
U N I V E R S I T Y O F B E R G E N

The Arboretum and Botanical Gardens

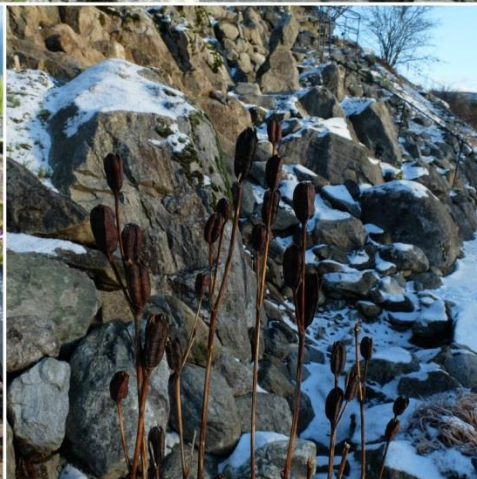
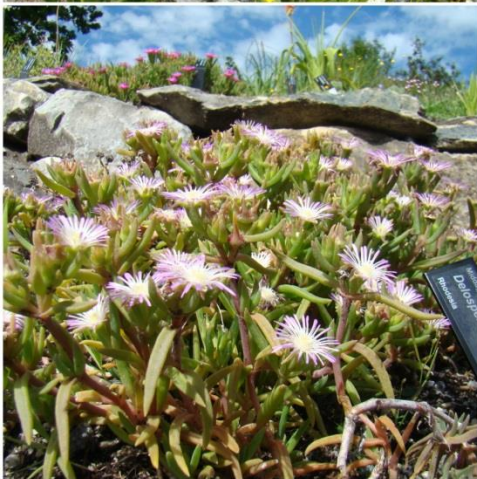
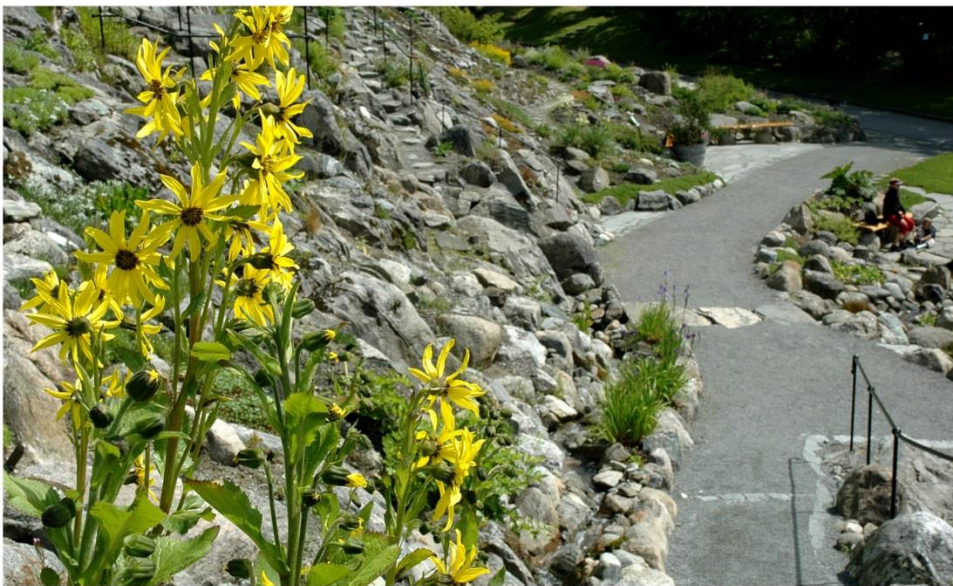
Developing ArcGIS maps for IrisBG to manage an alpine garden

Heidi Lie Andersen



The Alpine Garden Botanical Garden University of Bergen





About the garden

- The garden is 15 yrs
- Made in the natural environment with lots of stones
- Harsh weather conditions; rain, freezing periods
- Small alpine plants from different continents
- High turnover

