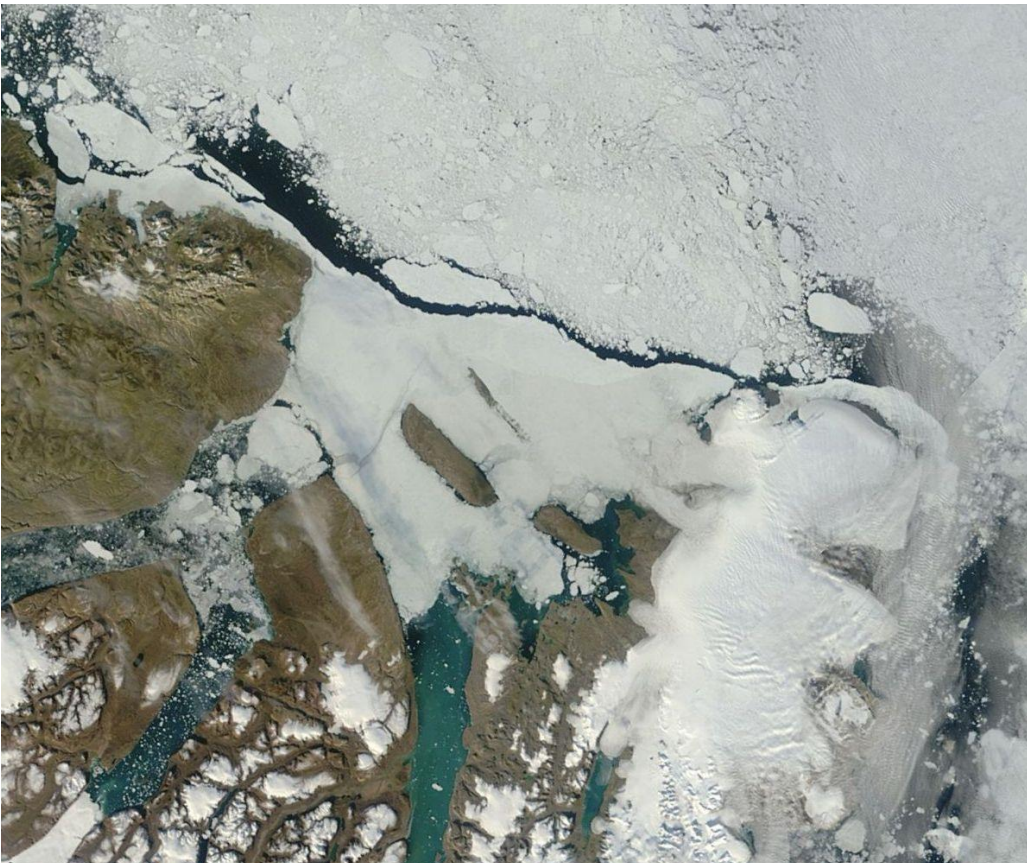
Working outside the 50 km line is not supported by VRS station or the ASP/VRS logistic team and you have to plan everything on your own. Outside the 50 km circle you will not be rescued by the Station Nord Military Staff in case of emergency. You will need to wait for assistance from outside.

