Alpine blue sow-thistle on Caírngorm Turte & Re Gell Why CNP and SW Norway should get to know each other much better

Kalenderbok

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SW Norway: Definition

Area

SW Norway as defined on map	33318km²
(Highland Region, Western Isles, non-Highland region part of CNP)	31597km²)

- Alpine blue sow-thistle *Cicerbita alpina* is critically endangered in Britain. It is confined to four rock ledges in the extreme SE of CNP (Angus glens & Lochnagar). A fifth patch went extinct in 1977.
- The plants are highly impoverished genetically and those on each ledge may be clones
- They very rarely produce any seeds, and those are usually deformed
- Management publications on the species in Britain correctly identify that it is highly palatable to grazing animals, and this is the major factor in its rarity
- But they also include statements like:
- "As the species has a continental distribution, this would suggest optimum conditions of hot summers and cold winters."
- "In western Norway, *Cicerbita alpina* seems to avoid the extreme oceanic areas and tends to be found in the more continental inner fjord areas. It avoids the west coast; like many boreal species, it tolerates or even needs high summer temperatures, occurs in areas of cold winters and tends to be absent from areas with mild winters"
- "As a consistent feature of its European habitats, winter snow cover protects plants from winter frosts and provides additional moisture in early summer"
- Leading to the first of the 'key factors' identified as "limiting the current and future distribution of *C. alpina*" as being:
- "C. alpina appears to be at the western limit of its climatic tolerance in Scotland...."





Presented on seNorge.no



Meteorological information: Meteorologisk institutt (www.senorge.no)

Peat cutting in coastal Norway, 1944

THE DEPARTMENT OF

Oslibakken near Stavanger, 1911

'Highly prized browse for many animals... In our (*i.e., coastal SW Norway*) mountains it (*C. alpina*) must seek refuge in inaccessible places to avoid being eaten by sheep'

Bakkeveig, S. (1983). Botany for mountain lovers. Stavanger Hiker's Association, Stavanger

- Coastal SW Norway was almost completely deforested from the Bronze Age until the 1860s, and so lacked *C. alpina* habitat
- *C. alpina* is a shade plant of moist soils in woodland understory. Woodland is now regenerating rapidly following declines in grazing pressure, but the area remains the most heavily grazed in Norway
- Rogaland ('Stavanger county') sheep population, summer 2014: ~510 000 sheep or 59.4/km²; ca. 20% of all sheep in Norway (data: Statistics Norway)
- Rogaland is 2.8% of Norway's land area; sheep grazing intensity for the county taken as a whole is thus c. 14x the Norwegian average. Most sheep graze on the coast and on the foothills behind the coast

DSS 2075



Large areas of the Cairngorms, from Abernethy to Glen Feshie; and the eastern part of Mar Lodge estate, have good habitat for *C. alpina*.

They also now have low grazing pressures.

However, they lack a seed source.



Andromeda polifolia (Bog rosemary)

www.artsdatabanken.no www.bsbimaps.org.uk/atlas/main.php





Grazing pressure is now low enough for *A. polifolia* to reestablish in large areas of the Cairngorms (see above), but a seed source is lacking.





- In Scotland (including CNP), SACs with bearberry are being cleared of naturally regenerating trees to 'protect' the habitat.
- In Norway, the species is LC status and abundant from sea level to the low alpine zone, largely as a woodland understory plant.
- Its usual habitat is described as "Bearberry grows in drier woodlands, most usually Scots pine woods, and drier heaths. It is common in the whole country up to the firn snow level. Bearberry can grow both on acidic and alkaline soils." <u>Source</u>
- It is questionable whether the SAC species association is a natural, and not a 'survivor', association.
- It is certain that open habitats are not a requirement for Arctostaphylos (among others)



www.artsdatabanken.no

Scotland: ring ouzels are found in "open heather clad moorland and mountains with only very sparse or stunted tree cover" (Rollie 2007).