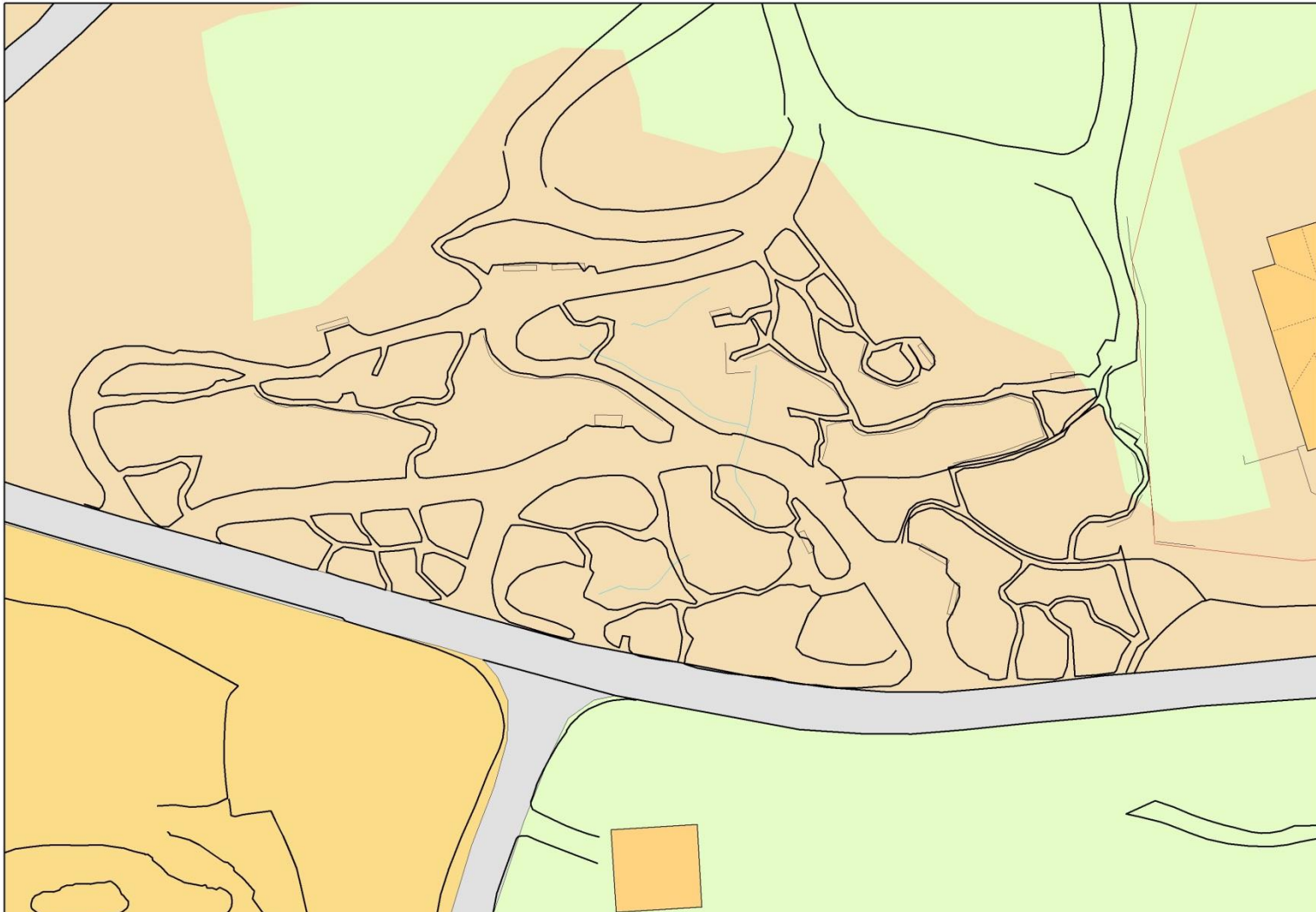
- Need to be registrated at least once a year
- Need map with small details