5.1.1.1 Ice conditions 2014 May, 17th



From <http://ocean.dmi.dk/arctic/nord.php>

5.1.1.2 Ice conditions 2014 august, 26th



From <http://ocean.dmi.dk/arctic/nord.php>

Site manual for Villum Research Station, Station Nord

Version 2015

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5.2

5.2.1.1 Ice conditions close to Station Nord on August 28th, 2014 – Station in front and sight north



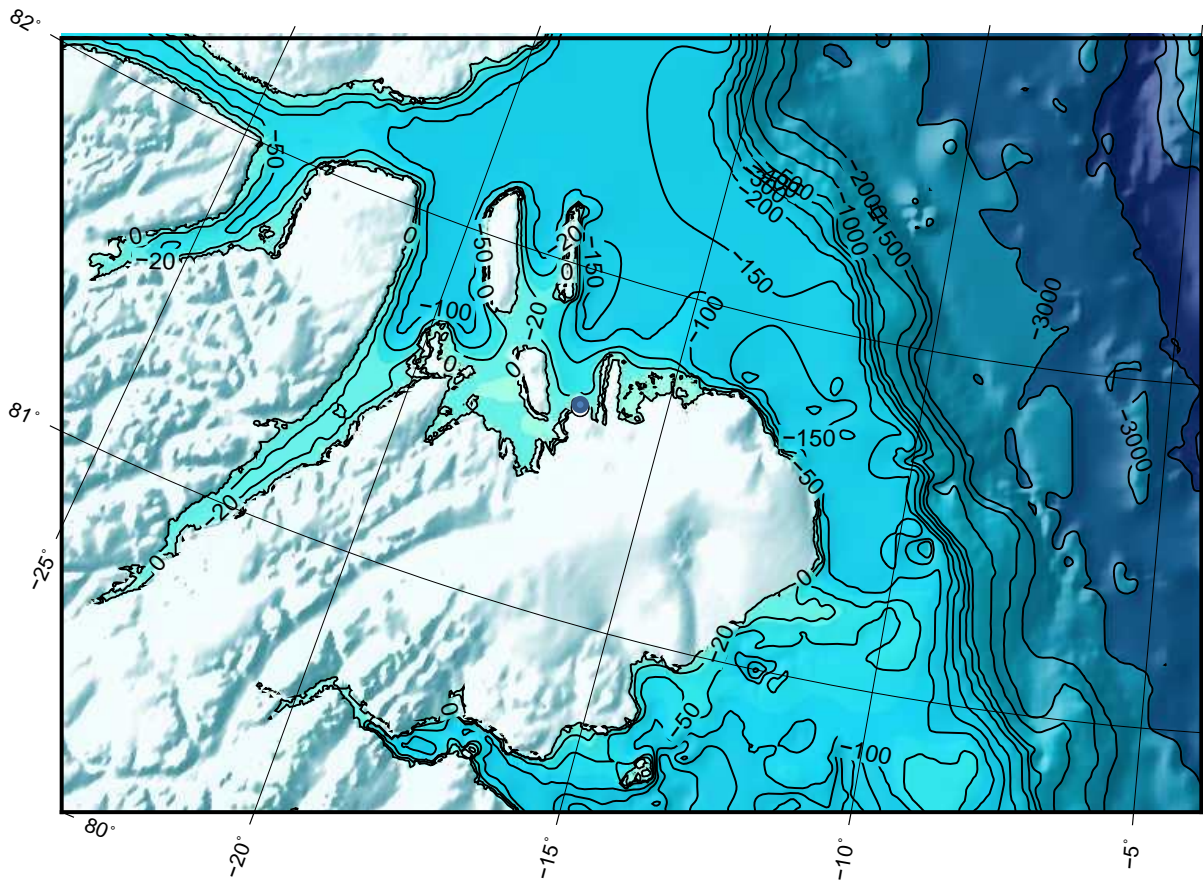
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6 Tide

The tide at Station Nord is between **xxxxx** depending of the phases of the moon. Normally we have a tide table in the residential house

7 Water depths



Section 2

Practical information for going to Villum Research Station (VRS)

8 Access to Station Nord

To access Station Nord you require permission from the Greenlandic authorities and the Danish Military. The administration of this goes through the Villum Research Station secretariat.

If you are going on an ASP project the application will be made by Egon, who will ask you for the information requested in appendix A.

Other projects must contact the VRS secretariat for application form to fill out and send to the secretariat. Further information is given on the VRS website:

<http://envs.au.dk/en/research/facilities/villumresearchstation/>

The deadline for sending applications for access in 2015 is January 15th.

We will follow the plan below, which means that we also need to have the names for each leg at this time:

Leg	Start date on leg	End date on leg	Deadline for filling out application
CRAIGG-1	February, 25 th		January 25 th
ASP-1	April, 6 th	April, 27 th	January 25 th
ASP-2	April, 27 th	May, 18 th	January 25 th
ASP-3	August, 3 rd	August, 24 th	January 25 th

9 Overview of Projects in Station Nord 2015

Leg	Start date on leg	PI	Project
CRAIGG-1	February, 25 th		
CRAIGG-1	February, 25 th		
CRAIGG-1	February, 25 th		
ASP-1	April, 6 th	Marit Solveig Seidenkrantz	Sediment cores
ASP-1	April, 6 th	Zou Zou Kuzyk	
ASP-1	April, 6 th	Lise Lotte Sørensen	
ASP-1	April, 6 th	Kai Finster	
ASP-1	April, 6 th	Nicolas-Xavier Geilfus	
ASP-1	April, 6 th	Igor Dmitrenko	
ASP-2	April, 6 th	David Barber	
ASP-2	April, 27 th	Erik Jeppesen	
ASP-2	April, 27 th	Lise Lotte Sørensen	
ASP-2	April, 27 th	Brian Sorrell	
ASP-2	April, 27 th	Feiyue Wang	

ASP-2	April, 27 th	Igor Dmitrenko
ASP-3	August, 27 th	David Barber
ASP-3	August, 3 rd	Signe Normand
ASP-3	August, 3 rd	Lise Lotte Sørensen
ASP-3	August, 3 rd	Jens Ehn
ASP-3	August, 3 rd	Virginie Galindo
ASP-3	August, 3 rd	Virginie Galindo
ASP-3	August, 3 rd	Virginie Galindo

10 Courses and training you need to have

Before going to Station Nord you need to have same courses and training on the following issues:

- Valid first aid course – and if possible extra knowledge on first aid in the arctic
- Shooting course – Ask Emmelia/Egon if you are attending from ASP
- Training in how to work and survive in cold conditions
- Knowledge on how to use Skidoos and the fundamental use/function/repair (Change sparks, refuel, check oil etc.)

11 Visa

If you are not Danish, EU, US or Canadian citizen you maybe have to apply for Visa to the Schengen area (Norway) and to Greenland. Ask Christina (levisen@biology.au.dk) for more information on the procedure. For Canadian citizens, please contact the CEOS office (Irene.Zhao@ad.umanitoba.ca) for assistance with the timelines or procedures.

12 Insurance

The Greenlandic government requires that you have SAR (search and rescue) insurance to get a permission to go into the National Park.

If you are currently employed at the Institute of Natural Resources in Nuuk you already have it.

