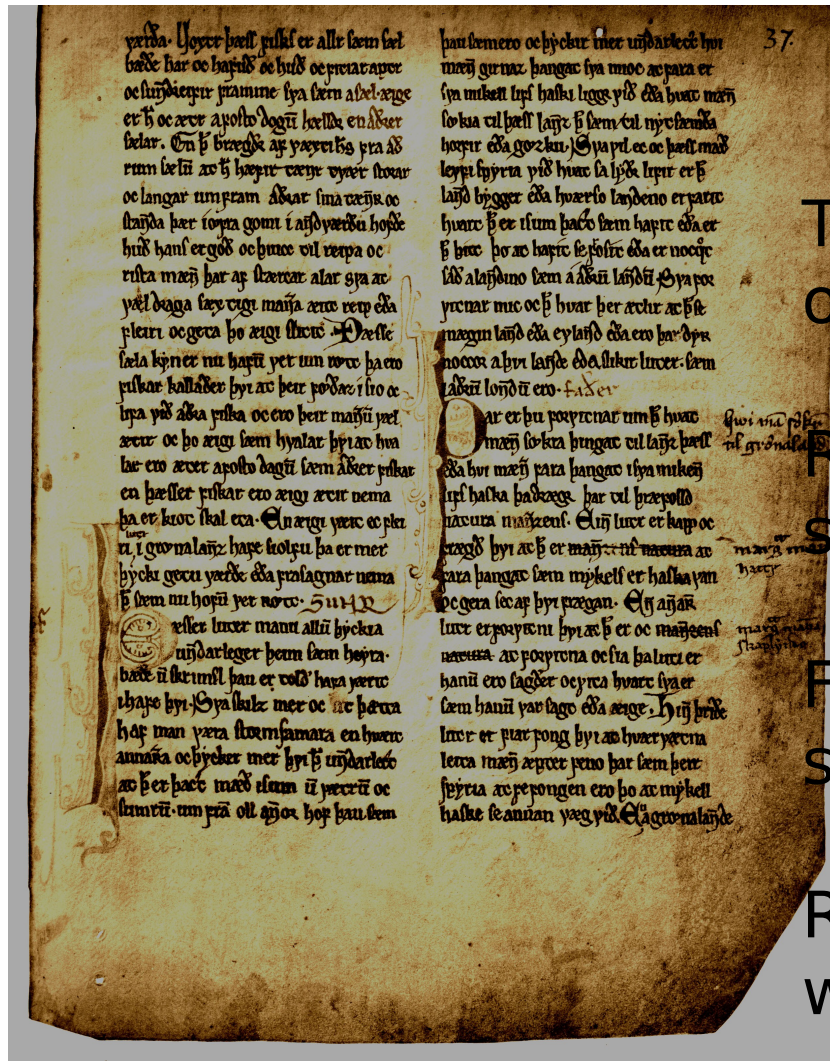


# Dynamic and Synoptic Meteorology in the Middle Ages

# The King's Mirror (Konungsskuggsjá)



Written around 1240

The King's mirror has a chapter on meteorology:

Rain is associated with southeasterly winds

Fog is associated with southerly winds

Rainshowers are associated with southwesterly winds

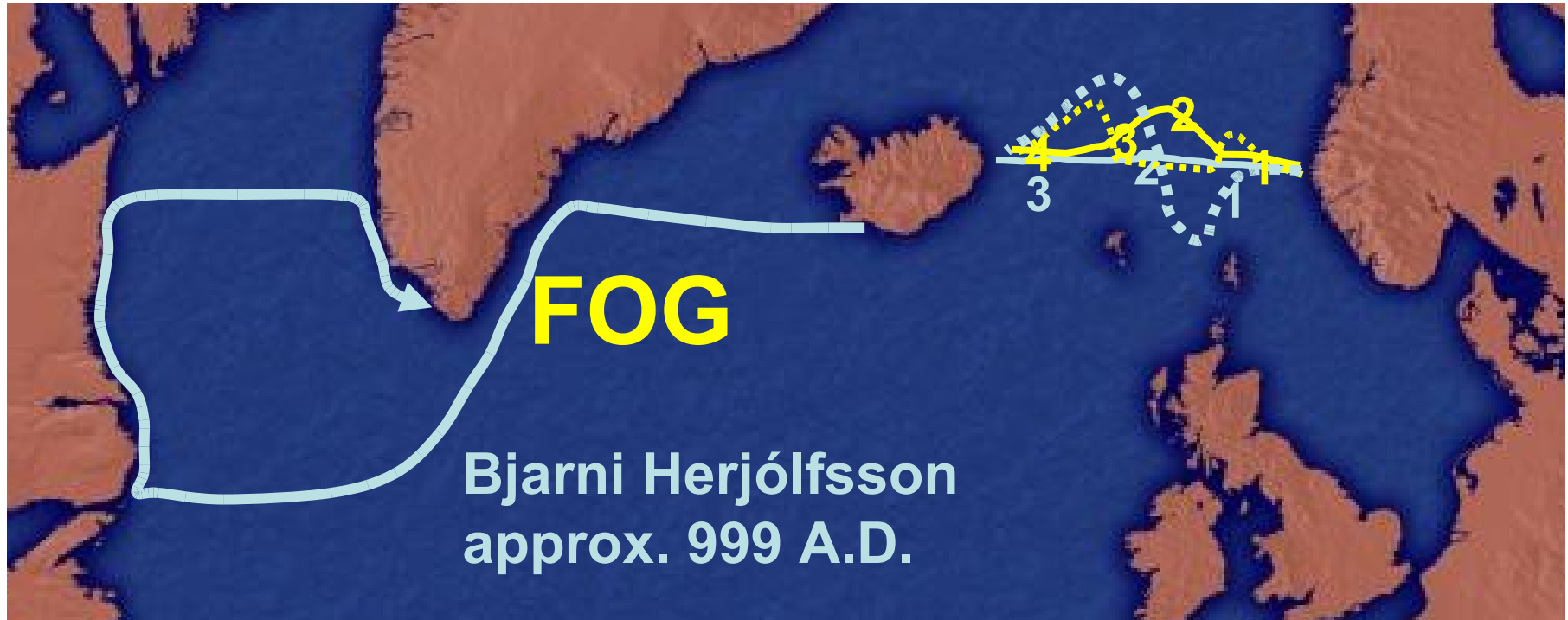
See Páll Bergþórsson; The Wineland Millenium, 2000

Using the rules of the King's Mirror it becomes apparently quite easy to navigate across the ocean