Norway: "common in the montane scrub zone…prefers hilly areas with rocky terrain and mixed grass and shrub vegetation. Here it especially likes rock outcrops, cliffs, and canyons. It especially likes steep slopes with lots of rocks and plenty of juniper bushes, where at the same time there are mixed in more open areas with grass. It does not like barren areas with little vegetation, either on the coast or in the mountains" (Pedersen 1994).



Ring ouze

Turdus torquatus torquatus

Scotland: over 50% decline in the last 25 years, and a very marked contraction in range (Rollie 2007). Red listed and a priority species in the UK biodiversity action plan.

Norway: appears to be slowly increasing (Pedersen 1994). Red list status 'LC'.

The same subspecies breeds in both countries and they appear to winter in the same regions of Morocco.



"In Norway the golden eagle breeds in hill forest and mountain tracts over most of the country....The golden eagle is first and foremost associated with open mountain woodland (*fjellskog*) (Dahl et al. 1986)...it can also breed in open coniferous forests a long way from the open fell"

Gjershaug et al. (eds.) (1994). Norwegian Bird Atlas.



No. harvested red deer per 10 sq km of hunting area



Kilde: Statistisk sentralbyrå. Kartdata: Kartverket

Red deer harvest, Norway 2000-2014



Decline from 2010-11 hunting season is due to managed population reduction.

Source: Solberg, E. J., Strand, O., Veiberg, V., Andersen, R., Heim, M., Rolandsen, C. R., Solem, M. I., Holmstrøm, F., Jordhøy, P., Nilsen, E. B., Granhus, A. & Eriksen, R. 2015. Moose, red deer and reindeer: Results from the monitoring program for wild cervids, 2012-2014. NINA Report 1177. 58 pp.

(For a summary of the Norwegian deer management system see <u>here</u>)



(maps to scale and in correct relative positions)







Vasterås

NYKOD

Trends in land cover



Adapted from:

Anders Bryn , Pablo Dourojeanni , Lars Østbye Hemsing & Sejal O'Donnell (2013) A high-resolution GISnull model of potential forest expansion following land use changes in Norway, Scandinavian Journal of Forest Research, 28:1, 81-98

Forest defined as trees >2.5m high. "Other land cover types" mainly infield farmland and urban.

Input baseline maps: cover as mapped in 2007.



NB Much of the 'potential natural forest regeneration' mapped is occurring now, but has not reached the >2.5m height threshold. Unless current land use patterns change, almost all of it is predicted to in fact occur in coming decades. Regeneration is due to reductions in grazing pressure and associated land uses (muirburn, firewood collection). In recent years climate change may be marginally affecting the altitude limits of zones, but if so is subordinate to browsing effects (Bryn 2008; Hofgard et al 2010).

Annual increase in wood volume in W Norway statistical region, 2009-13



Source: Statistics Norway

Area of woodland in W Norway statistical region (62043 km²; Scotland is 78772km²) increased by >1000km² between data collection periods 2005-2009 and 2008-2012, entirely due to natural regeneration. Productive forest means places with annual growth of woody mass of >1m³ /ha (whether or not harvested for wood)





X=approximate point of shot 1911 photograph



Ferkingstad, Karmøy (near Stavanger)

1913

2004

www.tilbakeblikk.no



Stor Marøy, Stavanger.



Kvenadhøla sawmill, Rogaland

Ca. 1890

2004

www.tilbakeblikk.no



www.tilbakeblikk.no



Fidjadalen 1927

Fidjadalen 2015



<u>http://jarenfri.no/no/steder/friluftsgarden-</u> <u>man/</u>

Drystane farm ruin, Hidrasund

Photo: Thomas MacDonell





Kirkehavn at west entrance to Hidrasundet

Eigerøya > Hidrasundet

See also:<u>http://ut.no/hytte/3.1491/</u>

Mean wind speed Eigerøya weather station 10 years to 30.10.2014 : 8.0m/s; Maximum: 35.5m/s Source: <u>Meteorologisk institutt</u>