If you are employed at Aarhus University or any other Danish or foreign institution with self-insurance, you will have to fill out appendix D at the Villum Research Station homepage:

<http://envs.au.dk/en/research/facilities/villumresearchstation/>, and include it with your Station Nord application.

All others need to buy insurance from an insurance company. Request further information on this from VRS secretary (ASP project participant will be handled by ASP (Linda/Emmelia/Egon).

13 Travel to Station Nord

There is only one way to access Station Nord, and it's by air in chartered plans.

At the moment we are expecting to fly almost all cargo with the Danish Military in a C-130 Hercules transport plane to Station Nord from Aalborg in Denmark. But since the Danish military can't promise to carry everything we – we can only use "Space available" – we are heading for chartering an Antanov 12 or 26 in February to bring cargo to Station Nord from Aalborg.

The participant in the field campaigns must go to Oslo in Norway and continue to Longyearbyen on Svalbard. From Svalbard we will charter a Dornier DO228 for the lift from Svalbard to Station Nord (about 2 hours flight)

The landing stipe in Station Nord is 3500 m long, so it's possible to land with every kind of planes with respect to the surface of the landing stripe. In some periods of the year it is too soft to land at all.

On the map below you can see the routes:



Map from NOAA

13.1

13.2 Travel plan for each leg

Leg	Latest arrival in Longyearbyen	Flying Longyearbyen – Station Nord	Field periode	Flying Station Nord - Longyearbyen	Earlist out of Svalbard
ASP-1	April, 5 th	April, 6 th	3 weeks	April, 27 th	April, 28 th
ASP-2	April, 26 th	April, 27 th	3 weeks	May, 18 th	May, 29 th
ASP-3	August 2 nd	August 3 rd	3 weeks	August 24 th	August 25 th

Luggage and cargo bringing with you on the travel

Since we are chartering the Dornier DO228 you are limited in the amount of luggage you can bring to Station Nord. You can bring 20 kg of luggage + 5 kg hand luggage. What you need to bring beside of this must be send ahead as cargo.

Look in the sections below to see what to find at the station and what you need to bring by yourself.

14 Staying in Station Nord

Once in Station Nord, there will be a mandatory introduction to the station from the staff at the Station Nord and the Scientific/logistic leader. After the introduction, you will be able to start unpacking your research equipment.

During your stay in Station Nord, there will be a scientific leader to coordinate the different projects and to coordinate with the staff at Station Nord to enable everyone to carry out their projects in a safe and positive way.

15

Leg	Start date on leg	Scientific leader	Logistic leader
ASP-1	April, 6 th		Kunuk Lennert
ASP-2	April, 27 th		Ivali Lennert
ASP-3	August, 3 rd		Ivali Lennert

In the case there is bad weather, the scientific leader makes the decision if it is safe to work on the ice or from the airboat/boats.

Prior to the end of your stay in Station Nord, you will have to finish your project two days prior to leaving for home. The last day is for packing and labeling your equipment for return. See the section for sending cargo back to DK/Nuuk/Canada.

On the day you are leaving Station Nord, you cannot plan to do anything else other than attend to your personal luggage. It's not possible to tell you what time of the day you have to be ready for pick up at Station Nord, but if the plane overnights in Station Nord, you will leave in the morning, otherwise it can be any time of day.

15 Station fee

While you are in Station Nord your project has to pay a station fee for staying at the station – in 2015 this fee is 1500 DKK/person/day. This station fee cover

- Living in the house
- Safety equipment on the station (Signal pistol, Riffle, PLB, fire alarm and so on..)
- Heating of the house and lab.
- Use of electric power and water
- Use of lab in the house and or else
- Food – there will be a cook at the military station and you will have to go there for the meals
- Sheets, bedding and towels

16 Personal packing list

You need to bring the following personal belongings to Station Nord (and maybe a little more...):

16.1 Clothes

- Clothes that are versatile, durable and comfortable
- Warm jacket – Canadien Goose or alike
- Warm pants
- Warm sweater or fleece (windblock)
- Gloves, hats, balaclavas and neck warmer
- Warm socks
- Sunglasses
- Boots – warm
- Rubber boots
- Normal clothes and underwear
- Indoor footwear to use inside the residential house (boots not allowed)
- Mukluks between September and June

16.2 Tickets, papers and good to have

- Tickets to Svalbard
- Passport
- Insurance-card
- Creditcard – for use on the way to/from Svalbard – You can't use it in N.E. Greenland
- Mobile Phone for your travel – Can't be used at Station Nord
- Papers for your project.
- Personal computer – Don't bring it from the cold into the warm and turn it on. It will die because of the condensation of moisture on the boards. Wait 20 minutes before turning on.
- Necessary personal toiletries
- Ski goggles
- Sunblock
- Multitool (Victorinox or Leatherman) – good to have but not a must – remember not to bring it in the hand luggage on the flight.

16.3 Security clothing

See the section "Safety on the Station Nord field station" below

16.4 Things you don't need to bring

- Sleeping bag
- Sheets, bedding
- Towels

Section 3

Information on the Villum Research Station (VRS)

17 Introduction to Villum Research Station

The first day at Villum Research Station, Station Nord, you will need to attend in the general introduction to the station

18 Safety at the Villum Research Station

18.1 At the station

- At the station we have smoke alarms in all sleeping rooms, in the labs and in the living room
- There are fire extinguisher in the living room, in the corridor, in the lab and in the store room (water)
- Fire blanket in the kitchen
- In the garage there are powder fire extinguisher

18.2 In the field

In the Arctic you need to take some precautions according to the climate and to the wildlife.

