Overview of the West Siberian component of the Arctic Vegetation Archive

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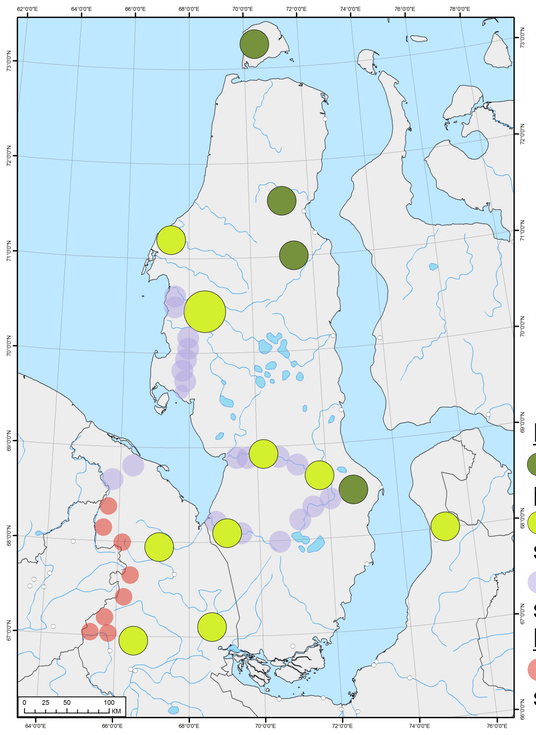
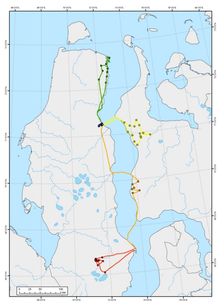
Numerous relatively recent plot-based (relevé) datasets are known from Yamal and Gydan peninsulas region of northwestern Russia. Other investigators from earlier years have also collected abundant floristic information including: O. Rebristaya (2000) and Rebristaya & Khitun (1994, 1998), flora of the Yamal and Gydan regions; S. Pristyazhnyuk (1994), disturbed habitats, mainly lichens and vascular plants;N. Andreyashkina & Peshkova (1995), mainly vascular plants; M. Boch et al. (1971), wetlands, mainly vascular plants and bryophytes; S. Gribova (1985) and Gribova and Potemkin (1988), mainly vascular plants and bryophytes; L. Meltser (1977), mainly vascular plants; I. Czernyadjeva (1993, 2001), mosses; and M. Magomedova et al. (2006), Yamal vegetation, mainly lichens. The datasets reviewed here are considered to be the most available and complete for this region.



S. Ektova and **L. Morozova**
Institute of Plant and Animal Ecology UB RAS, Yekaterinburg, Russia

Low tundra
relevés, phytomass
relevés, lichen synusias, phytomass
relevés, lichen synusias
Mountain tundra
relevés, lichen synusias, phytomass

Svetlana Ektova and Lyudmila Morozova, Institute of Plant and Animal Ecology, UB RAS (Yekaterinburg), have one of the largest datasets (more than 690 relevés). Their research was carried out in the Polar Urals and the Southern, Middle and Northern Yamal Peninsula in 1990-2012. The data have been used in a number of publications mostly focused on lichens and the effect of reindeer overgrazing on vegetation (e.g., Ektova and Ermokhina 2012; Golovatin et al. 2010, 2012; Kryazhimskii et al. 2011). Their relevés include full lists of vascular plants and lichens and dominant bryophyte species. The datasets include additional information on 13 key sites with detailed description of lichen synusias (1600 plots). Eleven sites have phytomass data. The relevés have coordinates and some some environmental information.



Set of photos

K. Ermokhina, A. Mikheeva

Dataset of 4607 photos taken from helicopters is held by Ksenia Ermokhina and Anna Mikheeva (Lomonosov Moscow State University). All photos include GPS coordinates and orientation data in ARCGIS project file.

