



# NETHERLANDS ARCTIC STATION



## STATION NAME AND OWNER

The Netherlands Arctic Station is owned and run by the Arctic Centre of the University of Groningen.

## LOCATION

The Netherlands Arctic Station is situated in Kongsfjorden on the island of Spitsbergen and is part of an international research community in the former mining town of Ny-Ålesund, Svalbard. In this town, more than 10 nations have their own station while using shared facilities for meals and recreation. The whole local community is focussed on science and maintenance of infrastructure. Several stations have independent terrestrial research programmes and the Netherlands Arctic Station is the smallest of all.

## BIODIVERSITY AND NATURAL ENVIRONMENT

Kongsfjorden is a beautiful high arctic environment with several glaciers terminating in the fjord. The raised beach terraces are sparsely vegetated with dense moss cover around small tundra lakes and below bird cliffs. Locally there are clear traces of former human activity by trappers and from coal mining. At present, the whole area is well-protected and a special permission is needed

to enter the islands during the bird breeding season. In 1978, reindeer was re-introduced and since 1982 barnacle geese have established a colony and are regularly feeding between the houses. Both herbivores have a clear impact on the vegetation.

## HISTORY AND FACILITIES

From 1916 to 1968, the village of Ny-Ålesund was a coal mining settlement. This village has now developed into a unique mix of stations, laboratories, and research infrastructure. There is a small international community of 25 to 110 people – all temporal residents. Tourists are discouraged to stay overnight. In 1990, the University of Groningen initiated a project on barnacle geese and later joined the shared facilities with the establishment of Netherlands Arctic Station. The station consists of two small buildings for lodging with electricity but no plumbing. Shared facilities in town offer unique high-standard science and logistic support.

## GENERAL RESEARCH AND DATABASES

Research focusses on the role of barnacle geese in the arctic ecosystem. Nutrient cycles, plant productivity, and vegetation





patterns are studied to understand plant-herbivore interactions. Behaviour, timing, and breeding success of individually ringed geese are observed over their lifetime, and the effect of predators is studied as a dynamic interaction. Population trends of plants, herbivores, and predators are monitored in a warming environment. Long term experiments include grazing enclosures and greenhouses on paired vegetation plots. There are also projects focussing on the history of human exploitation and the effect of tourism on cultural heritage.

### HUMAN DIMENSION

The local community in Ny-Ålesund is a mixture of nationalities from the various stations. The area is owned by a company called Kings Bay, taking care of the logistics for the entire village. Ny-Ålesund has no permanent residents and all activity is linked to science. The closest town is the Norwegian village of Longyearbyen, which is the main hub of Svalbard. In Longyearbyen, permanent residents are few (c. 2000). There are no indigenous people and most inhabitants originate from the Norwegian mainland and live on Svalbard

only because of their temporal job assignment. Tourism, local administration, science, and coal mining are the most important sources of income.