Never leave the station area without the following equipment in the team:

- Signal pistol
- Rifle
- GPS
- VHF radio
- Iridium, handheld
- PLB personal beacon

The logistic personal will introduce you in the use of this safety equipment and let you shoot a few shot with the rifle and the signal pistol for familiarization with the weapon.

Be aware that you are only allowed to shoot animals as self-defense. Any shooting at animals shall be reported to the Military staff at Station Nord and paperwork for explaining that it was self-defense must be done. Only Polar bear and Muskox can attack people in N.E Greenland.

18.3 You need to bring

- Survival suit, if you are going to work on the ice outside the Station Nord station
- Warm clothing or weather appropriate clothing, depending on the time of year
- Portable GPS

18.4 We already have on the station

- Signal pistols (5)
- Rifles (5)
- VHF radio (5)

- Iridium phones – portable (5)

18.5 Weapons

Shortly after arrival, everyone must practice shoot with the signal pistols and rifles to familiarize themselves with the weapons. The cartridges for the riffles are 30-06 and for the Signal Pistols it is Cal 4. This is just to get familiar with the weapon at the station. Everyone must attend a shooting course before they go to Station Nord

When you go into the field the weapon must be loaded with bullets in the cartridges, **but the chamber must be empty**. The riffle must be ready to use only by loading before shooting

The riffles and signal pistol must not be loaded when they are stored in the residential house. When you arrive back from the field you must remove the cartridges and check that no bullets are in the chamber. Then you pull the trickier up in the air outside.

Never bring a loaded weapon inside a building.

18.6 GPS

There are a lot of different GPS models, and you need to spend some time to get familiar with your GPS. You need to know how to mark a waypoint, find the waypoint again and track to a waypoint. You also need to know how to find your current position on your GPS. When you arrive at Station Nord you need to mark the station as a waypoint in your GPS so you know where to go if you get lost in bad weather.

18.7 VHF

Local communication is by VHF radio on channel 2 as a call up channel. It's possible to use VHF at the station to communicate with people working in a radius on about 20 km from the station. The logistic team will show you how to use the radio during the introduction of the station

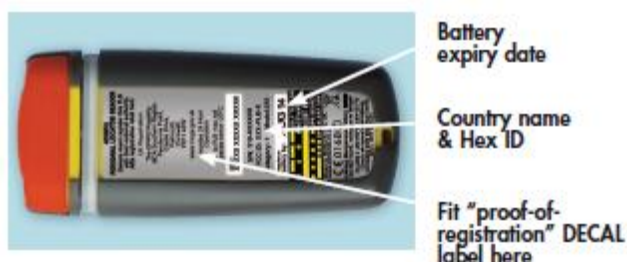
18.8 Iridium – portable

When you are going in the field you need to bring the portable iridium phone. The logistic team will show you how to use the radio during the introduction of the station

18.9 PLB

Only use the PLB in emergency. The alarm will go to an international emergency call center at activate a search and rescue alarm.

You need to check the PLB for the expiry date of the battery and press the test button to check that it works.



OVERVIEW

- Red pull handle**
Pull to expose antenna
Only pull in an emergency
Pulling breaks the plastic anti-tamper seal that can not be reset by the user
- White indicator Light**
Flashes every 3 seconds once PLB is active,
Long flash every 50 seconds means satellite transmission OK
Flashes twice a second when GPS is searching
3 rapid flashes means GPS location sent
- Antenna**
Unwraps and stands vertical once cover is off
- GPS antenna zone**
Do not obstruct
Needs a clear view of the sky for best operation
- ON button**
Press once to activate PLB
When the PLB is on, push the ON button again to make the indicator light flash an SOS signal pattern
- TEST / OFF button**
Push and hold to start the self test feature, a flash of white light indicates that the self test is successful
Once PLB is active
Hold TEST to turn PLB off
- Eyelet for lanyard**



18.10 First aid and medical assistance

Every person arriving in Station Nord must have attended a First Aid course. First aid kits are available and further medical assistance is provided by the Military personnel. To obtain SAR insurance, you must sign (confirm) that you are in good health. You are allowed the use of personal prescribed medication, which you must bring yourself, and still access the station. You will have to fill out Appendix A on:

www.zackenberg.dk/news/the-2013-field-season-at-zackenberg-research-station

18.11 Wildlife at Station Nord

At the Station Nord station, and the surrounding area, you may encounter wildlife. Typically, it is only polar bears you need to be cautious of.

You are forbidden to shoot any wildlife in N.E. Greenland with the exception of self-defense. Please refer to the Zackenberg Site manual for more specific guidelines on animals and their behavior, especially the polar bear and musk ox. See www.zackenberg.dk

19 Station Nord – Military area - guidelines

When you arrive in Station Nord you are entering a military zone and there are rules you need to follow. The Military staff is the local authority.



