



***Did the Fimbulwinter Eradicate  
Shetland's Picts?***

*A Presentation of the results in my paper published in Northern Studies  
Volume 54*



## The Perceived Wisdom in Shetland of Picts vs Vikings...

- ...is that there was a large Pictish population in Shetland when the Vikings arrived.
- ...is that their 'invasion' resulted in Genocide, or Cultural Oblivion, of the Pictish population.
- ...is that our Pictish place-names vanished because either the Vikings killed off, or enslaved all the Picts.



**A Caledonian or Pict, as represented in a 19<sup>th</sup> century history book.**

*Lantresman/Wikimedia Commons*



Guerber, H. A. (Hélène Adeline) (1909). *Myths of the Norsemen from the Eddas and Sagas*. London : Harrap.

## The Value of Place-names

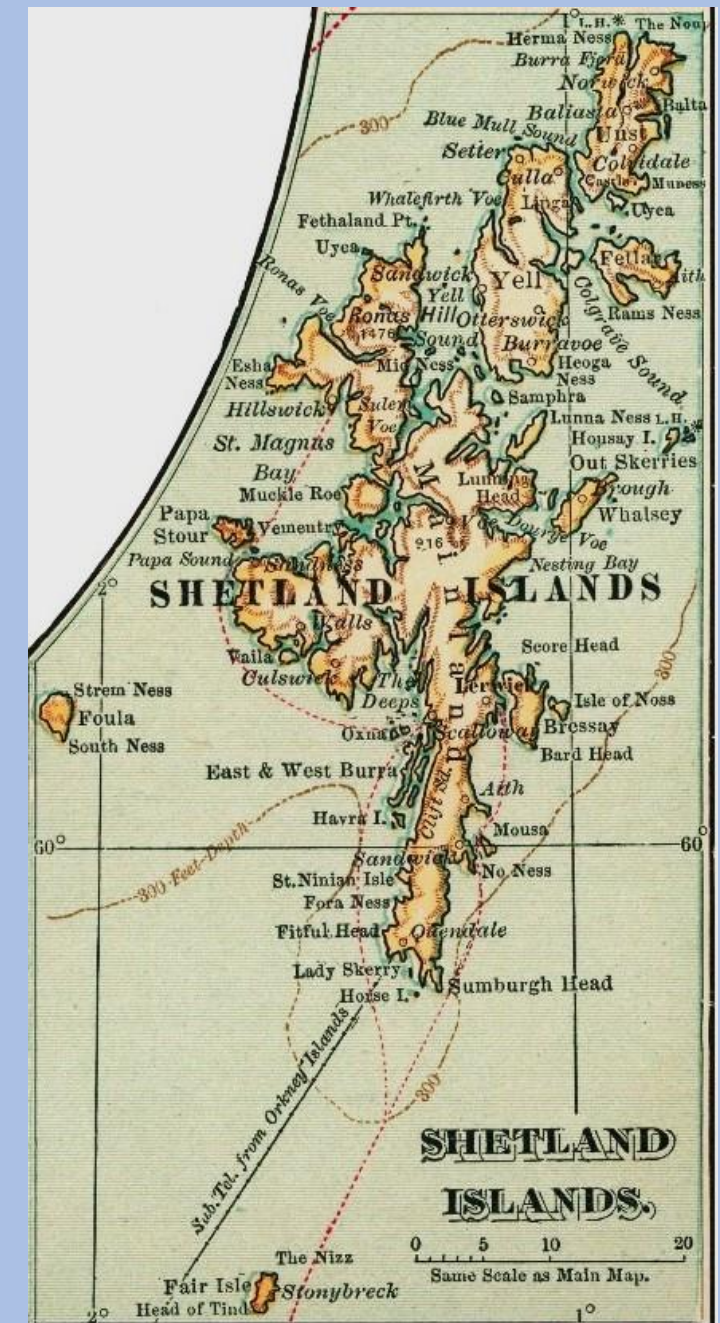
Place-names are a very valuable resource in charting Shetland's past.

*'They were designed to carry and communicate information of relevance for those that encountered them. They were invariably created to be meaningful and useful, to be reflective of local conditions and human experience, and they were intended to be understandable.'*

Jones, R 2015, 'Place-names in Landscape Archaeology,

Detecting and Understanding Historical Landscapes', *SAP Societa Archeologica*, 209-224 (16).

- Norn was spoken in Shetland for 300 years after we came under Scottish rule and has not been spoken in Shetland for a further 300 years, yet Norse place-names still survive and are in use today.



Encyclopædia Britannica, 1902.



## Persistence and vulnerability of Place-names

- Place-names are vulnerable, and only exist where a population has survived to pass them on.
- When there is a sudden or catastrophic removal of a population, place-names will be lost forever.

Burraland, Sandwick, Dunrossness.  
Surveyed by OS in 1878.  
Population: 1871 37; 1881 47.

Place-names were recorded because people lived there at the time with the knowledge to tell the Ordnance Survey map-makers what they were.



Shetland, Sheet LXII © National Library of Scotland.

Burraness, Sandwick, Yell.  
Cleared in 1868 of 17 families, 102 people (including my great-grandfather) to make a sheep farm.  
Surveyed by OS in 1877: Population: 0.

Place-names didn't survive here because by 1877 there was no-one left to tell the Ordnance Survey map-makers what they were.



Shetland, Sheet XII © National Library of Scotland.

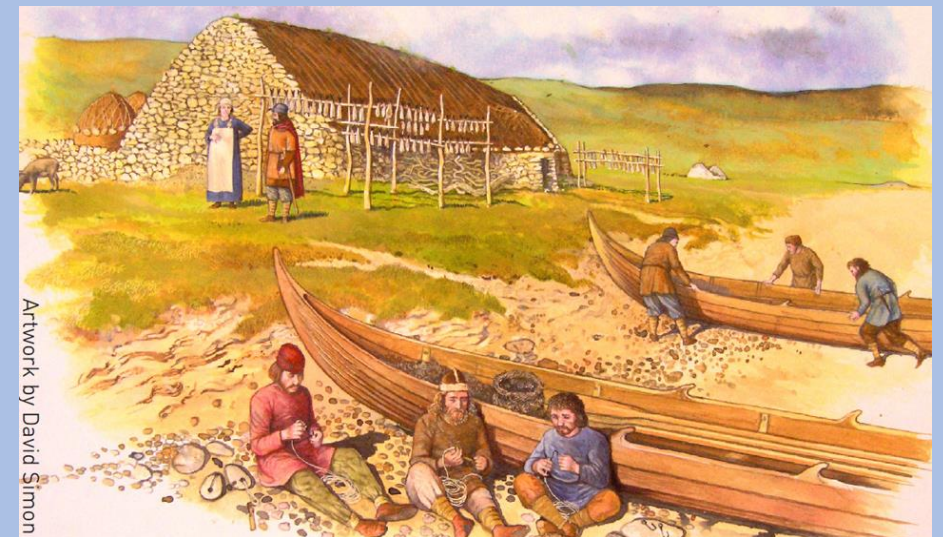
## Picts vs Vikings argument - Genocidal Raiders or Domineering Settlers?

- Some historians cite lack of Pictish place-names as evidence of likely genocide by Vikings; others cite Norse settlers' total disregard for Pictish culture through enslavement. *Smith 2001 Northern Studies Vol 36 pp 7-32.*
- I have never been comfortable with the notion that the Vikings either wiped out Shetland's Pictish population, or so totally absorbed them into Norse culture that nothing of Pictish culture survived.

Why?
- There is no evidence of Pictish language place-names that have been 'Nornified' or have survived, with possible exceptions of the islands Yell, Unst and Fetlar.
- There also appears to be an archaeological time-gap of about 250 years between the last occupation of Pictish houses in Shetland about 600 AD, and Norse settlement longhouses of around 850 AD.
- In-between there is the arrival of the first Papar pioneer monks in the 8th Century, and possibly Viking raiders or outlaws from Norway in the late 8th or early 9th Century.



© Hurstwic



## Catastrophic Climate Change of the Late Antique Little Ice Age

- If there had been a long-established Pictish population in Shetland at the time of the perceived Viking invasion, or Norse settlement, place-names would have been too valuable a resource to eradicate.
- In my paper I offered a third, and more plausible, explanation for the absence of Pictish place-names. I proposed that the 6th Century, catastrophic, and long-lasting Climate Change eradicated Shetland's Pictish population.
- My paper considered the cause and effects in Pictish Shetland of the Late Antique Little Ice Age.
- The Late Antique Little Ice Age (LALIA) was a sudden, long-lasting severe cooling of the Northern Hemisphere during the 6th and 7th centuries AD. It was triggered by four large volcanic eruptions in AD 536, 539/540, 547, and 574 followed by further eruptions in the 7th Century.