### ACCESS

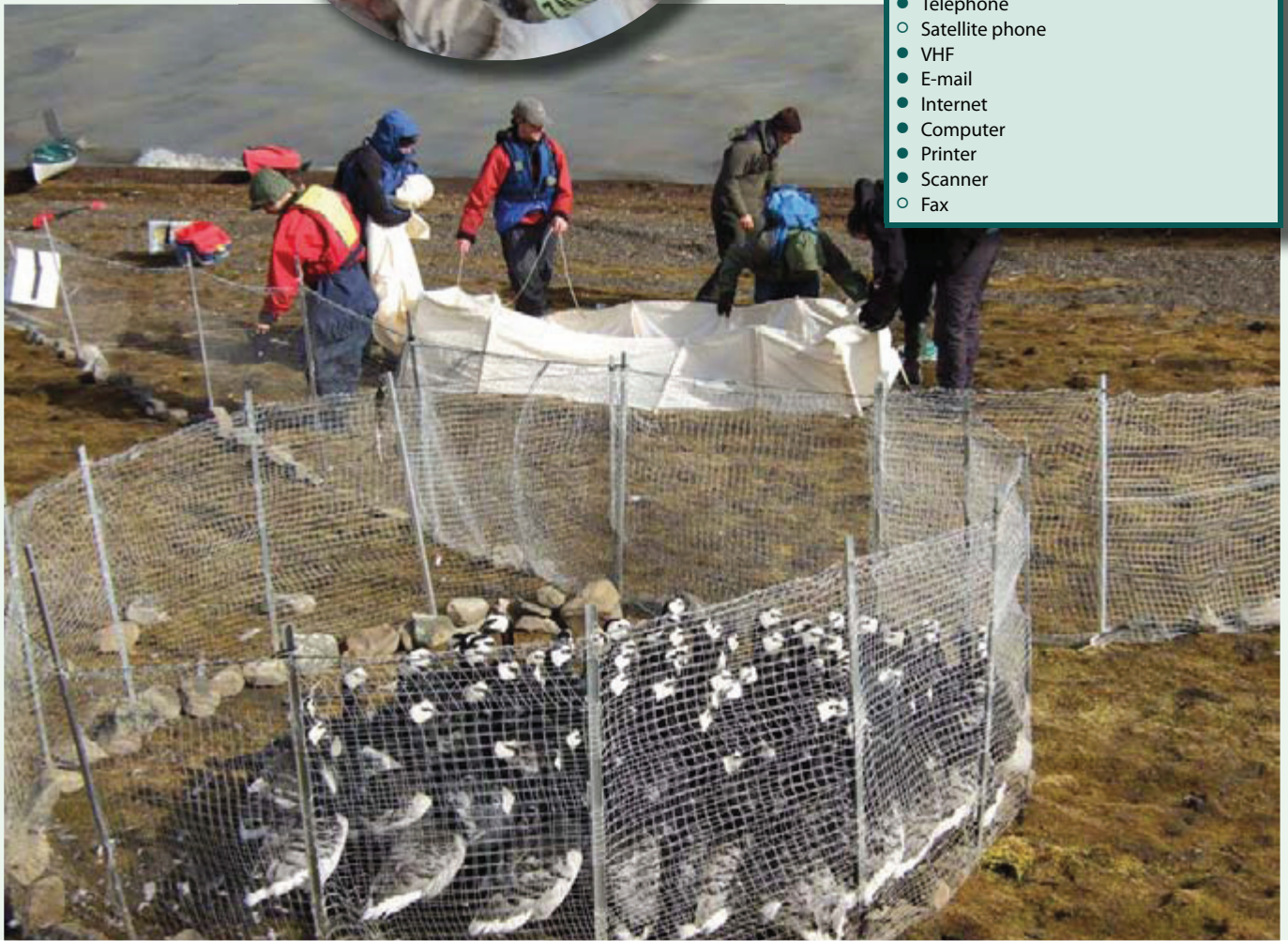
Throughout the year, Kings Bay organises two flights per week with a small plane (14 passengers) between Longyearbyen and Ny-Ålesund. In summer, there are about 30000 tourists landing by boat for just a few hours. There is

only a limited amount of roads near the village. Local transportation is possible by car, bicycle, snowmobile, or foot. Small boats are used for transportation inside the fjord.