19.1 Local guidelines for stays at Station Nord

- All activities conducted on the station premises must comply with the rules and regulations set by the Station Nord leader (LD)
- Activities outside the station premises require permission from the Station Nord Personal
- When driving on the station premises, vigilance must be exerted at all times toward people and animals. The speed limit is 30 km/h
- Entry to buildings marked "Forsvaret" (Defense) is prohibited
- Littering is prohibited
- The use of tents throughout the station premises must comply with the rules and regulations set by the LD
- Urinating and defecation are restricted to the toilet facilities
- Walking/driving on or across the runway is prohibited
- Walking/driving on the apron is only allowed when loading/offloading planes
- Smoking is prohibited on the apron, as well as near fuel depots and filling stations
- Smoking indoors is prohibited
- Cigarette butts etc. must be placed in the bins
- The Defense personnel at Station Nord have police authority throughout the premises and can thus order inappropriate conduct or activities to cease immediately
- At any time, the LD maintains the right to impose additional restrictions on visitors' stay at Station Nord

20 Station Nord welcomes you

20.1 Accommodation

- Please use as little water as possible as the water must be transported in a truck, from a lake 2.5 kilometers away

- At all toilets you will find both a urinal and freeze toilet. We ask all men to use the urinal, if they only have to urinate.
- There aren't any cleaning personnel at the Station, so everyone is responsible of cleaning and emptying the bags in the freeze toilet. When the toilet bag is full you close it with the brown tape around and an extra plastic bag around. Dispose it in the bucket located outside the building. When you are finished you'll put two new plastic bags in the freezing toilet. The freezing toilet must be emptied before you leave the area.
- Please leave the footwear in the entrance hall before entering the buildings.
- Please divide all garbage as burning material ("brændbart"), metal and glass. If disposing larger amount of garbage, as for example by cleaning up after an expedition, use large barrels. Sort and clean garbage for possible food items, as this could mess up the plane during transportation

20.2 Mealtimes

Weekdays	Weekdays	Saturday	Sunday
Breakfast	8:00 am	9:00 am	Selfservice
Lunch	1:00 pm	1:30 pm	Selfservice
Dinner	6:30 pm	7:00 pm	6:00 pm

Sunday breakfast and lunch is self-service. The cook has prepared some dishes which are in the refrigerator in the kitchen. These you are to take from. Please clean up after yourself.

Everybody must show up on time for the meals – if unable to make it, you must inform the cook ahead of time, otherwise the cook will not be able to plan ahead.

20.3 Smoking

No smoking is allowed inside the buildings

Outdoors the cigarette butts must be disposed in the barrels marking the roads. It is very important not to dispose the cigarette butts on the ground. The dogs will eat anything they find on the ground and will get very sick if eating the cigarette butts. In general, if you find garbage on the grounds please pick it up and place it in the appropriate garbage containers.

20.4 Travel and whereabouts

- It is allowed to move around the Station area at any time. Buildings marked with "Authorized personnel only" are restricted area and can only be entered in the company of the Station personnel.
- Building 3 is the home of the station personnel – please respect their privacy!
- If you wish to travel outside the grounds contact the base commander for permission.

20.5 Vehicles

If you need a vehicle, please contact the Station personnel as well. All vehicles and machinery is to be returned cleaned and re-fueled. Please park the vehicle – with the key – outside the workshop. Remember to turn off the radio and the main switch. Please drive carefully; injuries and accidents – regardless how minor is to be reported to the base commander.

Entry of the runway is prohibited.

20.6 Work and injuries

While working at Station Nord please use common sense. Nearest emergency room is far away and safety is always first priority. In case you need pharmaceuticals or other medical assistance, contact the station personnel.

20.7 Recreation

In building 35 – the bar – there's an opportunity to relax watching a movie, play pool, cards, dart, ibary etc. The bar is open at all times and operated by self-service. Beer, soda and licor (2cl) cost 3 US dollar each, coffee and tea is free. Please record your expenses in the bar notebook and you will be billed of the end of your stay

20.8 E-mail

It is not possible to send e-mails when staying at Station Nord, it's only for operative purpose (As scientist you can send email from the scientific station – see the section about iridium)

20.9 Phone

There is an iridium satellite phone available at the station. Please contact the station personnel if you wish to make a phone call. The rate pr. minute is 3 US dollar

20.10 Gift shop

If you wish to purchase items from the gift shop, please contact one of the Station personnel

20.11 Departure

Please remove the sheets and place them folded on top end of the bed. Empty you trash and close doors and window. Tidy up and clean your room before leaving.

20.12 Questions

If you have any kind of questions lease contact the station personnel.

21 Villum Research Station (VRS) guidelines

Beside the guidelines for the Military part of Station Nord there are some additional guidelines for the VRS.

22 Practical information

22.1 General information

- Don't leave anything outside. There are a few dogs who can eat everything, and it can blow up very sudden. We don't want thing to blow around at the station area or blow away.
- No outdoor footwear is allowed inside the residential house – bring indoor footwear for working in labs.
- Smoking is not allowed inside any building at the station. You can smoke outside but you must place the butts placed in the bins.
- Be aware of Polar Bears. Look around when you leave a building to ensure there are not Polar bear – well it doesn't happen so often... If you see a Polar Bear - at the station area or in the field – you must warn everyone on the VHF radio. Observe the Polar bear until it leave the area.
- Musk ox is not so common in the Station Nord area, but if you meet one you must keep distance.
- Be aware that you are not allowed to bring anything out of the National Park without permission. If you bring something out without permission your items will be confiscated and you will receive a note.