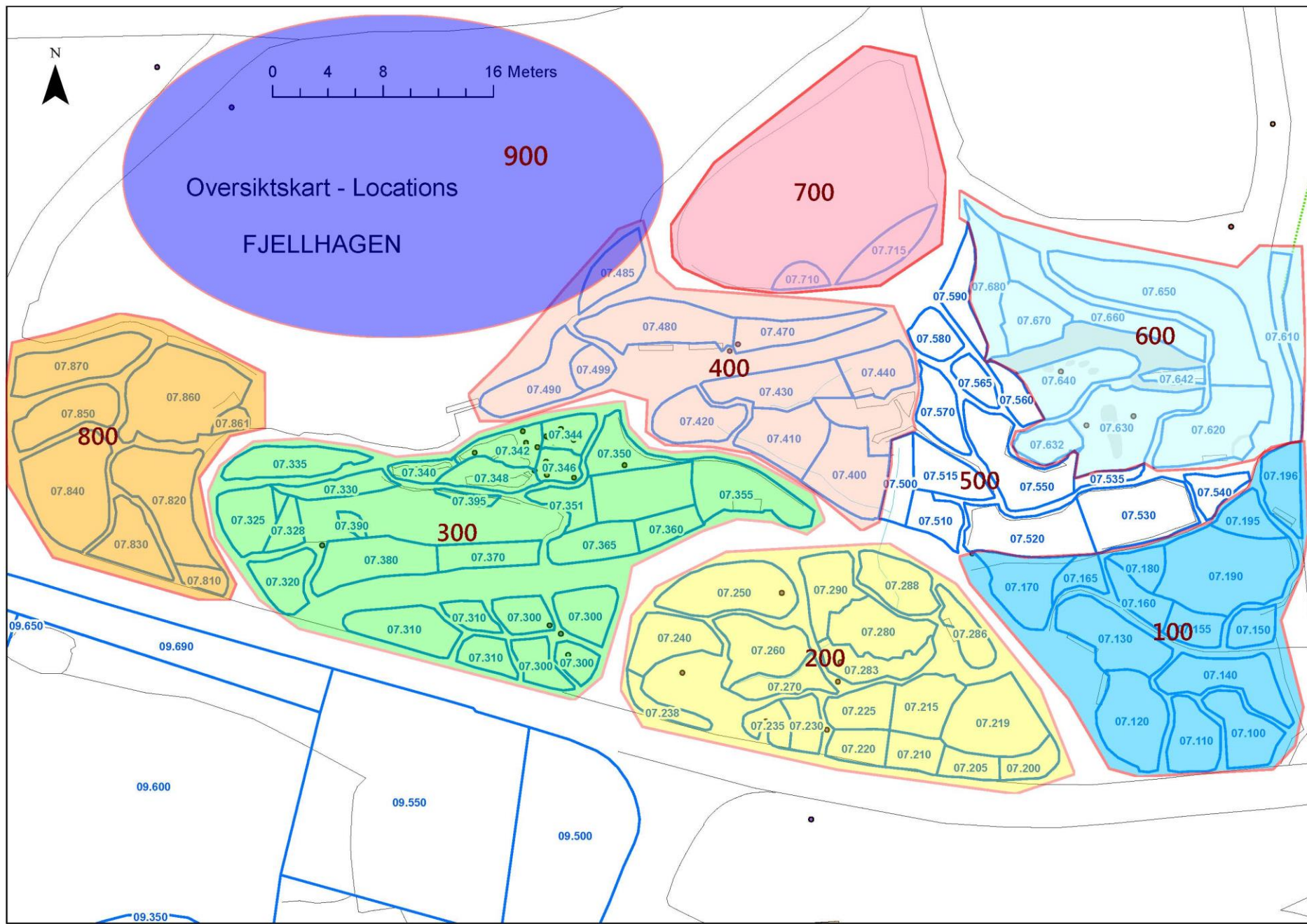


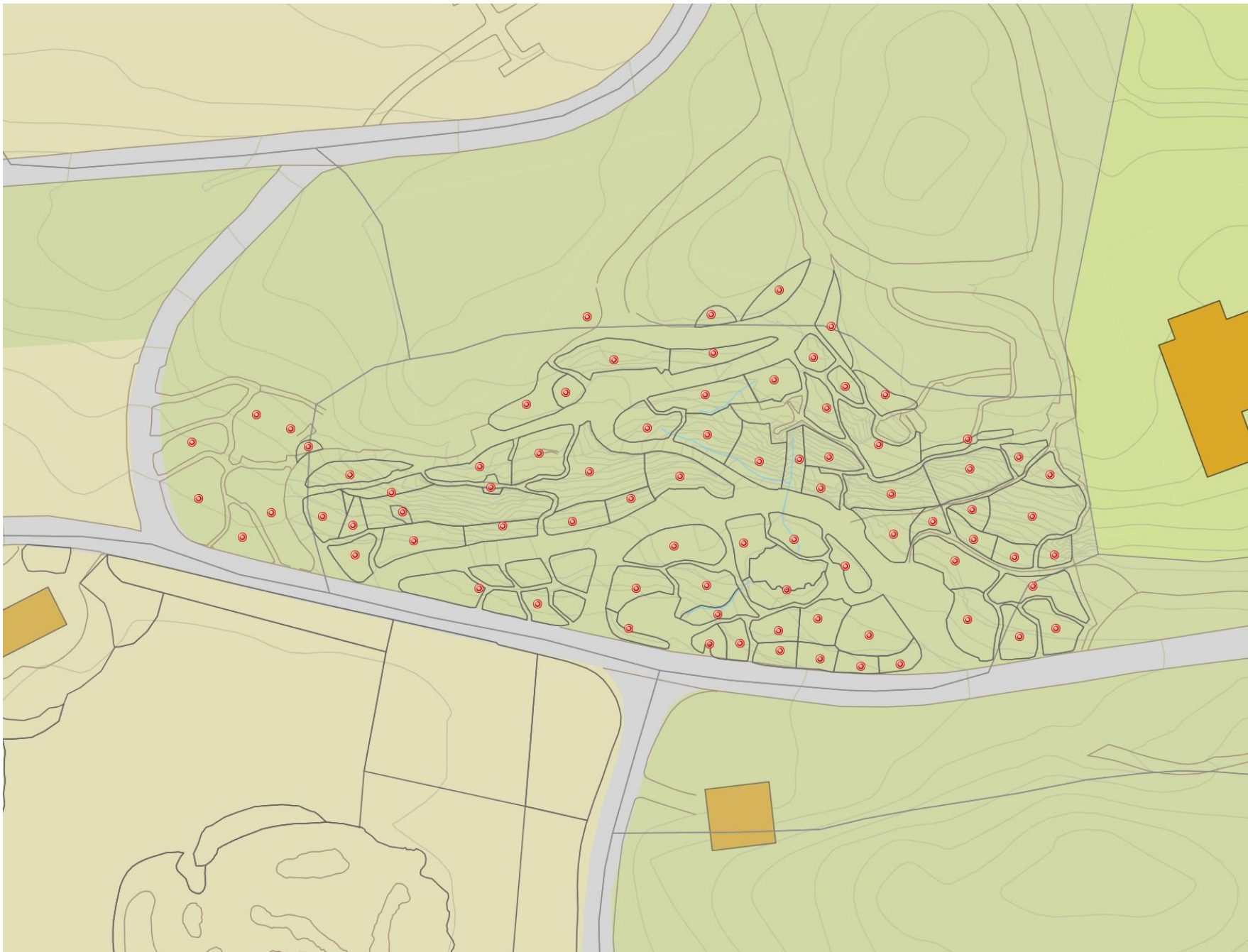
Newest orthophoto: 2009



Starting point: the map made from orthophoto







Fjellhagen

I fjellhagen er plantene ordna geografisk, etter verdsdelen der dei har sitt naturlege opphav. Me har og nokre tematiske utstillingar (merka med gult).



Planter frå heile verda

Fjellplanter fins i alle verdsdelar og er tilpassa barske forhold som kort sommar, kald vinter, mykje vind og få insekt. Mange av artane er puteforma, med blomar i klare fargar. Dessverre er forholda i låglandet ugunstige for artar som er tilpassa slike alpine vekseforhold. Dei milde vestlandsvintrane kan vekke plantene til live i utide, når dei normalt skulle kvile. Mykje fuktighet gjev råtning i tuene vinterstid.

I Fjellhagen legg me vekt på å finne planter som kjem frå områder med liknande klima som det me har på Milde.

Nord-Amerika



Cypripedium reginae kjem frå Nord-Amerika.