Category	Sub-Category	Netherlands Arctic Station
Website		www.arcticstation.nl
Country		Svalbard/The Netherlands
Opening year		1995
Operational period		Mid June to mid August
Permitting issues categories	Permits required for access to the station	Yes
	Permits required for studies	Yes
	Contact (permit issues)	m.j.j.e.loonen@rug.nl
Facility owner and manager	Name of the facility owner	University of Groningen, Arctic Centre
	Owner status	Private
	Institution responsible for managing the station	University of Groningen, Arctic Centre
	Contact (access to station)	m.j.j.e.loonen@rug.nl
Other institutions	Name	–
	Country	–
Location	Geographical coordinates	78°55'32" N, 11°56'05" E
	Altitude of station	10 m a.s.l.
	Min. altitude within study area	0 m a.s.l.
	Max. altitude within study area	500 m a.s.l.
	Nearest town/settlement	Longyearbyen (2060 inhabitants)
	Distance to nearest town/settlement	115 km
	Map	1:100 000
Climate	Climate zone	High Arctic
	Permafrost	Continuous
	Years measured	–
	Mean annual temperature	-6 °C
	Mean temperature in February	-14.6 °C
	Mean temperature in July	4.9 °C
	Mean annual wind speed	4 m/s
	Max. wind speed	21.6 m/s
	Dominant wind direction	NW
	Total annual precipitation	400 mm
	Precipitation type	Snow, rain
Ice break up	Lakes: May/June; Sea: May	
Station facilities	Area under roof	114 m <sup>2</sup>
	Scientific laboratories	16 m <sup>2</sup>
	Logistic	16 m <sup>2</sup>
	Number of rooms (beds)	6 rooms (8 beds)
	Number of staff on station (peak/off season)	1/0
	Max. number of visitors at a time	7
	Showers	–
	Laundry facilities	–
	Power supply (type)	220 V
Power supply	24 hours per day	
Scientific equipment	Specific device	Very basic, blood sampling
	Scientific services offered	–
Medical facilities	Medical facilities	Basic
	Medical suite	–
	No. of staff with basic medical training or doctor	–
	Distance to hospital (estimated time)	115 km
	Compulsory safety equipment	Weapon, VHF radio, survival kit
Landing facilities	Airstrip (Length × Width)	800 × 50 m
	Airstrip surface	Gravel
	Helipad	Yes
	Ship landing facilities	Port, landing wharf, pier, pontoon
Vehicles at station	Sea transportation	Aluminium small boats
	Land transportation	Bicycle
Transport and freight	Transport to station	Plane
	Number of ship visits per year (period)	Freight once per summer month, tourist cruiseships daily (May to November)
	Number of flight visits per year (period)	2 per week all year (year-round)



Features within study area	
<input checked="" type="radio"/>	Ice cap or glacier
<input checked="" type="radio"/>	Permanent snowpatches
<input checked="" type="radio"/>	Mountain
<input checked="" type="radio"/>	Valley
<input checked="" type="radio"/>	Shoreline
<input checked="" type="radio"/>	Tundra
<input type="radio"/>	Tree line
<input checked="" type="radio"/>	Other (Bird cliffs and small islands)
<input type="radio"/>	Yes
<input type="radio"/>	No
Main science disciplines	
<input checked="" type="radio"/>	Anthropology, Sociology, Archaeology
<input type="radio"/>	Astrophysics
<input type="radio"/>	Atmospheric chemistry and physics
<input type="radio"/>	Isotopic chemistry
<input checked="" type="radio"/>	Climatology, Climate Change
<input checked="" type="radio"/>	Environmental sciences, Pollution
<input checked="" type="radio"/>	Geodesy
<input type="radio"/>	Geology, Sedimentology
<input type="radio"/>	Geophysics
<input type="radio"/>	Glaciology
<input type="radio"/>	Geocryology, Geomorphology
<input type="radio"/>	Soil science
<input type="radio"/>	Human biology, Medicine
<input checked="" type="radio"/>	Mapping, GIS
<input checked="" type="radio"/>	Marine biology
<input type="radio"/>	Oceanography, Fishery
<input type="radio"/>	Microbiology
<input type="radio"/>	Hydrology
<input checked="" type="radio"/>	Terrestrial biology, Ecology
<input type="radio"/>	Paleolimnology
<input type="radio"/>	Paleoecology
<input checked="" type="radio"/>	Limnology
Workshop facilities	
<input type="radio"/>	Metal workshop
<input type="radio"/>	Wood workshop
<input type="radio"/>	Plexiglas workshop
<input type="radio"/>	Staff available to assist with constructions
Communication	
<input checked="" type="radio"/>	Telephone
<input type="radio"/>	Satellite phone
<input checked="" type="radio"/>	VHF
<input checked="" type="radio"/>	E-mail
<input checked="" type="radio"/>	Internet
<input checked="" type="radio"/>	Computer
<input checked="" type="radio"/>	Printer
<input checked="" type="radio"/>	Scanner
<input type="radio"/>	Fax