22.2 The Kitchen

You are free to use the kitchen for social or private use. You just have to clean the kitchen after use and run the dishwasher

22.3 Washing machine and tumble drier

At the bath room there is a washing machine and a tumble drier. You are free to use it, but please be aware of the use of power and water.

When you leave the station you must remove the linens from your bed at leave it in front of the washing machine. Then the next visitors at the station have to wash it. Normally the logistic team will do the washing.

22.4 Garbage

All garbage must be divided into metal, glass and burnable garbage (Chemical and biological waste – see separate section). When the bin inside the house is full you must empty it into the ones outside the house. The introduction to the station will tell you more specific.

22.5 Cleaning

You must participate in the work to keep the house nice and clean so everyone can feel comfortable. You need to vacuum the floors every second day and keep the kitchen , bathroom and toilets clean every day.

When leaving the house you must:

- Wipe with a damp cloth on all surfaces
- Fridges must be emptied and cleaned
- Micro wave oven must be cleaned
- Oven in the kitchen must be cleaned
- All floors must be vacuumed and washed
- Bedding and linen placed in the laundry basket in front of the washing machine
- Run the dishwasher and empty it
- All bins are emptied
- Clean toilet and bathrooms.

22.6 Water

The Military staff provides the VRS station with water, which means that the same rules are used as for the Military station: **Use as little water as possible.**

22.7 Electrical power

Since electrical power is very expensive at Station Nord (All fuel for the generator is flown)

22.8 Heating

Since heating is relatively expensive, we kindly ask you to keep windows and doord closed except from shortly ventilation.

22.9 Fuel

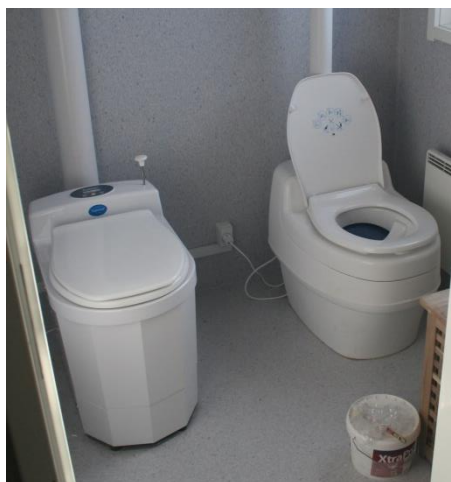
The ASP-projects have our own fuel for the airboat. All others use of fuel is from the VRS station. Ask the logistic team what to do.

22.10 Accommodation

All accommodation on the VRS station will be in double rooms. As far as possible we will accommodated people who knows each other in the same rooms.

No outdoor footwear is allowed inside the residential house – bring indoor footwear for working in labs.

The toilets at the VRS station is - her skal vi have en beskrivelse af hvordan toiletterne virker og hvad men skal gøre



24

23 Technical information

The power supply at the station is 230V, 50Hz AC power. The plugs are Danish standard plugs



With ground



or without ground



24 Communication to/from VRS

It's not possible to use your normal mobile phone in Station Nord. But it's possible to reach out to the world by iridium systems. We have portable iridium phones to carry in the field for security reasons and an Open Port iridium system where it's possible to send and receive emails. You are not able to check your normal email home at the office, but the email address vrs@onsatmail.com is the one to use in Station Nord. Since it's expensive to send and receive on the iridium there is a limit on the mail size on 1MB. Mails above this size will be rejected.

The price for sending and receiving mails will be 20 US\$/MB – only allowed to send attached file by agreement from the scientific or logistic leader.

The price for using the iridium to call home will be 2 US\$/minute.

The VRS/ASP logistics staff at the VRS station will show you how it works, and there will be a list to note when you have used the iridium system – see appendix 4

The iridium numbers to the station and the contact information to other stations along the east coast of Greenland will also be in appendix 4

Iridium

For communication outside of the station area, we have an iridium system. For safety reasons, we always bring portable iridium in the field which can reach all over. There are 3 portable iridium phones at the station and an open port iridium system at the VRS station. Beside of this the ASP logistic team will bring 2 portable iridium phones as well

24.1 E-mail

It is possible to send and receive text emails on the open port iridium system at the scientific station. Look into the section above.

25

25 The Villum Research station

The Scientific Station has essentially two buildings – the garage and the residential house. Beside these, there the military Station with more buildings.

26 Garage

The garage is approximately 150 square meters and contains storage shelves, and tools for public use. Always bring back the tools you borrow. There will be a list where to write your name and what kind of tool you borrow.

Beside of this the garage is used for winter storage of equipment belonging to the station, ATV's and Skidoos etc.



The garage from outside



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The garage inside



There is a small storage room inside the garage



Tool desk in the garage

27 Residential house

In the residence, there are 4 laboratories, a store room for household items, 7 rooms with double occupancy each, bathrooms, toilet, and combined living room and kitchen. Then there is a small apartment for the logistic personel.