Classification of vegetation (Braun-Blanquet)

K. Ermokhina

Alliance Luzulo–Festucion rubrae all. nova hoc loco
- *as. Rumicietum graminifolius ass. nova hoc loco* (2 subas., 2 var.) and *as. Salicetum nummulariae ass. nova hoc loco* (7 subas., 2 var.)

lichen polygonal tundra; subhorizontal plains of marine terraces covered by sand deposits

Alliance Equiseto–Salicion glaucae all. nova hoc loco
- *as. Poo–Caricetum concolor ass. nova hoc loco* (7 subas.) and as. *Bistorto-Betulion nanae ass. nova hoc loco* (7 subas.)

dwarf birch-willow tundra; clay marine terrace slopes affected by cryogenic landslides

Alliance??
- *as. Vaccinio–Betuletum nanae ass. nova hoc loco*

dwarf birch tundra; clay marine terrace slopes and subhorizontal plains

Alliance??
- *as. Luzulo–Polytrichetum juniperinum ass. nova hoc loco*

grass-moss tundra; snow patches on marine terrace slopes

Alliance??
- *as. Alopecuretum pratensis ass. nova hoc loco*

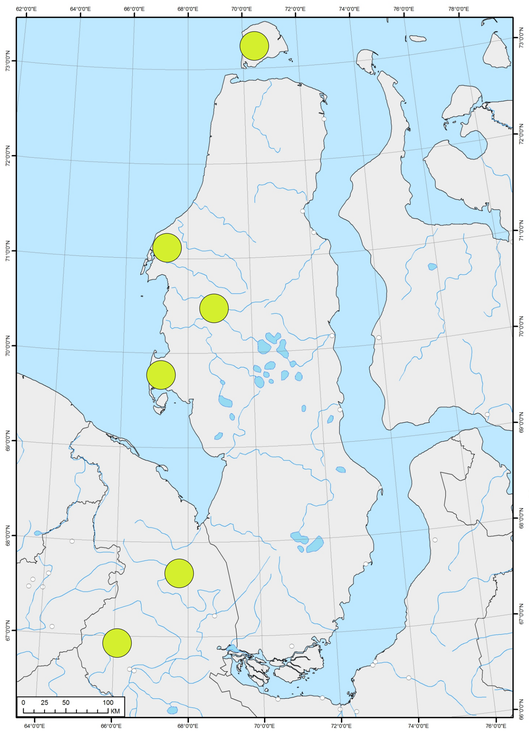
forb-grass meadows; shearing surfaces of young cryogenic landslides

S. Pristyazhnyuk, M. Telyatnikov

Alliance Oxytropido sordidae–Tanacetion bipinnati all. nova hoc loco
- *as. Cerastio maximi–Salicetum nummulariae ass. nova hoc loco*
- *as. Antennario lanatae–Arctoetum alpinae ass. nova hoc loco*
- *as. Diantho repentis–Festucetum ovinae ass. nova hoc loco*

Alliance Polemonio acutiflori–Veratrion lobeliani all. nova hoc loco
- *as. Polemonio acutifl ori–Veratretum lobeliani ass. nova hoc loco*
  Subas. typicum subass. nova hoc loco
  Subas. artemisietosum tilesii subass. nova hoc loco