Asia

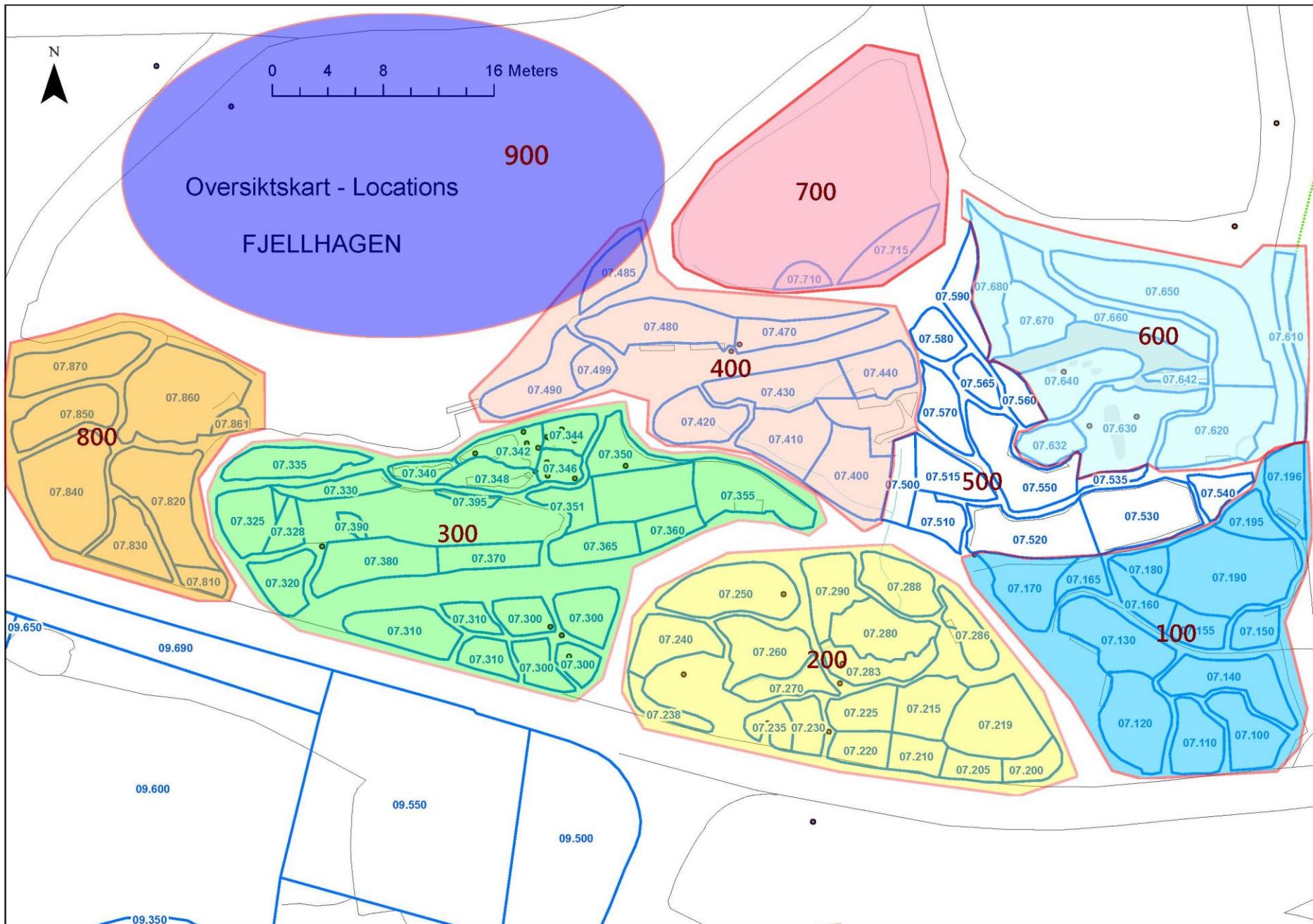


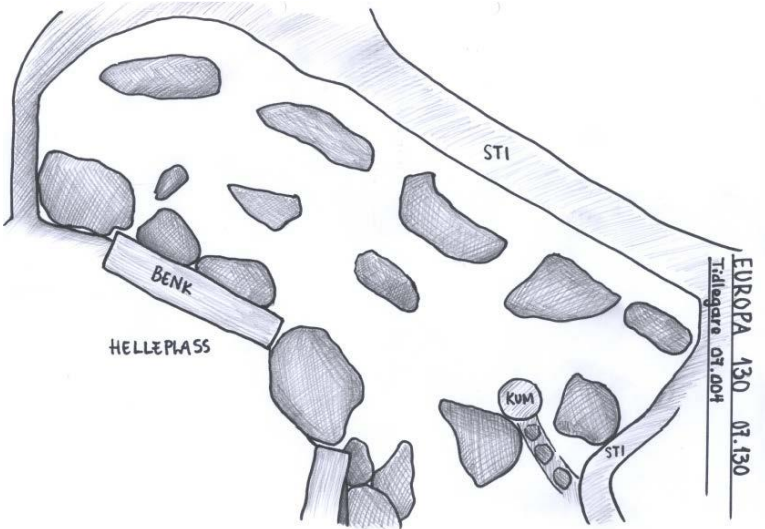
Meconopsis
- valmuesøster
tilhøyrer valmue-
familien med ca. 45
artar. Dei fleste
kjem frå Himalaya.
I Norge trivs dei
best i fuktig
kystklima.

What do we need for registration ?

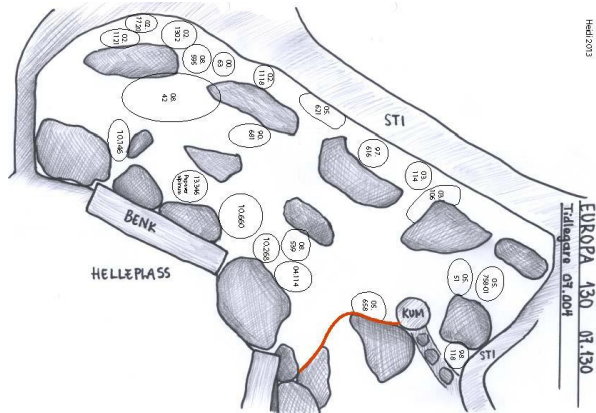
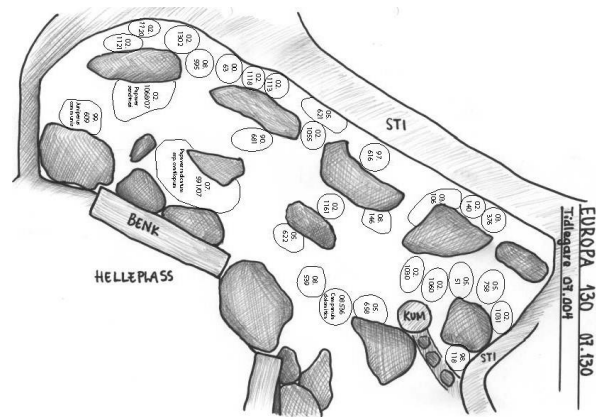
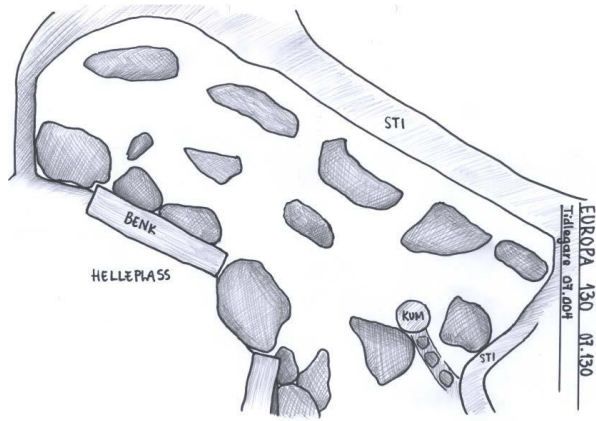
- 1. We want to have a detailed map
- 2. We want to do this efficiently
- 3. We want to do it digitally