Mean wind speeds W Coast Scotland, 1981-2010:

Baltasound, Unst: 6.9m/s Lerwick: 7.5m/s Fair Isle: 7.4m/s Aultbea: 5.0m/s South Uist (W. coast): 7.1m/s Barra airport: 7.5m/s Tiree: 7.3m/s Islay airport: 6.4m/s Campbeltown airport 6.2m/s Source: <u>Met Office</u>

Extreme wind events at Eigerøya 1994-2015 (Force 10, 25-28m/s, is annual)

08.12.1994 Force 11 (29-32m/s) 19.01.1995 Force 11 30.01.1995 Force 11 17.02.1997 Force 11 28.11.1999 Force 11 11.01.2005 Force 12 (>33m/s) 13.01.2007 Force 11 10.08.2014 Force 11 10.01.2015 Force 12 (>33m/s; max

gust 45.6m/s)

Bykleheiane

Melen

(80km from outer coast; latitude of Fair Isle – south tip Shetland)



Maps from <u>www.norgeskart.no</u>





Source: Norges geologiske undersøkelse



Central Cairngorms: 1700-2200mm band (left map); 1500-2100 & 2100-3800mm bands (right map)



www.senorge.no





www.senorge.no







Data: Cairngorm summit: www.metoffice.gov.uk Allt a'Marcaidh: data.ecn.ac.uk Hovden: www.xgeo.no



Berdalen, Bykleheiane

Source: <u>www.norgeskart.no</u>



Berdalen, Bykleheiane

Source: <u>www.norgeskart.no</u>



Berdalen, Bykleheiane. Placenames indicate the landscape was formerly much more open.



Source: <u>www.norgeskart.no</u>



Source: <u>www.norgeskart.no</u>

Bygdeheii 1306m

-

c. 750m

Old seter innmark (inbye field) boundaries

Seter: summer farm, shieling. Typically cows were grazed (and milked) in the innmark, sheep and goats grazed in the 'utmark', or rough grazing, in summer. Hay harvested from suitable grass-dominated slopes. Animals were driven to lower levels for the winter.





View WSW from shoulder of Jarekollen at c. 900m

Voilenuten 1343m

Bosvatn 551m

Foreground is typical 'rabbe' vegetation - found on ridges, etc. where snow normally blows off in winter. Willow is typically found in more sheltered locations with snow lie.



Bjåen c. 950m

(Typical 'willow zone' vegetation. The term means the zone where montane willows are common; not that the zone is all willow, or even dominated by willows. Birch, rowan, juniper and aspen are typically common as well; with krummhölz pine in some places.

The area was open moor 50 years ago; regeneration has followed decline in grazing pressures. Cows and sheep are still grazed at this site in summer at moderate densities; wild browsers include moose and reindeer)

Fjellenden c 1000m Photo: Erling Rustad

Sloaros 1045m

Looking SE from Storenos at c. 1100m; glen bottom about 830m

Gråsteinsnosi 1468m



Hovden, Bykle



Bykle kommune (local government district)

- Unemployment rate, 2011: 1.4%*
- Tourist overnights, 2005: 487000
- Tourist spend, 2005: £23.83 million (261 million kr)
 Tourist spend per resident: £25800 (282 000kr)**
 Mean gross income 2010: £37000 (404 000kr)***

Highland region 2009: 2.9%
* Highland region, 2006: £3500
**Average annual compensation nonagricultural employe Cairngorms NP 2006: £18370

A properly structured social & economic comparison might be interesting?

FORVALTINGSPLAN FOR VERNEOMRÅDA I SETESDAL VESTHEI, RYFYLKEHEIANE OG FRAFJORDHEIANE (SVR)



VERNEOMRÅDESTYRET FOR SETESDAL VESTHEI, RYFYLKEHEIANE OG FRAFJORDHEIANE



Management plan for Setesdal Vesthei, Ryfylkeheiene and Frafjordheiene (SVR)

Managed as a unit; in process of consultations for consolidation as a National Park (in the Norwegian sense of the term).