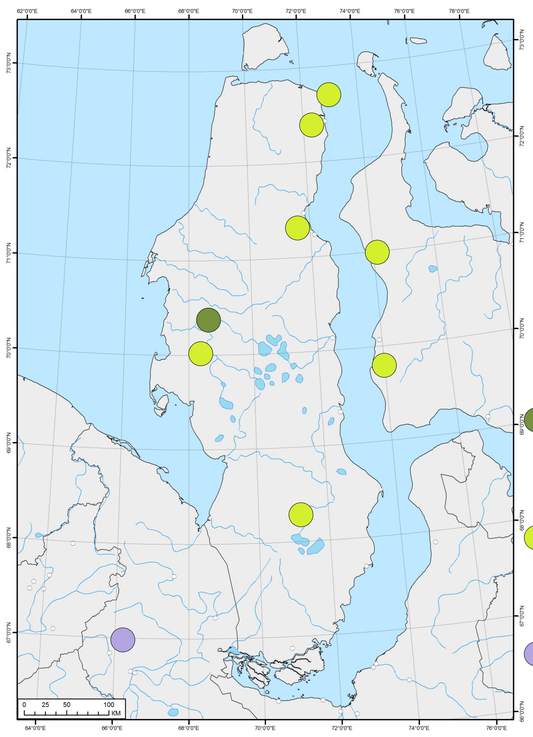
Alliance Loiseleurio-Diapension (Br.-Bl., Siss. et Vlieg. 1939) Daniels 1982
- *as. Festuco ovinae – Dryadetum octopetalae ass. nova hoc loco*
- *as. Sphaerophoro fragilis – Arctagrostetum latifoliae ass. nova hoc loco*
- *as. Sphagno-eriophoretum vaginati Walker et al. 1994*
- *as. Tephrosero atropurpureae – Vaccinietum vitis-idaeae ass. nova hoc loco*



D.A. Walker et al.
Institute of Arctic Biology, UAF, Alaska, USA

Low and mountain tundra
relevés, phytomass, environmental data (soils, permafrost, relief, LAI, etc.)

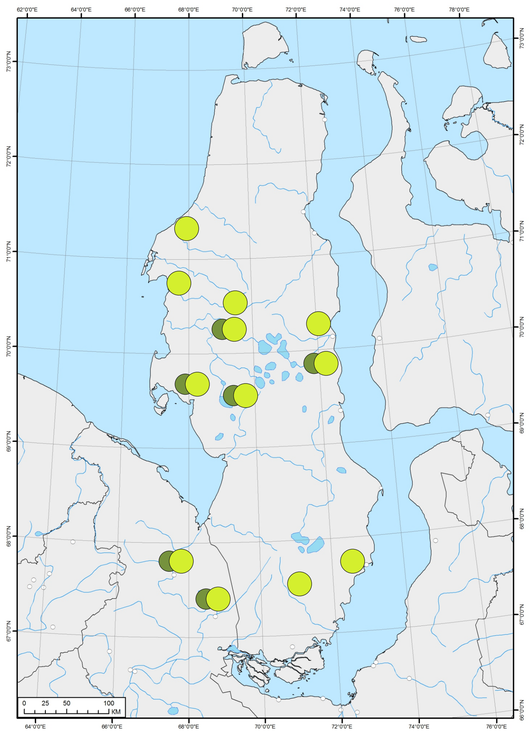
D. A. (Skip) Walker and colleagues collected 79 5x5-m relevés from six locations along a North-South bioclimate transect of the complete Arctic bioclimate gradient that included the Yamal Peninsula and Franz Josef Land as part of a project sponsored by the U.S. National Aeronautics and Space Administration (Walker et al. 2012). Study locations were at Nadym, Laborovaya, Vaskiny Dachi, Kharasavey, Ostrov Belyy, and Hayes Island (FJL). Complete vegetation, soil and environmental are in data reports produced by the Alaska Geobotany Center (Walker et al. 2008, 2009, 2011; Frost et al. 2012). The data contain GPS coordinates of all plots, Br.-Bl. cover-abundance values and quantitative percentage cover for all vascular plants, bryophytes, and lichens, biomass (sorted by plant growth forms), mean Normalized Difference Vegetation Index (NDVI), leaf area index (LAI), soil physical and chemical data [percent sand, silt, clay, gravel, soil bulk density, soil moisture (gravimetric and volumetric), cation exchange capacity, soil pH, Ca, Mg, Na, K (meq/100g)] soil descriptions, environmental data (active layer thickness, tree shrub & herb height, moss layer thickness, soil organic layer thickness, microrelief height, landform, surficial geomorphology, subjective estimates of site moisture, soil moisture, topographic position, snow persistence, disturbance regime, site stability, exposure to winds) and photographs of all plots, soils and landscapes. Additional relevé data were gathered Kharp in 2011 and are being processed.