Beside of this there are technical rooms. Se the drawing below – sorry the labels are in Danish!





While staying at the Station Nord station, you are expected to take turns doing the dish washing, cleaning, and helping each other.

28 Laboratory facilities

There are 4 labs at the station – “Dirty” lab, Chem lab, Biology lab and Clean lab.

“Dirty” lab:

In the “dirty” lab you can work with samples such as seal, fish and other larger biological specimens, soil, sediment and rock samples. The room is equipped with heating oven for drying samples and a freezer (-20°C) for storing samples under dark and temperature controlled conditions. The laboratory has a large sink with tap water and access to ion exchanged water. Entrance to the laboratory is through a large door towards the outside, which permits samples to be carried directly into the laboratory



Equipment in the “dirty lab”:

- Freezer (-18°C), approx. 125 liter
- Heating oven
- Laboratory dish washer



- 4 Freezers for experimental works

Chem lab:

The second laboratory will be a ‘Chem-laboratory’ where e.g. samples can be extracted and equipment prepared for use.

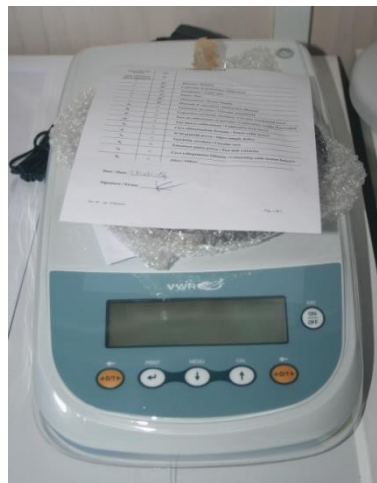




- Balance



220g, 4 digits



Max 4200g, 2 digits

- Milli-Q water
- Pump for filtration



- Fume hood

Biology lab:

The Biology laboratory will be dedicated to studies sensitive to contamination.



- Ultrasonic bath
- Sterilizer
- LAF-bench
- Fridge
- Well-equipped labs with normal lab equipment





Site manual for Villum Research Station, Station Nord

Version 2015

Henrik Skov, John Lau Hansen and Bjarne Jensen, Department of Environmental Science, Aarhus University

Egon Frandsen, Arctic Research Center, Aarhus University

Morten Rasch, University of Copenhagen

Clean lab:

There will be limited access to the Clean laboratory. The entrance will be through an air lock. This laboratory will be dedicated to “clean” biological and microbiological experimental work.



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28.1 Other Equipment

- Battery charger 230V -> 12V (Exide 12/7) – For batteries on 1-150AH (VRS – 5)
- Batteries, Gel, 110 AH (Exide ES1200) (VRS – 10)
- Bandsaw, Stainless Steel (VRS - 1)

BandSaw	SE 165
Blade	1650 mm
Cutting Capacity	240mmx190mm
HP	1,5
Electrical	400V



29 Field equipment

There is some standard equipment at the station but beside of that you must bring your own consumables and equipment.

Field equipment on the VRS station 2015:

- Romerloth, 80 mm cores (GCRC – 1)
- Niskin water sampler, 5 liters (VRS - 5)
- Kovac icecore system (10 cm) (VRS – 1 + GCRC -1)
- Kovac icecore system (6 cm) (GCRC - 2)
- Auger (2,5 cm), manual (GCRC – 1)
- Auger (25 cm), engine (VRC - 2)
- Tripod (VRS – 1 + GCRC - 1)
- Generator 2000w Honda (VRS - 3) 12V and 230V output
- Arctic tent (CEOS - 1)

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- Kajak core sampler 55mm cores (VRS – 1)
- Triangular dredge 55x55x55 cm (VRS - 1)
- Wp2 Plankton net 42µm, 57cm in diameter (VRS - 2)
- Wp2 Plankton net 200µm, 57 cm in diameter (VRS - 2)
- Van Veen Grap 250cm², (VRS - 1)



30 Local transportation – ATV, Airboat and Skidoo

30.1 Transport at the station



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ATV (VRS - 3)



Skidoo (VRS - 5)



Airboat (ASP - 1)

Zodiac boat (VRS – 2)

Section 4

Cargo

31 Equipment to Station Nord

You can only send cargo to Station Nord by air.

31.1 Equipement send to Station Nord by air

There is no fixed deadline on sending cargo by air to Station Nord. However, due to inflexibility of cargo on the planes to Station Nord, your cargo must be in DK no later than January, 31st 2015. If you are going to Station Nord on an ASP project you must send it to:

Aarhus University
Arctic Research Center (ARC)
Dept. of Bioscience
Vejlshøvej 25
DK-8600 Silkeborg
Denmark
Att: Egon Frandsen

If you are going to Station Nord on another project than an ASP project you must contact the Villum Research Station secretary to get information where to send your cargo.

Procedure – ASP projects

Contact Emmelia Wiley on email Emmelia.Wiley@umanitoba.ca if you are from CEOS, Winnipeg or Egon Frandsen on email erf@bios.au.dk if you are from Nuuk or DK. You must send a list of what kind of cargo you want to send using the “List of cargo for Station Nord” in Appendix 1.