Park website:

http://www.nasjonalparkstyre.no/svr/

Area: 3444 sq km (CNP 4528 sq km)





Sauedrift på Brokke-Suleskardvegen.

2. Retningsliner for brukarinteresser

Kapittel 2 syner korleis verneforskriftene regulerer dei ulike brukarinteressene innanfor verneomräda. For kvart delkapittel er det utarbeidd forvaltingsmål knytte til dei ulike brukarinteressene (Siå utheva, blå tekstboksar). Konkrete retningsliner for brukarinteressene blir viste i lysegrøne tekstboksar, eventuelle framlegg til tiltak for å nå forvaltingsmåla og fremje verneverdiane, blir viste i grå tekstboksar. Ein vil gjeel vurdering av retningslinene i høve til dei miljørettslege prinsippa i naturmangfaldlova, paragrafane 8-12. Det er viktig å presisere at ettersom det er forskjell påverneforskriftene for dei ulike verneområda, vil det i nokre høve ikkie vere muleg å få til et fullstendig samordning for alle retningslinene, for dei ulike brukarinteressene.

2.1 Landbruk

2.1.1 Noverande bruk og forvaltingspraksis

Alle verneområda har i lang tid vore viktige område for husdyrbeite, og utnytting av beiteressursane i utmarka, har alltid vore ein hjørnestein for drifta av gardsbruk rundt heia. I tillegg er det lang tradisjon for at gardsbruk på Jæren og ytre Ryhylke, leiger utmarksbeite i he leområda, både til sau og storté. Tidlegare var det omfattande skilling med beiting av storfe og geit, men i løpet av dei siste 80 åra har sau gradvis blitt det dominerande beitedyret. I lågare delar av heia har det også vore mykke utmarksstått. I dag beiter det, ifølgje tal frå Statens landbruksforvalting, om lag 60.000 sau og lam i alle verneområda under eitt, og fordelinga mellom områda er vist i tabell 51.

Beitetry kiet varierer mykje mellom dei ulike verneområda, og innanfor kvartverneområde. Det høgste beitetrykket er registrert i beile områda Svanes og Rysstadheia i Setesdal Vesthei-Ryfylkeheiane landskapsvernområde, med 70-80 sau per km² (Rekdal og Angeloff 2007). I dei mest bruka beiteområda på begge sider av Brokke-Suleskardvegen. er beiletrykket noko høgare enn det som er til rådd, på bakgrunn av beitekartleggingar (ibid.). 1 ei fleste stadane i verneområda er likevel beitetrykket lågare enn det som vert tilrådd, slik at hovudinntrykket frå rapportane er at beiteressursane, samla sett, giev grunnlag for fleire beitedyr. Generelt blir kvaliteten på beita betre jo lenger nord ein kjern i verneområda. I nord er det større innslag av snøleier og frodige dalsider med rikvegetasjon, mens områda i sør er dominerte av næringsfattige lyng- og grasheier. Likevel er både talet på beitedyr og beitetrykket klart størst i dei midtre og sørlege delane av Selesdal Vesthei - Ryfylkeheiane landskapsvernområde.

1 For ein meir detaljert oversikt over talet på beitedyr i ulike beite omräde visast det Skog og landskap sin nettportal Kilden <u>http://kilden</u>, skogoglandskap.ne/map/kilden/ndex.tp?zoom=128/on=7.2278/368/at-501556001/8cr-4226



Gamal stølsvegg fortel historie

Deter registrert spor etter steinaldermenneske på villreinjakt fleire stader i verneområda. Dette dreiar seg om restar etter leirplassar, som var plasserte nær viktige villreintrekk og gode jaktområde. Bruken av desse plassane var truleg sporadisk, og til kortare jaktekspedisjonar frå dei faste buplassane ved kysten. Slike sesongbuplassar har ein funne spor etter ved Sandvatn, Urevatn, Øvre Storvatn, Vestre Gyvatn, Botnsvatnet, Elsvathet og Store Førlivatn.