K. Ermokhina
Earth Cryosphere Institute SB RAS, Moscow, Russia

Low tundra
relevés, phytomass, environmental data, LAI
relevés, environmental data
Mountain tundra
(*with Gerald (JJ) Frost*)
relevés, environmental data, LAI

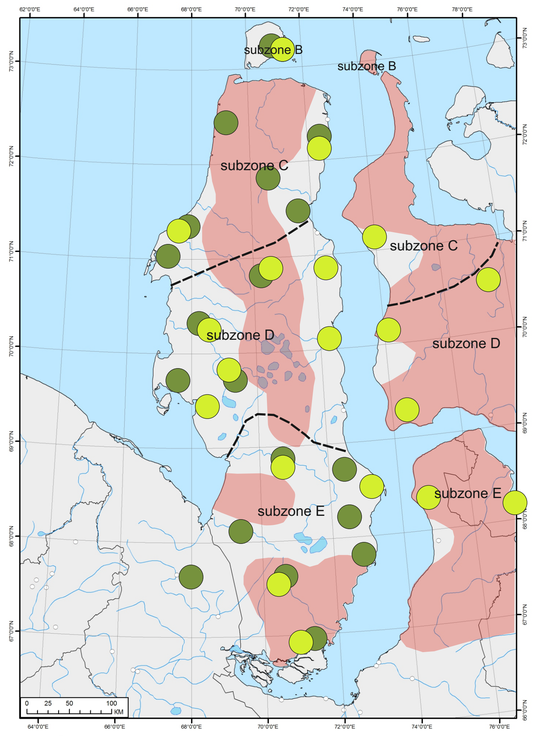
Ksenia Ermokhina, Earth Cryosphere Institute SB RAS (Moscow) has a dataset containing more than 600 relevés with full lists of species (vascular plants, lichens and bryophytes) from the Polar Urals, Southern, Middle and Northern Yamal Peninsula, and Gydan peninsula. Much of these data have been used for analysis of disturbed sites on the Yamal Peninsula (Ermokhina and Myalo, 2012a, b; Ektova and Ermokhina 2012; Yermokhina and Myalo 2012). Additional information includes GPS coordinates, cover of species, height of trees and shrubs (when applicable), environmental data (data on soils, permafrost, relief, exogenous processes, etc.). Forty-five plots have phytomass data, and about 200 plots have LAI data. The research was carried out in 2002-2012.



M. Telyatnikov
Central Siberian Botanical Garden SB RAS, Novosibirsk, Russia

Intrazonal grass communities:
177 relevés in low tundra
35 relevés in mountain tundra
Dwarf shrub and moss tundras:
206 relevés in low tundra
40 relevés in mountain tundra

Mikhail Telyatnikov of Central Siberian Botanical Garden SB RAS (Novosibirsk) holds the dataset of 680 relevés with full lists of species (vascular plants, lichens and bryophytes). The research was carried out in the Central Yamal (Telyatnikov, 2003) and on Polar Urals, South, Middle and North Yamal in 1987-1995 (Telyatnikov & Prystyazhnyuk, 2012). The additional information in dataset include GPS coordinates, projective cover of species, height of trees and shrubs (when appliable) and characteristics of the relief and soils.



Gaps in datasets

Areas with no geobotanical information:
- almost all Gydan and Tazovskiy peninsulas
- north-west and central parts of Nothern Yamal
- central parts of Middle Yamal
- south-east and north-west parts of South Yamal

Russian Arctic Local Floras Datasets (BIN RAS):
O. Rebristaya and O. Khitun (mainly vascular plants)
I. Czernyadjeva (mainly bryophytes)

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