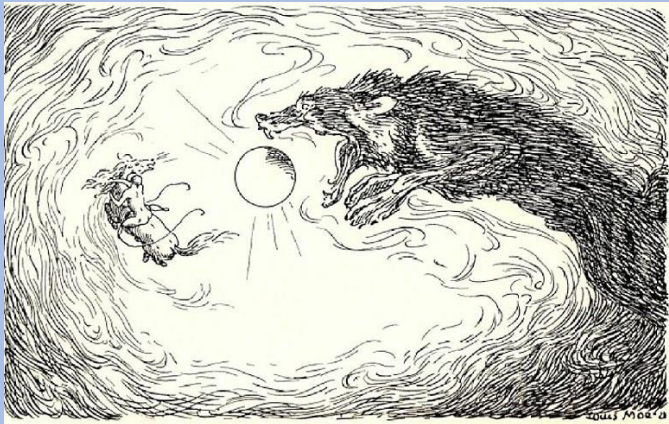


2010 eruption of from Iceland's Eyjafjallajokull.  
*©Etienne De Malglaive/Getty Images.*



## Fimbulwinter: Myth or folk-memory?

- According to Norse mythology, Fimbulwinter is the harsh winter that precedes the end of the world, and puts an end to all life on Earth. The wolf, Fenrir is bound to a rock until Ragnarok, when he will break his bonds, fall upon the gods and devour the sun.
- Was this a folk-memory of volcanic eruptions blocking out the sun and the moon?



Fimbulwinter: The wolf Fenrir swallows the sun.  
"Ragnarok, En Billeddigtning," Louis Moe 1929.

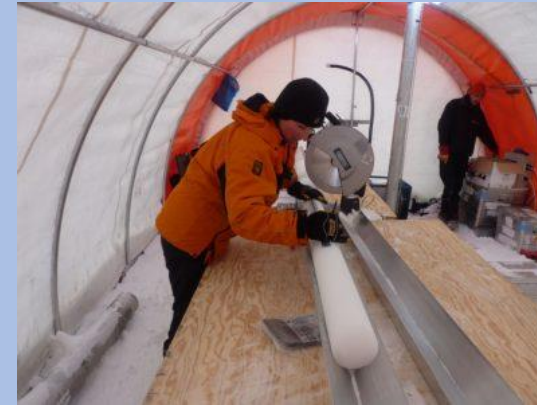
- The Old Norse textbook, the *Prose Edda* says ; "First of that a winter will come called Fimbul-winter. Then snow will drift from all directions. There will be great frosts and keen winds. The sun will do no good. There will be three of these winters together and no summer between."
- Nordic researchers and climate modellers now believe the Fimbulwinter myth stemmed from Late Antique Little Ice Age (LALIA), a real climate disaster which began with volcanic eruptions in AD 536.
- Climate models and proxy data confirm that this was the most severe and longest lasting climate downturn in the last 2500 years.
- The devastating effects of Fimbulwinter-LALIA continued to affect Scandinavia, the British Isles, and the rest of Europe from the mid-6th Century well into the 7th century.



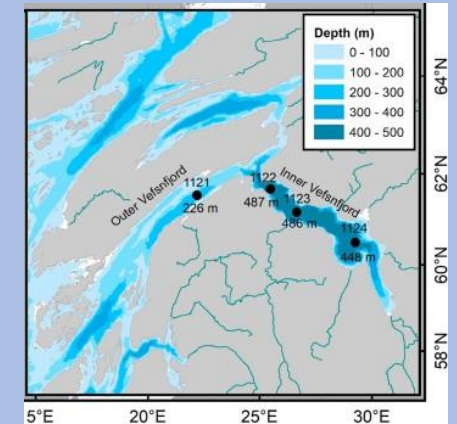
Fimbulwinter: The Wolves Pursuing Sól and Máni.  
J. C. Dollman, 1909

# Climate modellers have reconstructed the Late Antique Little Ice Age climate from multi-proxy data.

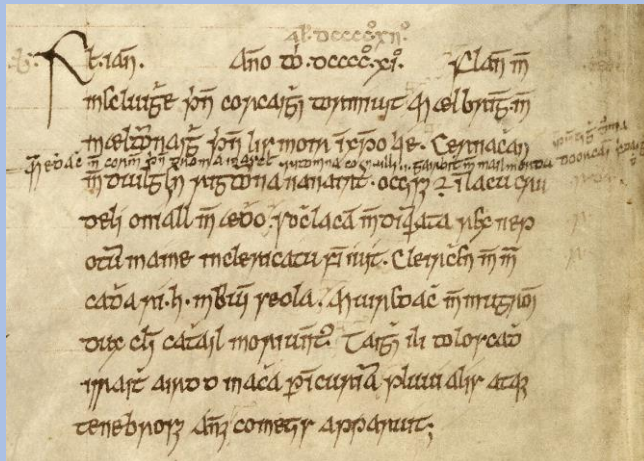
- Greenland Arctic, and Antarctic ice cores.
- Fjord sediments (Norwegian fjords)
- Tree ring growth (Scandinavia & Europe)
- Paleoenvironmental records (from excavations e.g. Old Scatness)
- Contemporary written records (e.g. Annals of Ulster)



Examining Ice Cores © BGS.



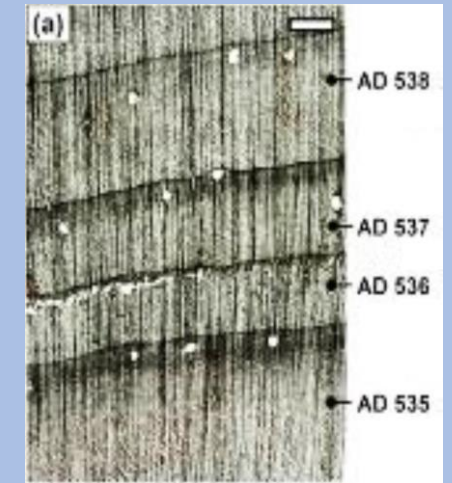
Norwegian Fjords  
© Heldal 2021



Annals of Ulster  
©The Board of Trustees, Trinity College Dublin.



Old Scatness multi-period settlement.  
Photo: Shetland Amenity Trust.



Dating tree rings  
© Helama 2019



## Multi-proxy data allows researchers to chart societal upheaval and famine across Europe in the 6th & 7th centuries.

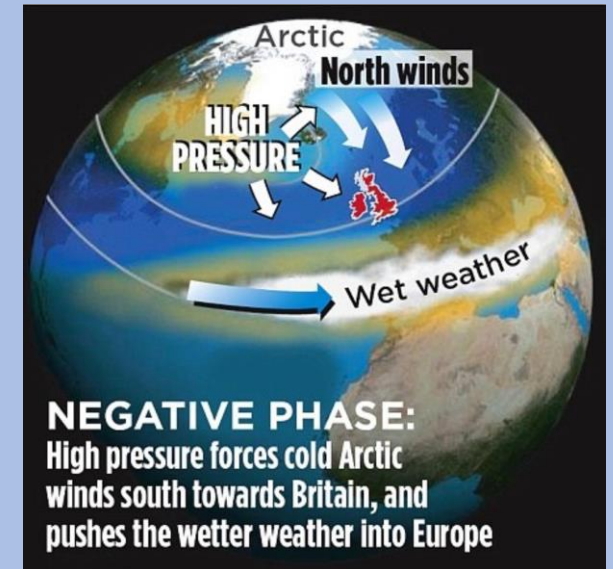
- Writings, such as that of John of Ephesus describe the sun's light as going dim during the year AD 536, which was subsequently followed by a cooling that lasted for over a decade: *“There was a sign from the sun the like of which had never been seen or reported before. The sun became dark and its darkness lasted for eighteen months. Each day it shone for about four hours and still, this light was but a feeble shadow. Everyone declared that the sun would never recover its full light again.”*  
[https://en.wikipedia.org/wiki/John\\_of\\_Ephesus](https://en.wikipedia.org/wiki/John_of_Ephesus)
- Between AD 540 and AD 795 Ireland was swept by a series of major epidemics affecting both humans and cattle and is recorded in the Irish annals.
- It is thought that the climate deterioration following the AD 536 eruptions made populations more vulnerable to the Plague of Justinian that swept Europe, England and Ireland.
- The AD 536/540 climate cooling in Scandinavia has been linked to the increased number of votive gold burials, changed ritual practices, settlement abandonments, demographic decline, famine and the spread of ergotism and Justinian plague.
- For southern Scandinavia, low temperatures in the summers following AD 536 brought ruined harvests followed by famine, thus ending an agrarian economy that had existed for centuries.
- In Gotland, cultivation was abandoned and villages wiped out and burned by conflict, such as the Late Iron Age village of *Vallhagar* in eastern Gotland.
- Recovery of the landscape to production in some areas took four to seven generations. *‘Ruined harvests and grazing for two years in a row, combined with several cold summers and shorter growing seasons for a further decade, would have led unavoidably to serious famine in archaic agricultural societies. It seems reasonable to suggest that the populations of Scandinavia in the mid sixth century may have been halved’.* Gräslund and Price 2012, 431-433.