- First method was to draw nice illustrations of the geography
- Gave nice single-maps
- Difficult to combine
- Difficult to digitalize

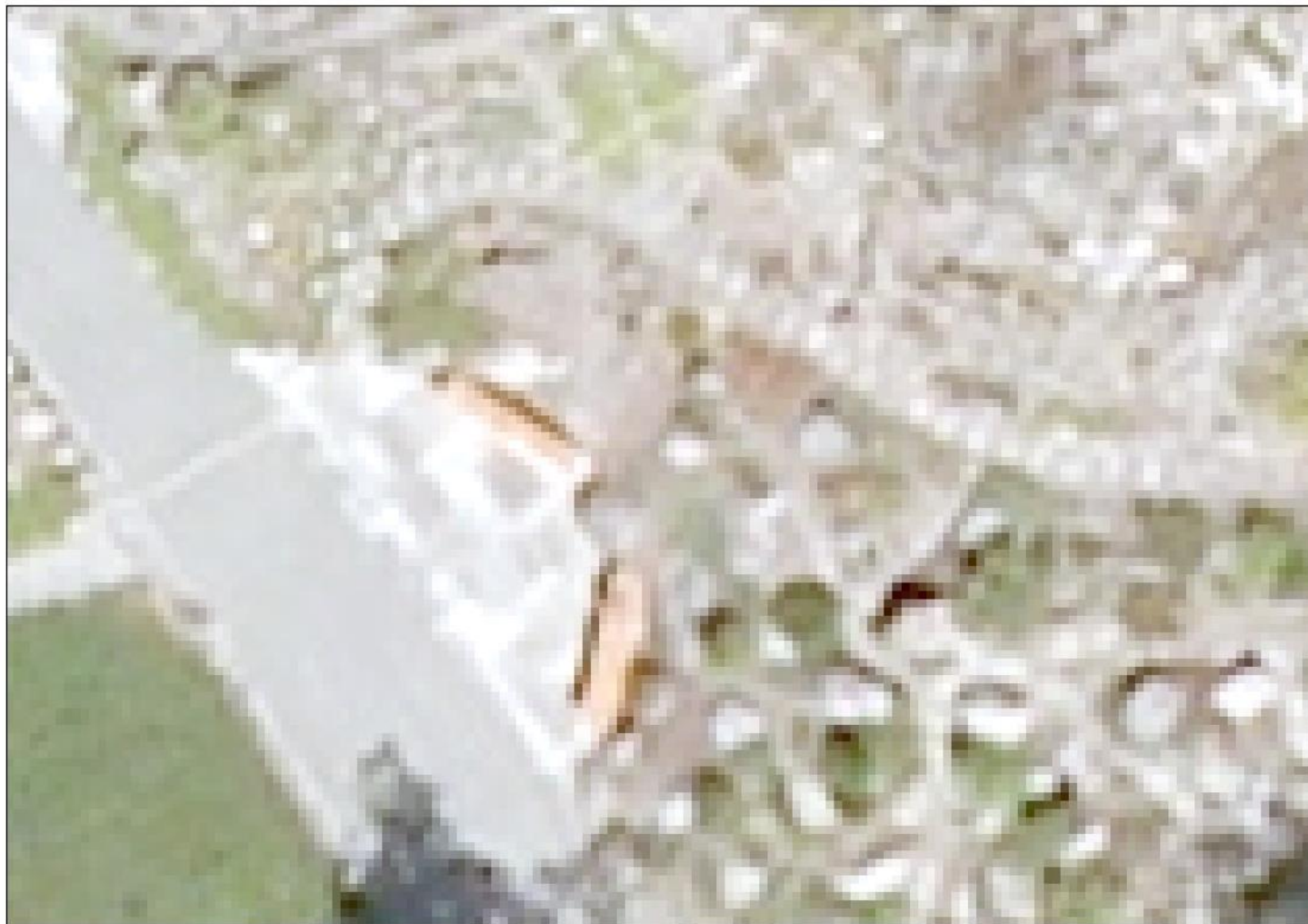


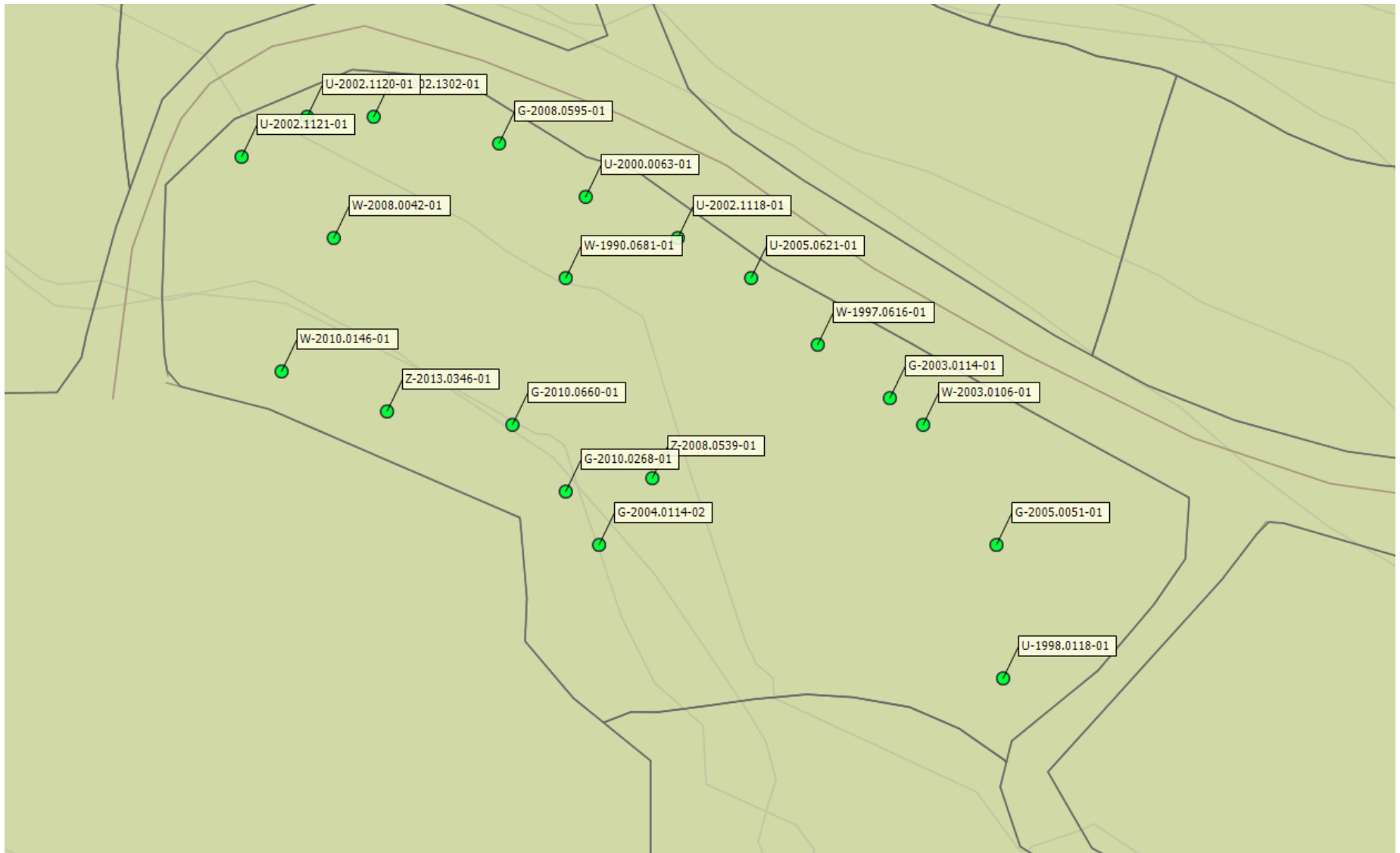
07.130 Europa

AccNoFull	TaxonName	ItemStatusDate	ItemStatusPe
G-2002.1302	<i>Saxifraga cuneifolia</i>	2013-08	doø
W-2005.0758	<i>Iberis</i> sp.	2013-08	doø
U-2005.0658	<i>Phyteuma scheuchzeri</i>	2011-07-11	hm
U-2005.0621	<i>Saxifraga cuneata</i> var. <i>aureovariegata</i>	2013-08	doø
G-2004.0114	<i>Euphorbia capitulata</i>	2013-08	doø
G-2005.0051	<i>Saxifraga tombeanensis</i>	2013-08	doø
W-1990.0681	<i>Veronica spicata</i>	2013-08	doø
W-1997.0616	<i>Saxifraga bryoides</i>	2013-08	doø
U-1998.0118	<i>Saxifraga taygetea</i>	2013-08	doø
U-2000.0063	<i>Saxifraga paniculata</i>	2013-08	doø
U-2002.1118	<i>Saxifraga callosa</i> subsp. <i>callosa</i>	2013-08	doø
U-2002.1121	<i>Saxifraga paniculata</i>	2013-08	doø
U-2002.1120	<i>Saxifraga oppositifolia</i>	2013-08	doø
G-2003.0114	<i>Saxifraga juniperifolia</i>	2013-08	doø
W-2003.0106	<i>Saxifraga exarata</i> subsp. <i>moschata</i>	2013-08	doø
W-2008.0042	<i>Saxifraga rosacea</i>	2013-08	doø
Z-2008.0539	<i>Campanula troegerae</i>	2013-08	doø
G-2008.0595	<i>Saxifraga cartilaginea</i>	2013-08	doø
W-2010.0146	<i>Primula scandinavica</i>	2013-08	doø
G-2010.0268	<i>Campanula barbata</i>	2013-08	doø
G-2010.0345	<i>Primula stricta</i>	2012-08	doø
G-2010.0660	<i>Papaver kernerii</i>	2013-08	doø
G-2012.0667	<i>Achillea tomentosa</i>	2012-08	doø
Z-2013.0346	<i>Papaver alpinum</i>	2013-08	doø