Appendix 1 must be send by mail to Emmelia Wiley Emmelia.Wiley@umanitoba.ca or Egon Frandsen erf@bios.au.dk prior to sending cargo to Station Nord:

- Page 1-2 in Appendix 1 must be filled out prior to sending cargo to Station Nord
 - Don't pack any boxes in Fiberboard, they won't stand the handling to Greenland
 - Dangerous goods are often packed in fiberboard boxes. They are UN-boxes and able to withstand rain for several hours. But it would still be a good idea to have plastic/wood/metal boxes outside and then labeled with “Overpack” according to the IATA rules

Save Appendix 1 on your computer and send the list to Emmelia Wiley Emmelia.Wiley@umanitoba.ca or Egon Frandsen erf@bios.au.dk. It is very important that the weight and volume is correct, because these values are used for loading the plane with the possible weight with respect to the payload and space.

- Then you will receive labels to your boxes listed in Appendix 1, with a unique number so we are able to track every single box to Station Nord.
- Attach the labels to each boxes
- Return any transport document for the transportation to Emmelia Wiley Emmelia.Wiley@umanitoba.ca or Egon Frandsen erf@bios.au.dk with AWB number or tracking number from the shipping company

- Page 3 in Appendix 1 is the Pro forma invoice for your cargo – will fill out almost automatically when you fill in page 1-2 in the appendix 1.

Deadlines on cargo by air to Station Nord in 2014 in the table below

Leg	Start date on leg	Deadline sending - Expected	Deadline arrival inDenmark
1	April, 30th	February, 28th	January, 31st
2	May, 21st	February, 28th	January, 31st

31.2 Dangerous goods

If any of the cargo to Station Nord is classified as dangerous goods, you have to fill out dangerous goods shipping paperwork and pack according to the IATA 56th edition (2015) guidelines for the dangerous goods you have. This must be done by someone with the authority to do so. Please see Egon for more information (DK) or Emmelia Wiley (CA).

31.3 Lithium Batteries

Lithium batteries are dangerous goods. Please contact Egon or Emmelia. Be aware that lithium batteries marked with CAO (Cargo airplane only) cannot be transported to Station Nord, because there are no flights with cargo only. Very often your lithium batteries can be packed different so they are allowed on passenger flights. From 2015 Lithium metal batteries are prohibited on passenger flights.

31.4 Biological resources

You are not allowed to transport any rocks, water, ice or biological samples out of Greenland without permission. Fortunately, it is easy to get the permission. You need to fill out the application in appendix 3A (Example in Appendix 3B and licence in Appendix 3C) and send it to Camilla Bruun Djarnis cabd@nanog.gl by the Greenlandic authorities with cc to erf@bios.au.dk. You must include this permission when transporting your samples. Otherwise, you run the risk that your samples will be confiscated when you leave Greenland and you will be fined. Consult Egon (ASP Projects) or the Villum research secretary (other projects) if more information is needed.

31.5 Packing and labeling

You must:

- Pack you equipment in boxes (not Fibreboard boxes)
- Dangerous goods must be packed according to the IATA rules. If you have any cargo that needs the CAO label (Cargo Aircraft Only), you must contact Egon (ASP projects) or the Villum research Secretary (Others projects), because the space on Cargo flights are limited, so we have to coordinate carefully.
- Attach the label you have got from Egon/Emmelia (ASP-projects)
- Finish the pro forma invoice in Appendix 1, and handle it to the shipping company and to Egon/Emmelia (ASP-Projects)



**You cannot
send cargo
with this
label to
Station
Nord**

32 Shipping cargo back to DK/Nuuk/Canada

Please download appendix 2 to your computer before you go to Station Nord – you will not be able to download it at the Station Nord station.

32.1 Shipping by air

It must be labeled with the return address and mode of transport in appendix 2 whether it's for shipment by air. You must:

- pack your equipment in boxes with a single box weight below 50 kg
- label with the label in Appendix 2 where to send the equipment
- finish the pro forma invoice in Appendix 2 on your cargo





When Appendix 2 is filled out you must send it to Egon erf@bios.au.dk. All cargo will go to DK from Station Nord and will be distributed from DK.

Section 5 – Appendix

33 Appendix 1 – Cargo list

Package number	Type of Packing	Description of content	Weight (kg)	Volume (m ³)	Value (CAD/DKK)	UN – make DG document	Keep Frozen		Keep refrigerated		DO NOT FREEZE	Latest arrival at field site	Others - Specify
							Yes	No	Yes	No			
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
Total Packages:			Total (kg):	Total (m ³):	Total Value:								

34 Appendix 2 – Cargo label

	<h1>34.1 Cargo label for Station Nord</h1>	
Consignee:	Shipper:	
In transit:	Contact: Phone: Email:	
	Date:	
	Signature, and name of shipper:	
Custom Broker:	Package Number:	Weight (kg):
Field Site: <h1>STN</h1>	Latest Arrival: <h1>April 6</h1>	
Dangerous Goods: Yes <input type="checkbox"/> No <input type="checkbox"/> UN Number:	Additional handling Information: <div><div>Keep Frozen  KEEP FROZEN</div><div>Keep refrigerated  REFRIGERATE DO NOT FREEZE</div><div>DO NOT FREEZE  DO NOT FREEZE</div></div>	