## The Science: Negative Climate Forcing: volcanoes and the North Atlantic Oscillation

- Climate forcings are a major cause of climate change that originate outside the atmospheric system itself. Negative climate forcing results in regional or global cooling.
- There was already northern hemisphere cooling and advance of ocean-ice at Greenland when Fimbulwinter-LALIA began with a long sequence of volcanic eruptions beginning in AD 536.
- This long 'volcanic winter', was triggered by the outpouring of material into the atmosphere from multiple high-latitude (in Iceland), and large low-latitude, (tropical regions) eruptions.
- Shetland must have been hit by a catastrophic 'double whammy' of negative climate forcing events:
- Whammy 1: The reduction of sun's energy reaching the ground i.e. Total Solar Irradiance (TSI) caused by this series of volcanic eruptions ejecting large amounts of tephra and sulphurous gasses into the stratosphere.
- Whammy 2: This in turn triggered a switch from a positive-NAO phase (mild westerlies) to a prolonged negative-NAO phase (cold northerlies and northeasterlies ).
- A consequence of the post-eruption global cooling from blocked sunlight, and a prolonged negative-NAO after AD 536, was the advance of Northern Hemisphere glaciers and Arctic sea-ice growth.
- Ocean Ice probably extended to south Iceland during Fimbulwinter-LALIA, and extended the AD 536 cold conditions to a multi-decadal, and potentially centennial time-scales.



Arctic ocean-ice. 82N © Allen Fraser.



Negative-NAO phase  
© Daily Mail 28<sup>th</sup> December 2010.



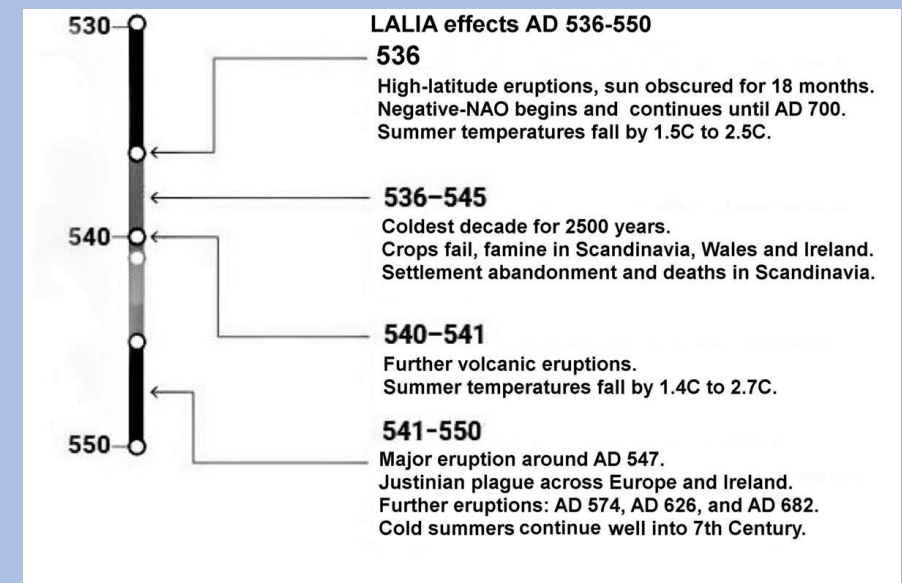
## The AD 536 – AD 682 climate forcing triggers, and overall effects

- High-latitude eruptions occurred in Iceland, and probably in North America. Recent evaluations of tephra associated with an abandoned mid-6th Century settlement in Yorkshire have identified tephra from the Askja volcano in Iceland. *Digging For Britain S11E01*.  
<https://www.youtube.com/watch?v=tm398E2IZbM>
- These eruptions substantially reduced summer temperatures in the Northern Hemisphere.
- The prolonged period of blocking of solar radiation, particularly in the summer months, reduced photosynthesis and thus primary plant and crop production, threatening long term food security. Low crop production, and lack of vitamin D in human skin, makes populations more susceptible to famine and plague.
- A massive low-latitude eruption in El-Salvador has been dated AD 539-540 which would have cooled tropical regions, contributing to the onset and continuation of the negative-NAO phase until AD 700.
- The catastrophic cooling effects following AD 536 were immediate, exceptionally severe and unprecedented – the knock-on severe cooling of northern Europe continued for another 150 years.



Shetland's nearest active volcano.

Katla volcano erupting through Mýrdalsjökull ice cap in 1918 © Wikipedia.

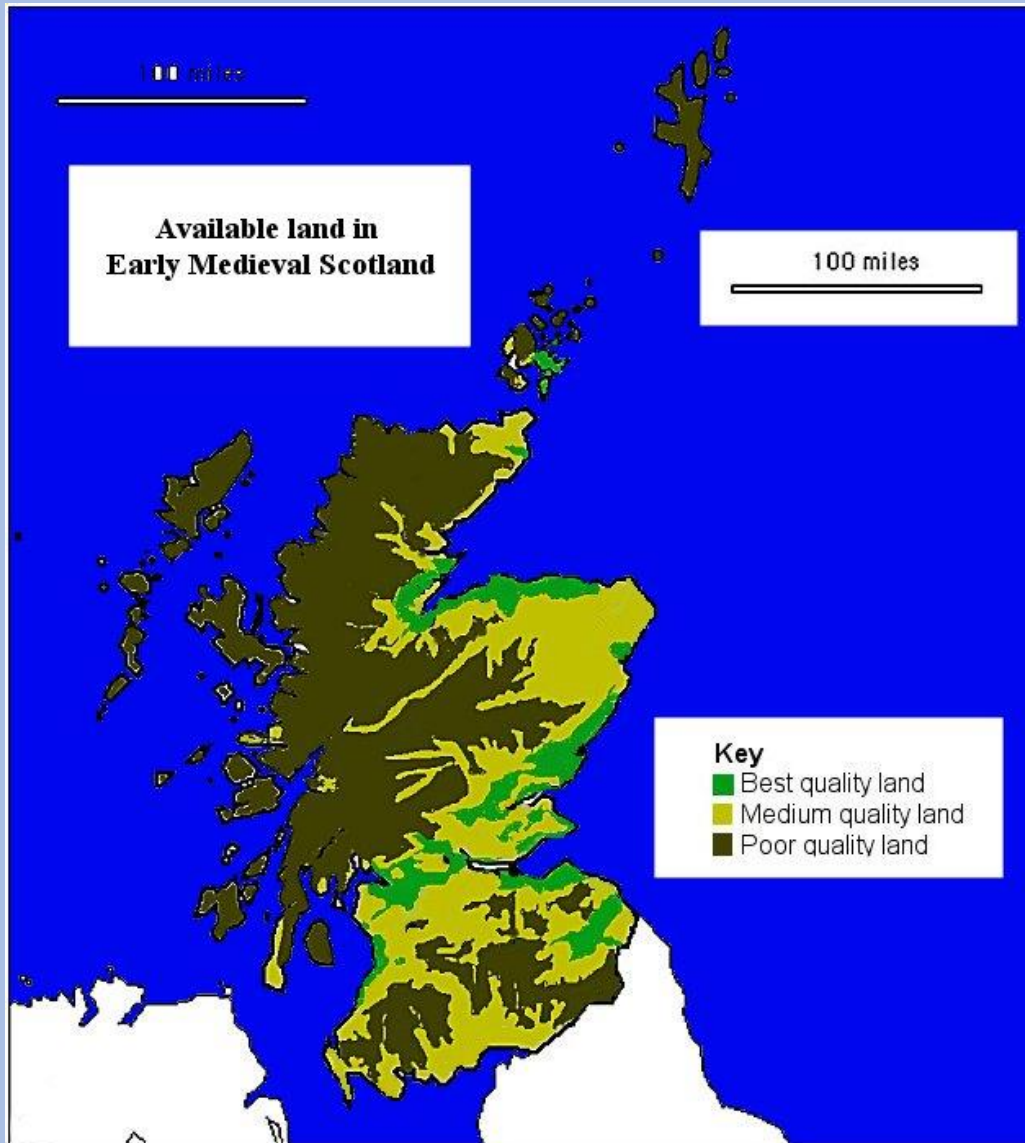


Timeline of volcanic eruptions that triggered Fimbulwinter-LALIA

© Allen Fraser

## Vulnerability of Scotland to climate deterioration

- The poor-quality acidic soils of the Scottish Highlands and Islands are such that they were always on the very edge of agricultural sustainability, and highly vulnerable to climatic downturn and resultant famine.
- Historical records show, that settlements in these areas have often been tipped over the edge of sustainability by climate downturn.
- Scotland's written history tells us that between the years 1550 and 1850, in the Little Ice Age, there were twenty-one periods of famine in Scotland, often leading to settlement abandonment.
- Populations in Shetland only just survived the 18th and 19th century famines because grain was imported from elsewhere. (Not an option during the 6th Century for Shetland's Picts).