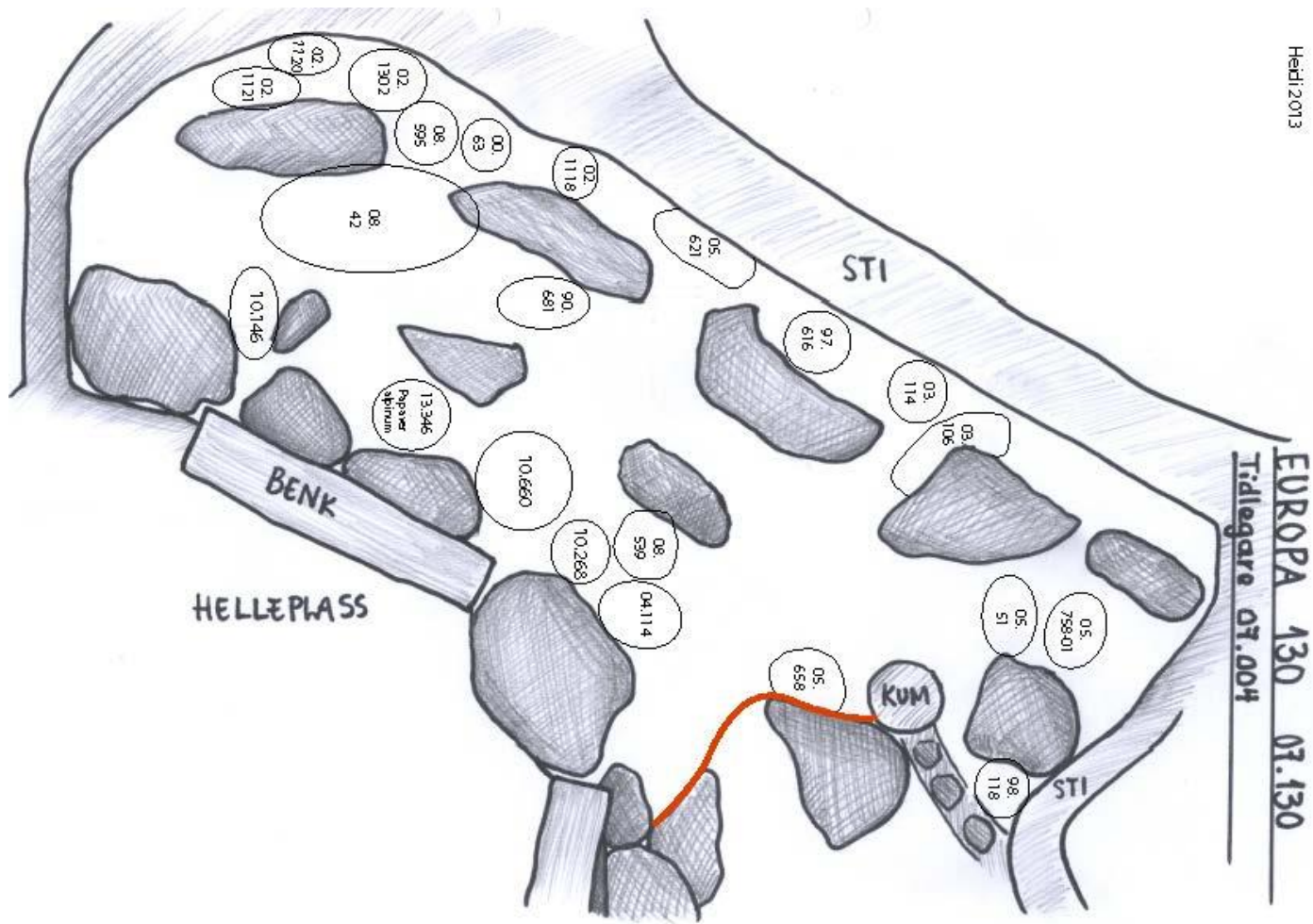


Area Europa 07.130





Heidi 2013

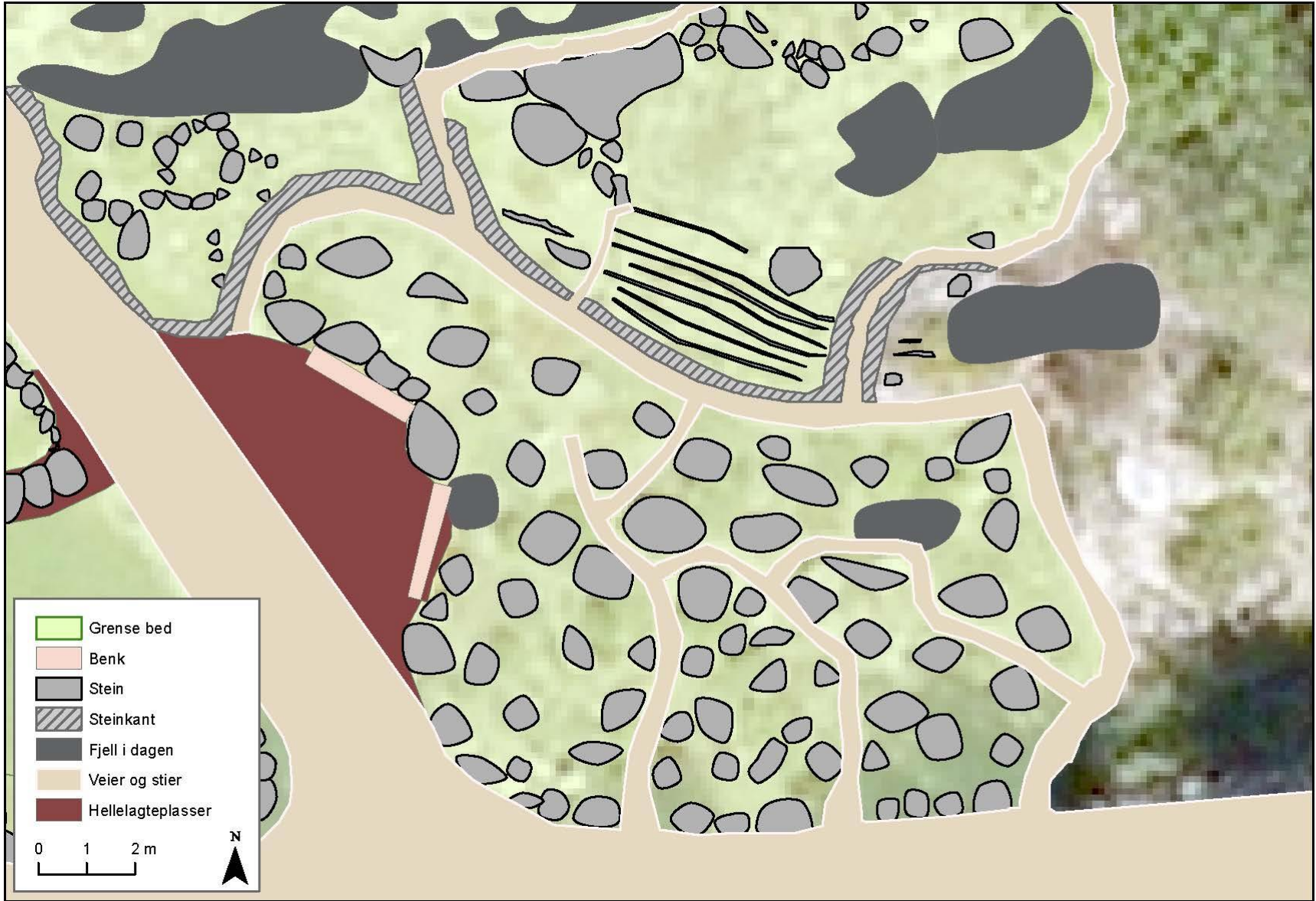


EUROPA 130 07.130
Tidlegare 07.004





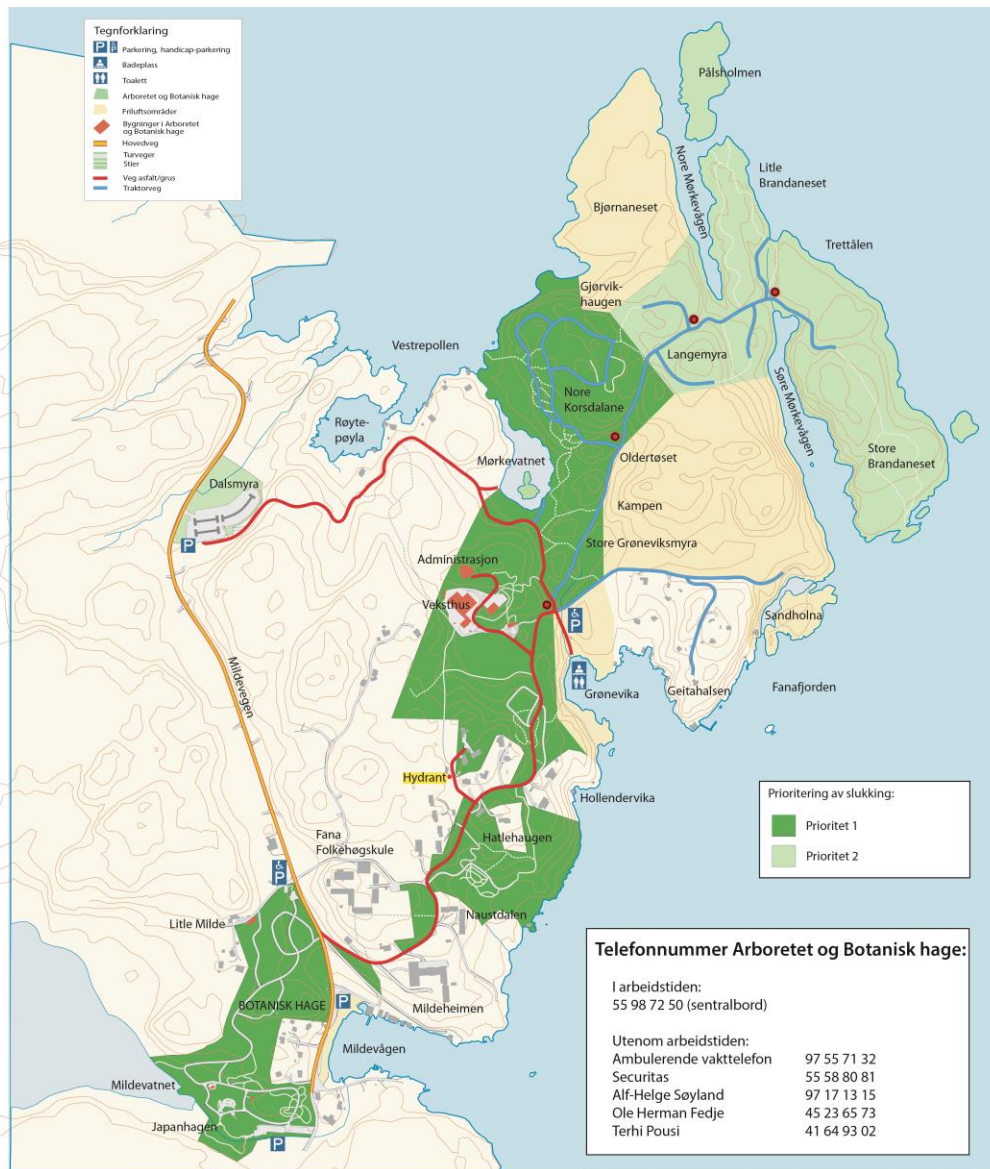




- Advantages
 - Easy to registrate plants with IrisBG
 - Extremely detailed
 - Practical outdoor with Iris Mobile (?)
 - Useful for many purposes
 - Easy to change the layout and content

- Disadvantages
 - Expensive
 - Takes time to make the map





Kart laget til Bergen Brannvesen juni 2010.



How to maintain the map

- Gardeners move stones to weed or plant
- Major changes has to be drawn into the map
- What about drones?



- Iris Mobile have some challenges



UNIVERSITY OF BERGEN

The Arboretum and Botanical Gardens