Alt tyder også på at området vart utnytta på liknande måte i jernalderen. Fleire stader i verne områda er det registrert tuffer, hellerar, dyregraver og bogestille. Desse harvore i bruk heilt tilbake til jernalderen. Det er også gjort lauslunn av pilespissar frå jernalder. Ved Storhedder i Bykle er det runeinnskrifter, daterte til om lag 1100.

I løpet av jernalderen vart heieområda tekne i bruk til andre former for verksemd. Rundt Hovden var det ein omfattande produksjon av jern i tida frå ca år 400 til 1400, og ein kan finne både kolgroper og restar etter jernvinne inne i ver neområda. Mykje tyder på at stølsdrifta tok til mot slutten av jernalderen.

I mellomalderen vart verksemda i verneområda meir omfattande. Jernutvinninga på Hovden var på sitt høgasle rundt 1200. Stølinga i heieområda tok seg opp i denne perioden. Bruken av dyregraver var omfattande også i mellomalderen, sjølv om fleire av dei 50 registre rie dyregravene i verneområda, vart gravne ut i jernalderen. Det var truleg også ein omfattande terdsel over heiane mellom bygdene på aust- og vestsida. Mest kiend er Skinnvegen mellom Valle og Lysebotn, der selesdølane måtte frakte skatten, i form av storféhuder til biskopen i Stavanger.

Etter den sterke nedgangen i folketalet etter Svarledauden, var det truleg ein periode på om lag 300 år med mindre verksemd i heieområda. Frå om lag 1 600 tok bruken seg krattig opp, og det er frå dei siste 400 åra ein finn dei fleste, synlege kulturminna i verneområda. Det er også frå denne tida ein har best kjennskap til korleis heia vart utnytta.



«Lordshytte» - Lord's Lodge.

Former shooting lodge, built by English sport hunting proprietors ('Lords') in the late 19th century.

(English-owned sport hunting properties were common in S & W Norway in late Victorian-Edwardian times).

But it's too far....



Grantown-Sheffield 398 miles (by road) Grantown-Stavanger 382 miles (road & air)

But it's so expensive....

NOK per 1 GBP





Frafjord cabins. Sleeps 6, 750kr/night or £9.96/person/night



Bjåen, Bykleheiane. Sleeps up to 22, £15/person/night

Comparative costs

- September 2015: 5-night study tour organised CNP, to SW Norway (Stavanger- Hidrasund- Frafjord-Bykle-Stavanger) ex Aberdeen, all flights, car rental, fuel, accommodation, food included: £560/person
- November 2015: CIEEM conference (2 days) Sheffield, to be attended by CNP staff, standard expenses: c. £800/person

View from Hovdenuten (1119m)

View from Hovdenuten (1119m)



- SW Norway is closely similar in the basic conditions of life (climate, landforms, geology) to Highland Scotland, as comprehensive data demonstrates.
- Including areas closely similar to CNP.
- Some examples where comparison with SW Norway has been/could be informative for CNP are presented.
- There are almost certainly many more across the range of issues CNP deals with.
- It is not far, compared to many places CNP staff routinely travel to.
- It is not expensive, compared to many places CNP staff routinely travel to.
- Everyone speaks fluent English.
- Scottish Government policy (<u>The Nordic-Baltic Policy</u> <u>Statement</u>) is to engage more closely with the Nordics across the policy spectrum. In environmental/climate/land use terms SW Norway is clearly the appropriate comparison.
- Contacts in the region from government agencies, the National Parks Board, and stakeholder groups are keen to engage.
- The potential SVR National Park is interested to learn, in its process of formation, from CNP.