Lyons, A M 2000, 'Subsistence Potential of the Land',  
*Atlas of Scottish History to 1707, Edinburgh*

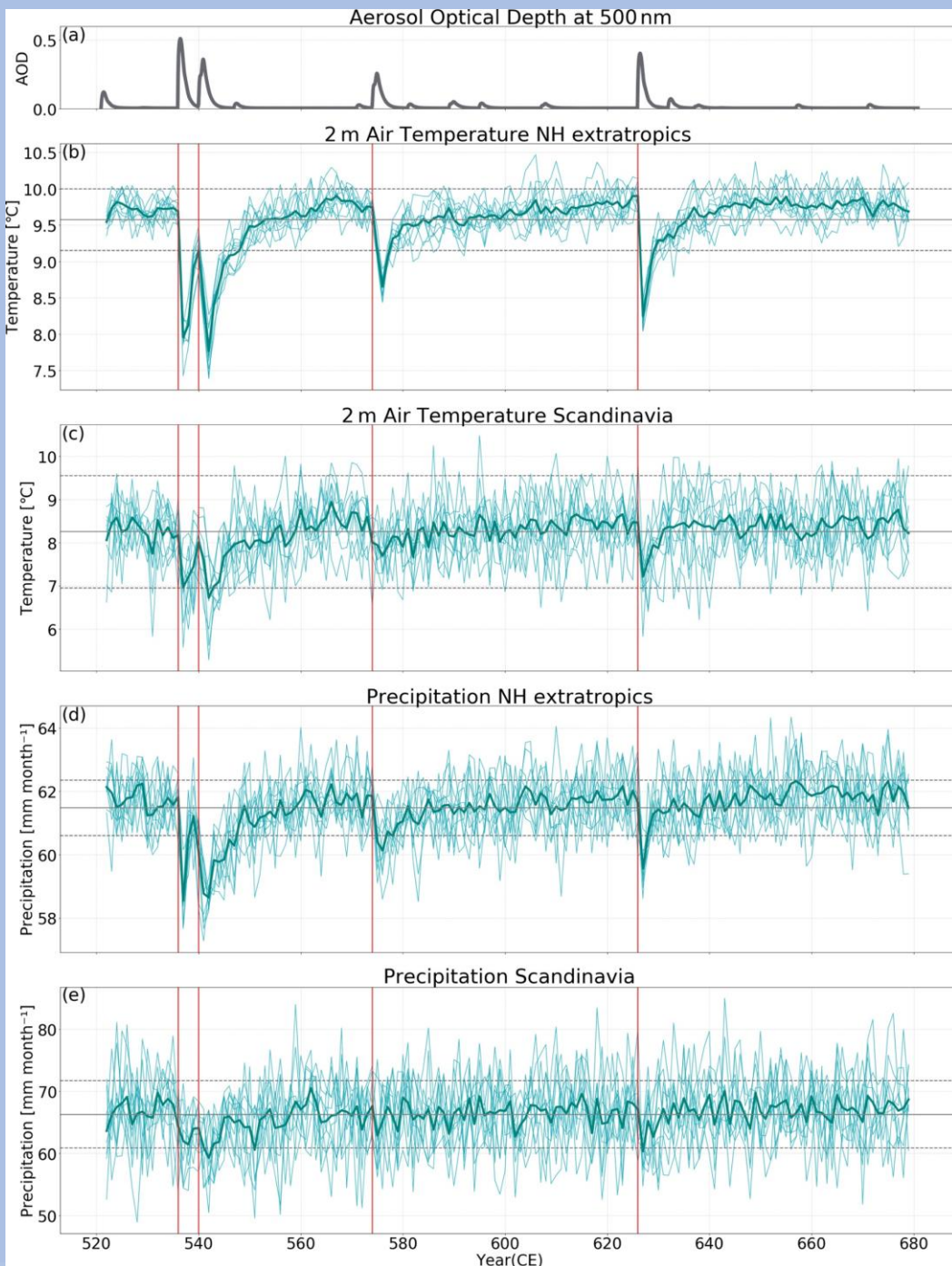


## Vulnerability of Shetland to climate deterioration

- The Macaulay Institute soil survey of Shetland estimates that only about 3% (4,300 ha) of the land area is considered suitable for arable cropping. There is no reason to suppose that land quality in AD 536 was better. Without the evolution of land management, and reclamation to modern standards, it was almost certainly worse.
- Only a very small proportion of Shetland's total land mass was suitable for growing barley. By the 6th Century, six-row barley (*Hordeum vulgare var. vulgare*) was the dominant crop, and the main food source. Bond J M et al 2004. 'Bringing in the Sheaves; Farming Intensification in the Post-Broch Iron Age', in R Housley and G Coles (eds), *Atlantic Connections and Adaptations: Economies, Environments and Subsistence in Lands Bordering the North Atlantic*, Oxford: Oxbow Books, 138-145.
- Shetland's Late Iron Age population practised a subsistence economy, depending on a mixture of animal husbandry, pasture and cereal growing. Agriculture was community based with these communities being settled close to arable land. At the Jarlshof and Old Scatness settlements, grazing pasture was adjacent to Shetland's best arable land.
- Land quality determines the amount of crop production balanced against animal husbandry, particularly overwintering. The numbers of cattle versus sheep are also determined by land quality. Land quality also determines settlement patterns. Even a small change in land quality, or growing conditions, will have a large knock-on effect on crop production and animal husbandry, particularly obtaining fodder for overwintering.
- In periods of prolonged climate downturn, poorer land will be abandoned first, putting additional demands on better land. This in turn will add further stress on Shetland's farming communities.
- Following good harvests it is necessary for about 25% of grain production to be stored for planting the next year. In years of poorer harvests, a greater percentage of yield needs to be held back for planting for food production levels to be sustained.
- During prolonged periods of bad or failed harvests, the Law of Diminishing returns will very soon completely exhaust any reserves.



**Hordeum vulgare var. vulgare**  
© Biopix: JC Schou

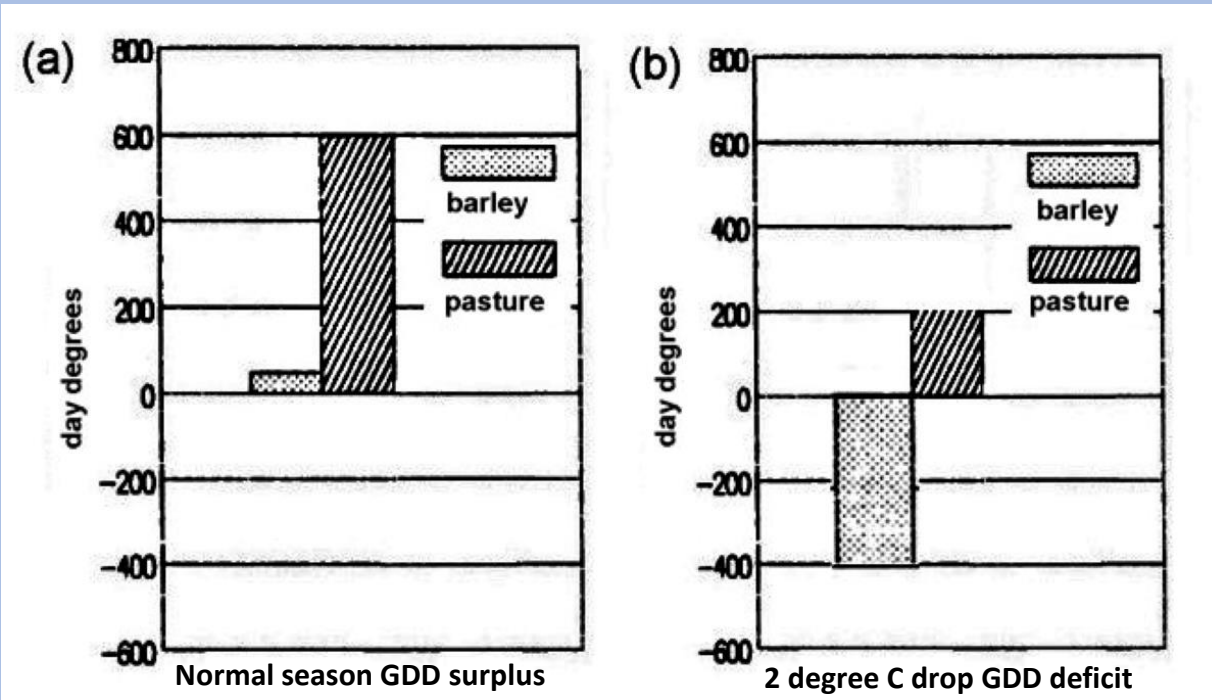


## Cold growing seasons, Drought & Growing Degree Days

- **Aerosol Optical Depth (AOD)** is a measure of extinction of solar radiation reaching the ground by particles in the atmosphere. The AOD on the Growing Season climate model (a) shows four large eruptions in AD 536, 540, 574, and 626 visible as large peaks, indicating a very opaque sky from tephra and sulphur in the atmosphere.
- The climate modelling temperature output, (b) & (c), show at AD 536 an immediate growing season drop in air temperatures of over two degrees in the high latitude Northern Hemisphere, and in Scandinavia. This cooling remains significant for at least 10 years after the AD 536 eruption. Cooling is repeated following subsequent eruptions.
- Increased AOD also causes much less evaporation into the atmosphere from sea and land, hence much less rainfall in the growing season across high latitudes and Scandinavia (d) & (e).
- Growing degree days (GDD), are accumulated heat units, used to estimate the growth and development of certain crops during the growing season.
- GDD values include a minimum threshold base temperature which must be exceeded for growth to occur. Depressed growing season temperatures (b) & (c) indicate greatly reduced GDD values for high latitudes and Scandinavia.
- In pre-modern times, barley had a basic requirement of approximately 1000–1350 GDD for a growing season. These models show that this baseline could not be met, so barley could not be grown in these areas for at least 10 years after AD 536.
- GDD values for a specific area can be calculated by using local weather data.



## 'Whammy 1' Impact: Cold Growing Seasons and prolonged Crop Failure in Shetland



Temperature data from Baltasound, Unst (1931-1947, 1953-1960).

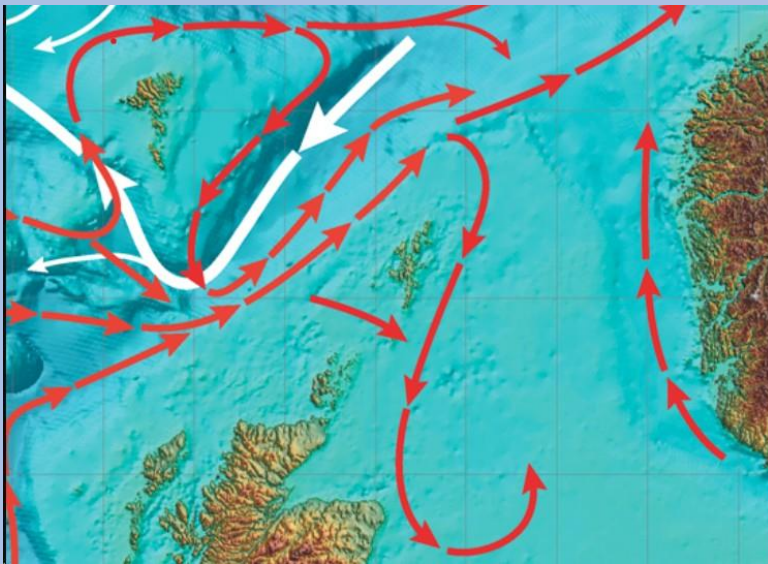
(a) Normal growing season; using GDD barley critical level baseline 1050 at 4.4C. Baseline 5°C, 350 GDD for pasture grasses. Giving a surplus: 50 GDD barley, 600 GDD pasture grasses.

(b) Temperature drop of two degrees for the growing season. Deficit: 450 GDD barley. Surplus: 200 GDD pasture grasses.

Adapted from McGovern et al 1988.

- Modelling AD 536 temperature downturn effect on growth, measured by using GDD as a predictor of crop development, showed a fall of 40-50% across Scandinavia from a prolonged 2C summer cooling.
- Shetland is nearer to the Iceland eruptions so the fall in GDD values for Shetland is likely to be at least that of Scandinavia, probably worse.
- Figure 4(a) shows vulnerability of Shetland to growing a barley crop. Even a small decline in summer temperatures will result in a loss of the 50 GDD surplus above the baseline.
- In Figure 4(b) a fall of just 2 degrees C shows complete harvest failure with a drop of 400 GDD below the baseline and much reduced pasture value.
- Even a modest recovery of summer temperatures by degree or so will not make grain production possible throughout the long climate downturn.
- From a prolonged 2 degree cooling it is clear that barley could not grow in Shetland for at least 10 years, and probably not for 20 years after AD 536.
- Lack of rainfall will further reduce pasture growth below the GDD base level in many areas.

## 'Whammy 2' Impact: North Atlantic Oscillation and Fishing Failure



<https://eos.org/science-updates/tracking-water-through-the-north-atlantic-ocean>

- In the Positive-NAO phase
- Prevailing westerlies re-circulate the Continental Slope Current around Shetland.
- The abundance of fish and fish species in Shetland waters depends on the upwelling and distribution of nutrients by this Continental Slope Current

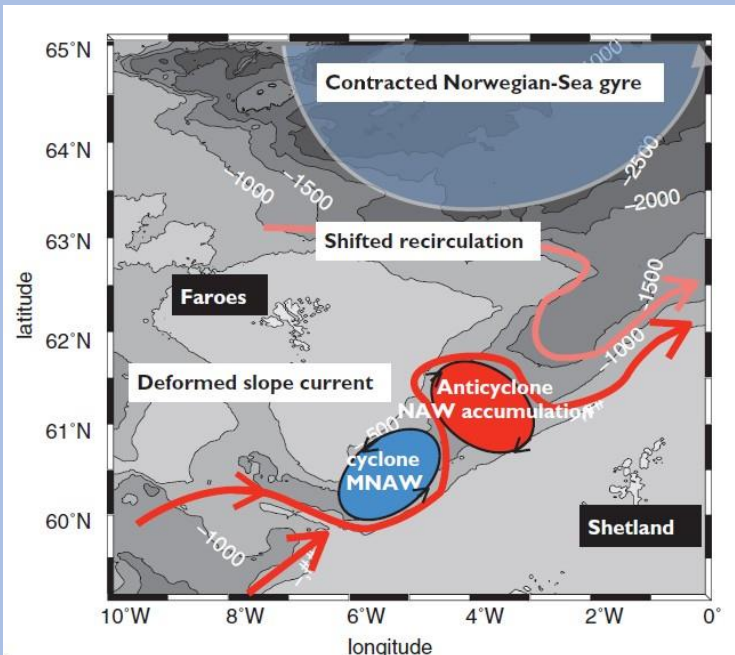


© Cathal McNaughton (nightfly)

### In a switch to a Negative-NAO phase

- Prevailing easterlies cut off the circulation of the Continental Slope Current around Shetland.
- Nutrients will no longer be distributed around Shetland, and fish abundance, size and species will decline. Likewise seabirds, seal numbers and whale strandings.

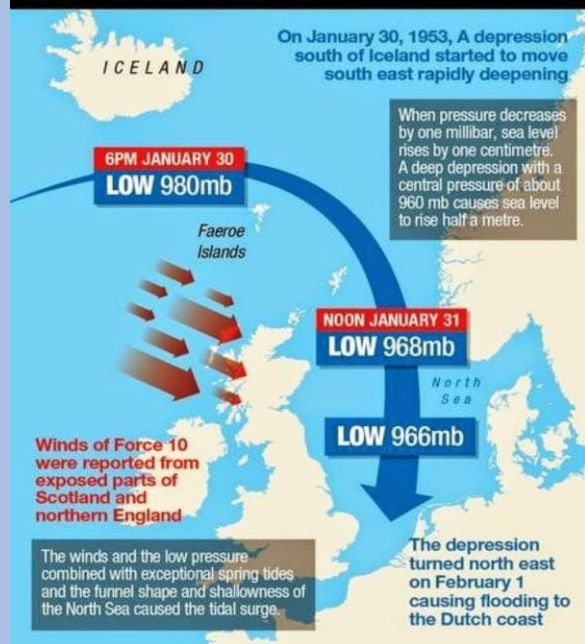
- Data from the Norwegian fjords show an abrupt end of a positive-NAO phase, and the abrupt beginning of a negative-NAO phase following the volcanic outpouring in AD 536.
- This research shows that the negative-NAO phase persisted until AD 700.
- The most abundant Pictish fish remains from Old Scatness excavations are the nearshore species gadids (sillicks and pilticks).
- There was a fish scarcity in Shetland following the onset of the negative-NAO. The last buildings occupied by the Picts in mid-6th century Old Scatness *'contain relatively few fish bones and those which are present are typically from small gadids'*. Dockrill et al 2010. *Excavations at Old Scatness, Shetland Volume 1. 158-165.*
- Not only was this food source severely reduced, or ended, so was the availability of fish liver oil for lamp-lighting.
- As well as the negative-NAO bringing bitter weather, the prevailing northerly winds, and weakened Atlantic currents, will have reduced driftwood supply for roofing and so on.



Chafik 2012, 11, Figure 11.



## How the storm surge happened January 30 and 31, 1953



<https://bedfordschoolgeography.blogspot.com/2015/02/north-sea-floods-1953-case-study.html>



Storm-surge sand layers in peat at Basta Voe, Yell.

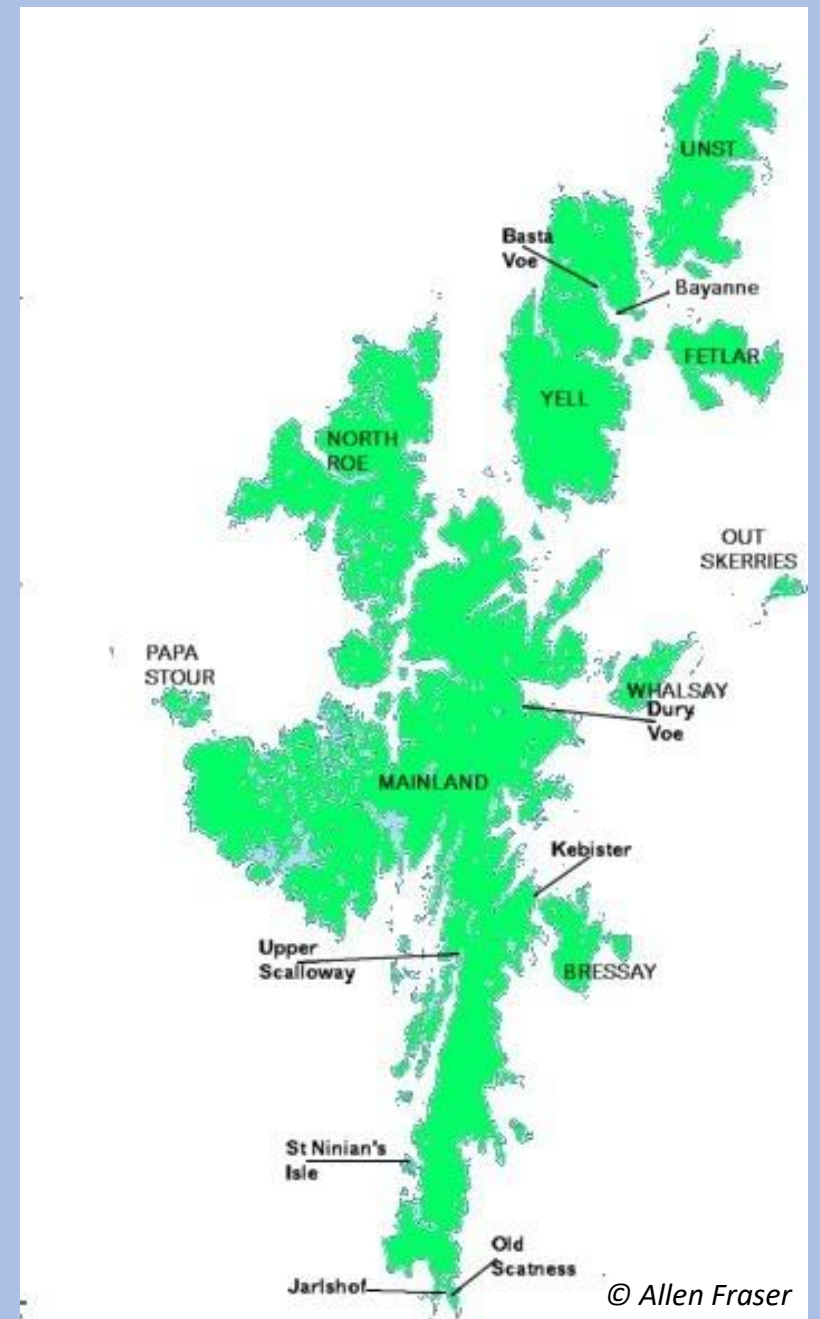
© Allen Fraser

## ‘Whammy 2’ Impact: Communications severed

- Communications with mainland Scotland Pictland was tenuous at best. Boat journeys from Shetland would have only been possible during the most favourable summer months in favourable years. Only a very few of the population would have the necessary navigation skills.
- A negative-NAO may result in fewer storms, but climate modelling indicates that storms, when they do occur, will be more severe. There is evidence that rare, but exceptionally severe storms, affected Shetland with consequent storm surges sweeping coastal settlements.
- Marine sand layers carried inland show that at least three large storm surge events affected Shetland between AD 380 and AD 650. In Basta Voe (Yell) the run-up from the thickest layer, a tsunami-like event, has been traced inland up to 9 metres above today’s sea level. A similarly dated event has been recorded in Dury Voe 40km to the south.
- The highest storm-surge event would have had a devastating effect by sweeping away low-lying coastal settlements and boats capable of making the crossing to Scotland.
- The prevailing negative-NAO east to north-easterly winds would have broken Shetland’s sea-link with Scotland permanently.

## Climate downturn: Regressive architectural responses

- Climate deterioration, perhaps partially due to solar cycle cooling, had already begun before the AD 536 climate forcing rapidly brought on the Fimbulwinter-LALIA.
- Settlements on poorer agricultural land were adversely affected first, and would be most likely to be abandoned first.
- Settlements at Bayanne (Yell) and Kebister (near Lerwick) on poor agricultural land had already been abandoned about a century before AD 536.
- Excavations here, and later at other sites, shows an occupation change from large roundhouses to wheelhouses to small cellular structures before abandonment.
- At Upper Scalloway broch and village there are small 6th century multicellular buildings, including a rebuilding of small cell structure inside the remains of the broch to *'an apparently quite low standard'*. Sharples 2002 *'Scalloway: A Broch, Late Iron Age Settlement and Medieval Cemetery'*.
- At St Ninian's Isle, excavations uncovered Pictish cellular buildings that had been abandoned by the 7th Century - described as *'... small and circular, possibly comprising conjoining cells and reminiscent of huts rather than substantial round houses.'* Barrowman et al 2011, *The Chapel and Burial Ground on St Ninian's Isle, Shetland; Excavations Past and Present, 189-190.*
- Was this regressive change from large to small buildings a response to climate change and rapid population decline?





## Climate downturn: Architectural regression and abandonment at Old Scatness



Old Scatness multi-period settlement.  
*Photo: Shetland Amenity Trust.*

- Both Old Scatness and Jarlshof multi-period settlement sites show a regression in architectural style by the Pictish inhabitants during climate downturn.
- Before the onset of the climate downturn the inhabitants of these two settlements were living in substantial dry-stone 'roundhouses', (e.g. Structure 12).
- As climate downturn advanced, smaller diameter 'wheelhouses' were being constructed. Wheelhouses differ from 'open plan' roundhouses by having a smaller ground footprint, and internally are divided into cells by corbelled stone piers.
- At Old Scatness, as at Jarlshof, some wheelhouses were built by reconstruction within existing roundhouses (Structures 23, 11 and 21). A wheelhouse was also constructed inside the previously abandoned broch (Structure 7).
- Later, a smaller multi-cellular dwelling, (Structure 7), dated to mid-6th Century, was constructed inside the wheelhouse as a response to the Fimbulwinter-LALIA climate downturn.
- Mid-6th century dates have also been returned from a small semi-subterranean 'figure-of-eight' cellular building on the periphery of the site.
- About five of this type of building were removed during excavations. So all the great preceding buildings had been gradually abandoned in favour of small semi-subterranean hovels.



## Climate downturn: Architectural regression and abandonment at Jarlshof.

- In the Middle Iron Age from 400 BC to AD 200, there was the establishment of a broch and the addition of a walled outer courtyard with at least one large aisled roundhouse.
- In the Later Iron Age-Pictish period AD 400 to ~AD 600, there was firstly, construction of four wheelhouses and one inside the broch. Then there was an abandonment of these, and the construction of small, so-called 'jelly-baby' houses partly dug into the ground.
- Architectural regression from larger to much smaller dwellings and final abandonment is coincident with climate deterioration leading up to and following AD 536.
- Site reoccupation only occurred about 250 years after the Picts i.e. c. AD 850-1200 Norse settlements.



Jarlshof multi-period settlements.  
Aisled roundhouse cut in half by later wheelhouses.  
Pictish houses (circled) in distance.  
© Sophie Godefroy 2024.



Semi-subterranean Pictish houses at Jarlshof.  
© Jenny Murray 2024.



Norse buildings at Jarlshof.  
© Jenny Murray 2024.



## Fimbulwinter-LALIA: Overall Impact in Shetland.

- Well before the AD 536 volcanic outpourings the population of Shetland was already under stress and in decline. Their response to the prolonged climate downturn before, and after AD 536, is indicated by a regressive change in dwellings from large roundhouses to wheel houses to semi-subterranean small hovels, and eventually abandonment.
- The AD 536 eruptions began in March, when Shetland's agrarian communities were at their most vulnerable after winter, and before seasonal planting.
- The cooling effects of AD 536 eruptions were so harsh, immediate and unrelenting, so that even better land became immediately unproductive for barley, due to failure to meet the GDD minimum threshold.
- AD 536 was the beginning of the coldest two decades in the last 2500 years. No cereal would grow for human food, or fodder for overwintering animals. Conditions would become ideal for contamination of any remaining stored grain in souterrains by poisonous ergot.
- Pasture would become severely reduced to non-existent. Cattle and other livestock would be wiped out as they either starved or were killed off for food. Access to raw materials for clothing would end. A weakened, starving population would find working peat for fuel to heat their miserable hovels near impossible. Fishing for food and lamp oil would fail.
- The only fallback food resources were in the seashore, the freshwater lochs and burns, and seasonal bird life. These resources would soon become depleted and eventually fall below sustainable level.
- Continuing cooling eruptions in the 6th and 7th Centuries prolonged the negative-NAO phase, and ensured that winters would have been exceptionally severe with heavy snowfall and unrelenting cold.
- So prolonged and bitter was the climate disaster ending food sources that eventually there was no survivors. Contact was permanently severed with mainland Scotland's Pictland, which itself was severely impacted, and all knowledge of Shetland's existence there ended.



Irish Famine memorial Dublin.

*Getty images.*

## Fimbulwinter-LALIA: Picts in North Roe?

- A recent survey of North Roe by Steve Jennings has highlighted the presence of many multicellular, semi-subterranean dwellings at five sites that are almost certainly Pictish. *Jennings, S 2021, 'The Iron Age in the Neolithic Axe Factory: North Roe, Shetland', Archaeology Shetland.*
- Sites at Giant's Garden, Roer Water and Birka Water consist of multiples of semi-subterranean cellular dwellings, almost all non-excavated and previously unrecorded.
- These probable Pictish dwellings lie well inland, 100 metres AMSL, following a broad glacial valley that forms many lochs of all sizes along its floor.
- The lochs here are almost all interlinked by watercourses and feed one of Shetland's largest burns that flows south-east to the sea at the Voe of the Brig, Collafirth.



Pictish hovel at Roer Water © Vincent Toner





## Fimbulwinter-LALIA: Picts in North Roe, their last outpost?



Burn of Roerwater from Giant's Garden. ©Allen Fraser

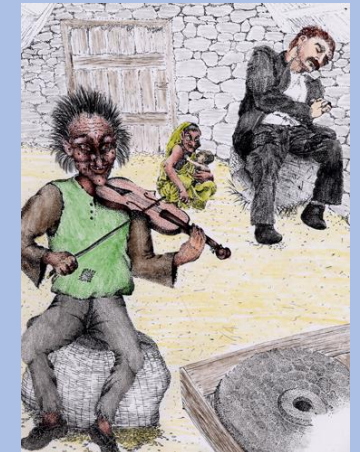


Burn of Roerwater has many such pools between the Loch and the sea forming natural potential fish traps. © Allen Fraser

- Is it reasonable to suppose that, in event of the long-term crop and shore fish failure, starving survivors of famine moved to set up dwellings near the only remaining food source; loch trout and seasonal runs of salmon and sea trout?
- The Burn of Roerwater has many natural stepped pools between the Loch and the sea forming natural fish traps.
- Clearly there was no scope anywhere within the high exposed valley for arable agricultural production.
- I suggest that all three sites were built to cope with an extremely harsh climate in this upland valley floor, near the only remaining food source.
- Over 200 years later did the Norse find these abandoned 'underground' dwellings and, from this, did the legends and stories of the Huldufólk (Hidden people), the Hill-folk and the Trows come?

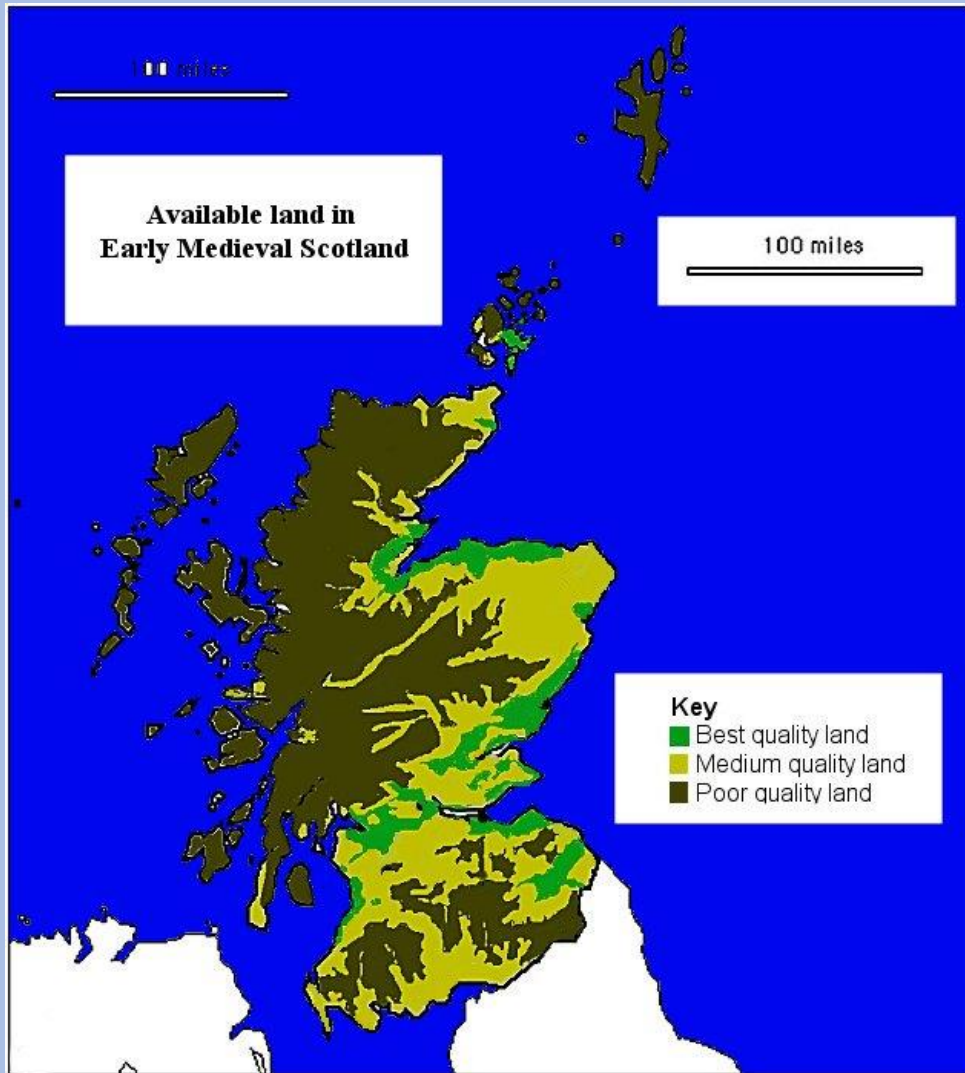


Pictish hovel at Roer Water  
© Vincent Toner



Trowie fiddler  
Image from Da Book O Trows  
created by Davy Cooper

## Fimbulwinter-LALIA: Postscript, Greater Pictland and Orkney.



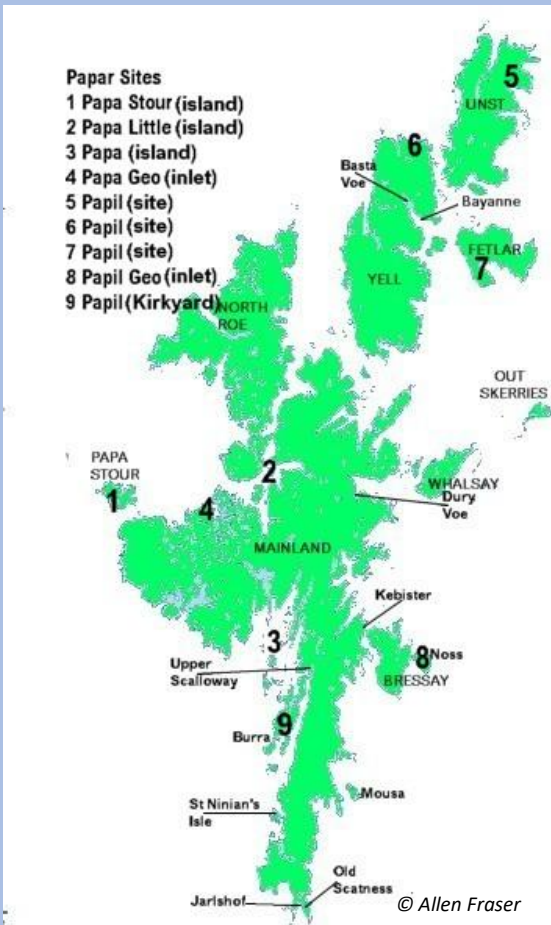
Lyons, A M 2000, 'Subsistence Potential of the Land',  
*Atlas of Scottish History to 1707, Edinburgh*

- Climate induced famine, and settlement disruption, doubtless affected Orkney, the Western Isles and Northern Pictland of mainland Scotland during the Fimbulwinter-LALIA. Some of the Western Isles may have suffered the same fate as Shetland.
- Northern Pictland in mainland Scotland saw population movements and conflict with large settlement abandonment and establishment of hill forts.
- Iona had been established by St. Columba around AD 563 and, over the next few decades, he and his followers set about converting the Picts of mainland Scotland. Perhaps the old gods of Pictish harvests had failed, and this was an opportune time to welcome a new God to take charge.
- In a more fertile part of Orkney, a small remnant of a Pictish population may have survived on an enclave of still productive, 'best quality land'. This has been indicated by a continuum of the population's DNA through to Norse settlement. *Morez et al 2023Plos Genetics. <https://doi.org/10.1371/journal.pgen.1010360>*
- Orkney may have regained some contact with greater Pictland and is mentioned in Medieval, pre-Norse settlement texts such as in Adomnán's *Life of Saint Columba*. *Sharpe 1995.*
- So, did Orkney become a staging post for 8th Century Irish and Pictish monks to head north in search of isolation with God, and to become the first post-famine settlers in now uninhabited Shetland?



## Fimbulwinter-LALIA: Postscript: Filling the 250-year Time Gap between Picts and Norse

- There is no evidence of a Pictish population in Shetland at Old Scatness, St Ninian's Isle, or Upper Scalloway beyond the end of the 6<sup>th</sup> Century.
- Adomnán regards Orkney as the farthest reaches of his known world, indicating that all knowledge of Shetland had been lost until the arrival here of the first pioneer monks from Ireland and Scotland. *Life of Saint Columba*, ca. AD 597.
- Likewise, the Irish monk Dicuil, c. AD 825 writes of a likely journey from Orkney to Shetland : *There are many other islands in the ocean to the north of Britain which can be reached from the northern islands of Britain in a direct voyage of two days and nights with sails filled with a continuously favourable wind. A devout priest told me that in two summer days and the intervening night he sailed in a two-benched boat and entered one of them.* *Liber De Mensura Orbis Terrae*. pg 75. *Corpus of Electronic Texts Edition*. <https://celt.ucc.ie/published/T090000-001.html>
- In the early 8th Century Irish and Pictish monks built hermitages in Shetland, and were later named the 'Papar' by the Viking raiders or Norse settlers. Nine Papar site place-names are known in Shetland.
- The Monks Stone may depict monks crossing the sea to a monastic settlement at Papil, in the island of West Burra where the stone was found.
- The Papar settlements in the islands of Yell, Unst, Fetlar, Papa Stour, Burra and Bressay all were capable of cereal production with access to pasture. The scattered and independent nature of these six sites suggest that they were there to support isolated hermitages of the first post Fimbulwinter-LALIA settlers in Shetland.
- In the 8th Century there is the apparent re-use of an abandoned round house at Old Scatness either by Papar monks or overwintering Vikings.
- Only In the mid-9th Century did permanent Norse dwellings appear in Shetland.



The Monk's Stone in Shetland Museum.

## Fimbulwinter-LALIA: Postscript: Filling the 250 year Time Gap between Picts and Norse?

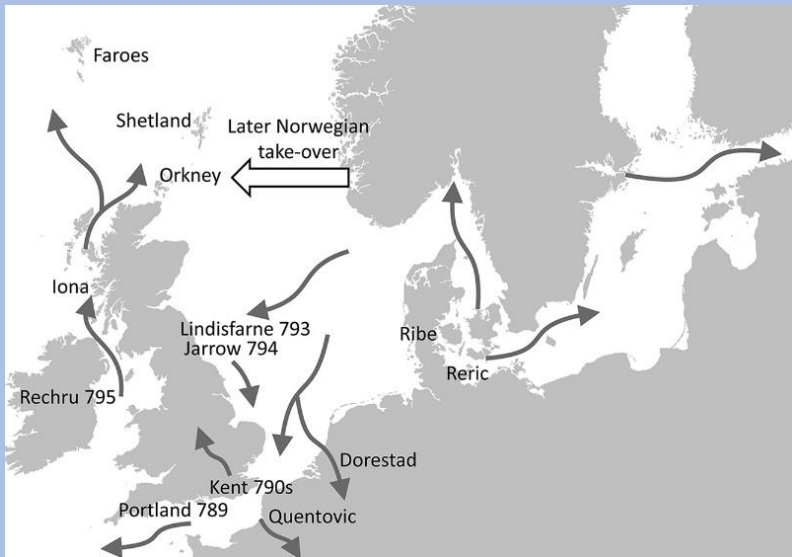


Kame of Isbister settlement.

Photo Shetland Flyer Aerial Media

- Could have Shetland been a staging post for the late-8th Century Viking raids on the Irish coasts (AD 795)?
- Or is it more likely that isolated defensive settlements like the Kame of Isbister were temporary winter strongholds for Vikings' outlawed from Norway?
- The Irish monk Dicuil, c. AD 825 also writes: *There is another set of small islands, nearly all separated by narrow stretches of water; in these for nearly a hundred years hermits sailing from our country, Ireland, have lived. But just as they were always deserted from the beginning of the world, so now because of the Northman pirates they are emptied of anchorites, and filled with countless sheep and very many diverse kinds of sea-birds. I have never found these islands mentioned in the authorities.* Liber De Mensura Orbis Terrae. pg 77. Corpus of Electronic Texts Edition. <https://celt.ucc.ie/published/T090000-001.html>

- Here Dicuil could be describing early 8th Century settlements by the first reclusive monks in the smaller Shetland islands with Papar names, or the North Isles of Shetland (Yell Unst and Fetlar).
- Egil's Saga tells us that in the time of King Harold Fairhair (ca. AD 850-932) many men fled from Norway and settled in many deserted places including Shetland.
- Perhaps David Griffiths is right in his suggestion that Ireland and the Western Isles were attacked from the south and permanent Norse settlers were after all latecomers to Shetland? Griffiths D. Rethinking the early Viking Age in the West. Antiquity. 2019;93(368):468-477. doi:10.15184/aqy.2018.199



Map of early Viking activity in the West (arrows indicate the sequence of expansion). Figure 1 Griffiths 2019.



## Finally: Back to our Place-names

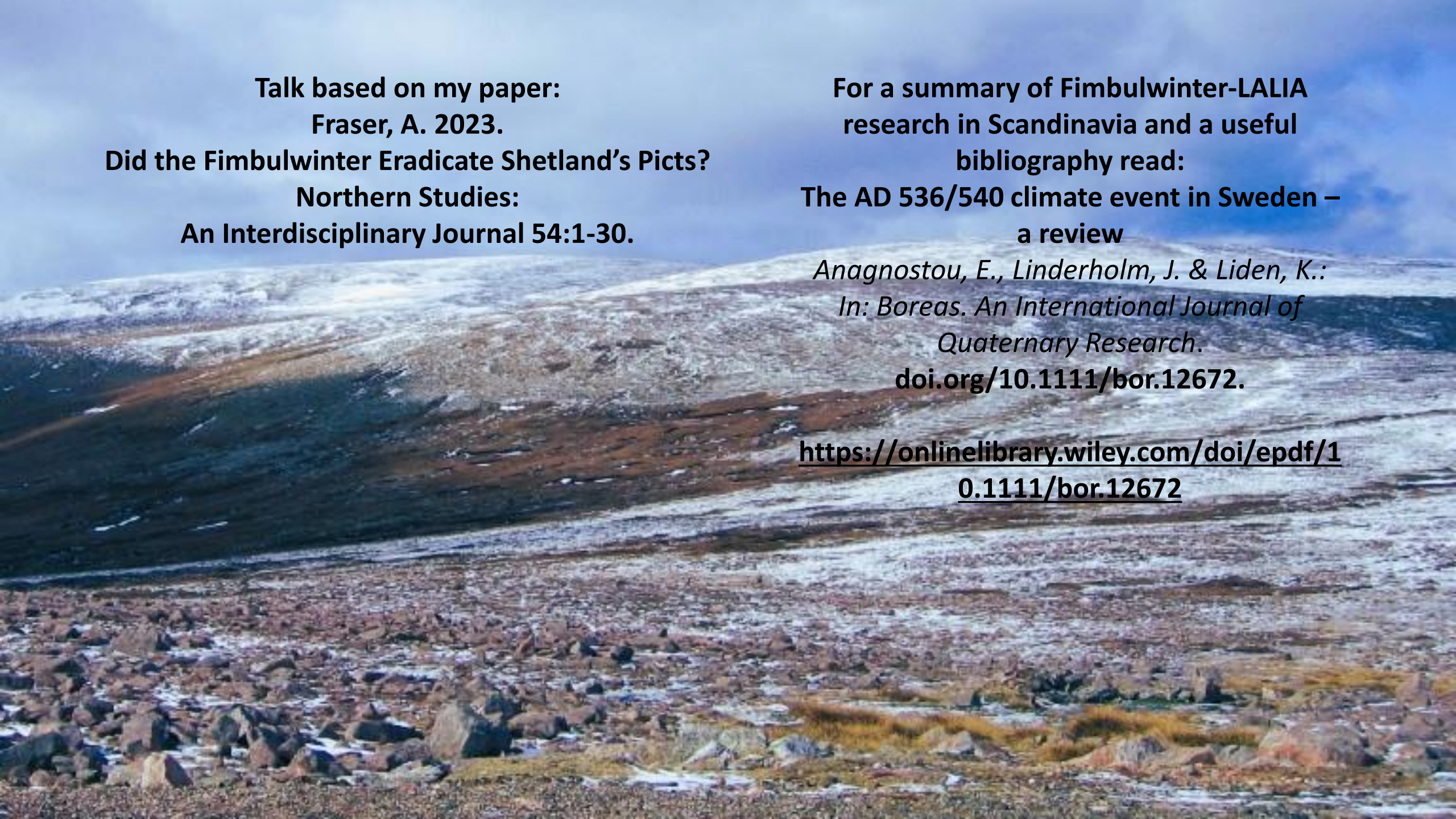
- Shetland's Pictish place-names didn't vanish because Vikings killed all the Picts – they never met. Shetland's Pictish population had died out long before the Viking/Norse arrived.
- Irish and Pictish monks arrived before the Viking/Norse did, probably in the early 8th Century.
- The Papil Stone, from Papil, Burra, has both Christian and Pictish iconography with strong Irish connotations, and was likely part of a community of mixed Irish and Pictish clerics. *Kilpatrick 2011 The Iconography of the Papil Stone.*
- The tiny Papar settlements in Shetland clearly survived because we know of them today through place-names.
- They grew during the Norse Age to be significant monastic sites showing that a symbiotic relationship of mutual benefit existed during that time.
- I guess that it was the Papar that named, and passed on the island names we know as Yell, Unst and Fetlar.



The Papil Stone replica, St Laurence Kirkyard, Papil, Burra. Photo Allen Fraser







Talk based on my paper:  
Fraser, A. 2023.  
Did the Fimbulwinter Eradicate Shetland's Picts?  
Northern Studies:  
An Interdisciplinary Journal 54:1-30.

For a summary of Fimbulwinter-LALIA  
research in Scandinavia and a useful  
bibliography read:  
The AD 536/540 climate event in Sweden –  
a review

*Anagnostou, E., Linderholm, J. & Liden, K.:*  
*In: Boreas. An International Journal of*  
*Quaternary Research.*  
[doi.org/10.1111/bor.12672](https://doi.org/10.1111/bor.12672).

<https://onlinelibrary.wiley.com/doi/epdf/10.1111/bor.12672>