**However, the King's mirror had no section on mountain meteorology**

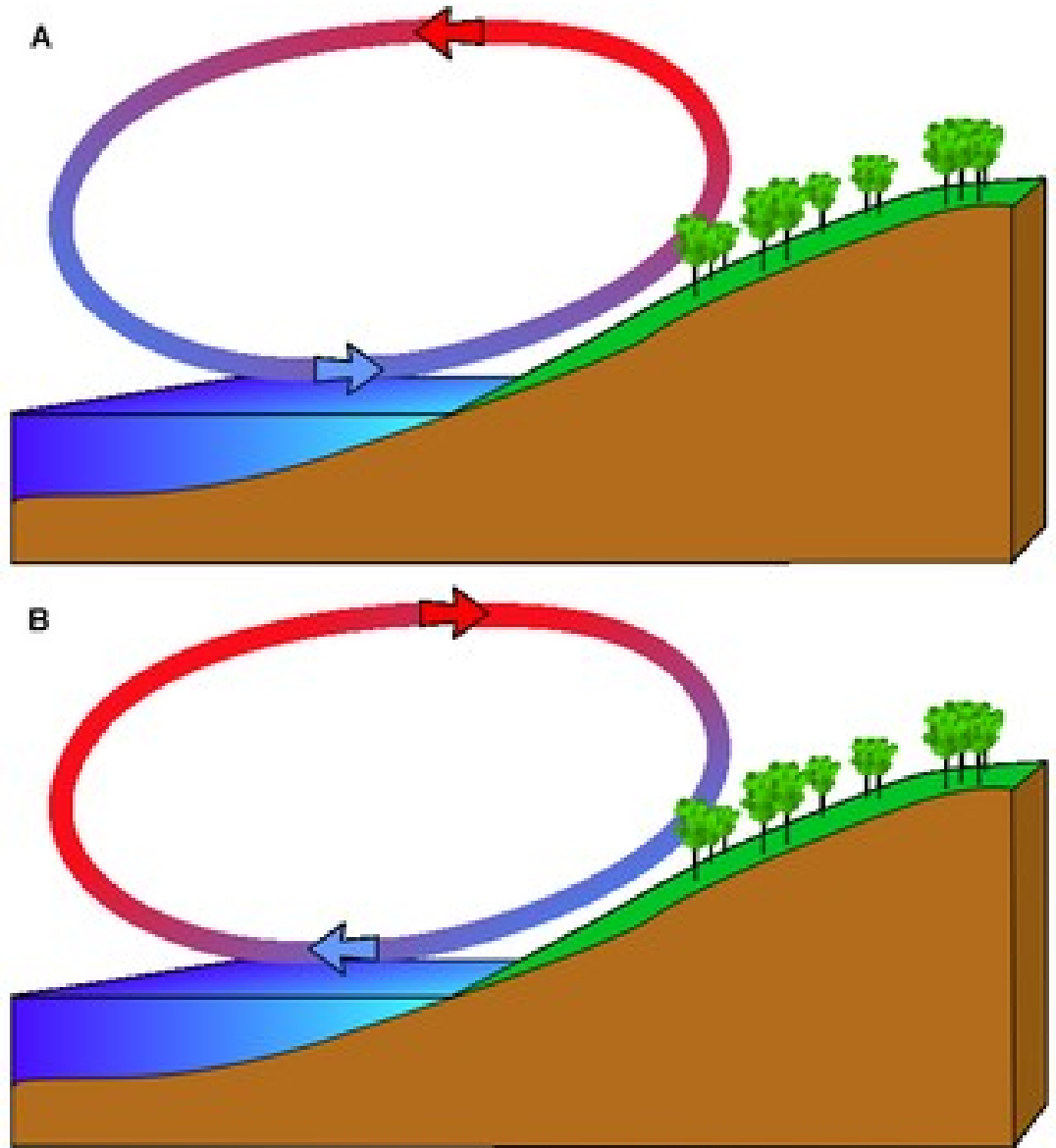


**Bjarni Herjólfsson set off for Greenland. His ship sailed into fog and barrier winds blowing from the NE to the southeast of Greenland. Bjarni turned too far to the south, missed Greenland and ended up in Wineland (America).**



**he first European settlements in N-America were a direct result of Bjarni Herjólfsson's lack of knowledge of mountain meteorology**

Wikipedia:



A: Sea breeze, B: Land breeze

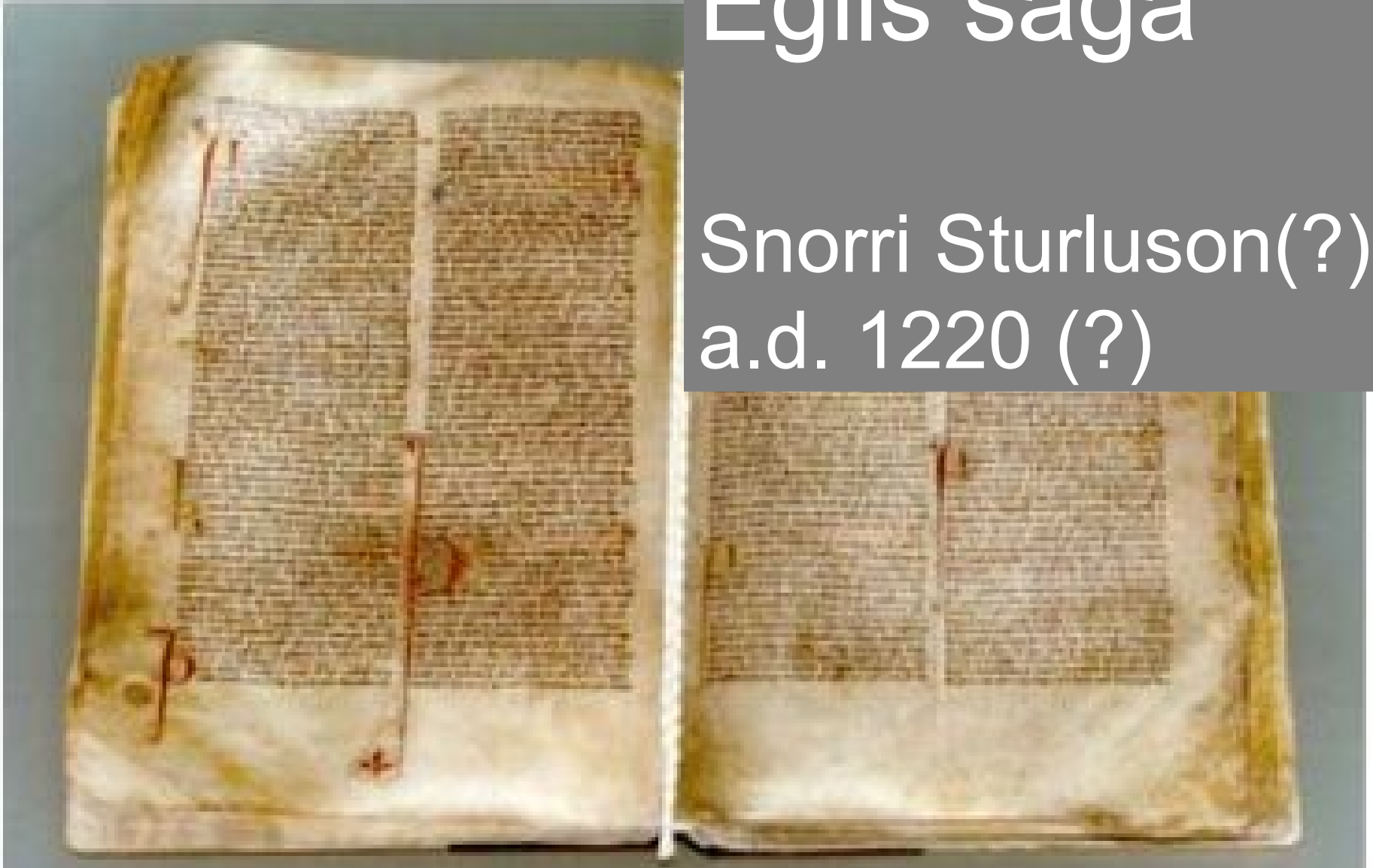
# Land breeze (Wikipedia)

## Land breezes

At night, the land cools off quicker than the ocean due to differences in their **specific heat** values, which forces the dying of the daytime sea breeze. If the land cools below that of the adjacent **sea surface temperature**, **the pressure over the water will be lower than that of the land, setting up a land breeze** as long as the environmental surface wind pattern is not strong enough to oppose it. If there is sufficient moisture and instability available, the land breeze can cause showers or even thunderstorms, over the water. Overnight thunderstorm development offshore can be a good predictor for the activity on land the following day, as long as there are no expected changes to the weather pattern over the following 12-24 hours. The land breeze will die once the land warms up again the next morning.

# Egils saga

Snorri Sturluson(?)  
a.d. 1220 (?)



# Egils saga Ch.56

Veður voru vindlítil, fjallvindur um nætur, en hafgola um daga. Eitt kveld sigldu þeir Egill út á haf, en fiskimenn reru þá inn til lands, þeir er til njósna höfðu settir verið um farar þeirra Egils. Kunnu þeir það að segja, að Egill hafði út látið og á haf siglt og hann var á brottu; létu þessa njósna koma til Berg-Önundar.

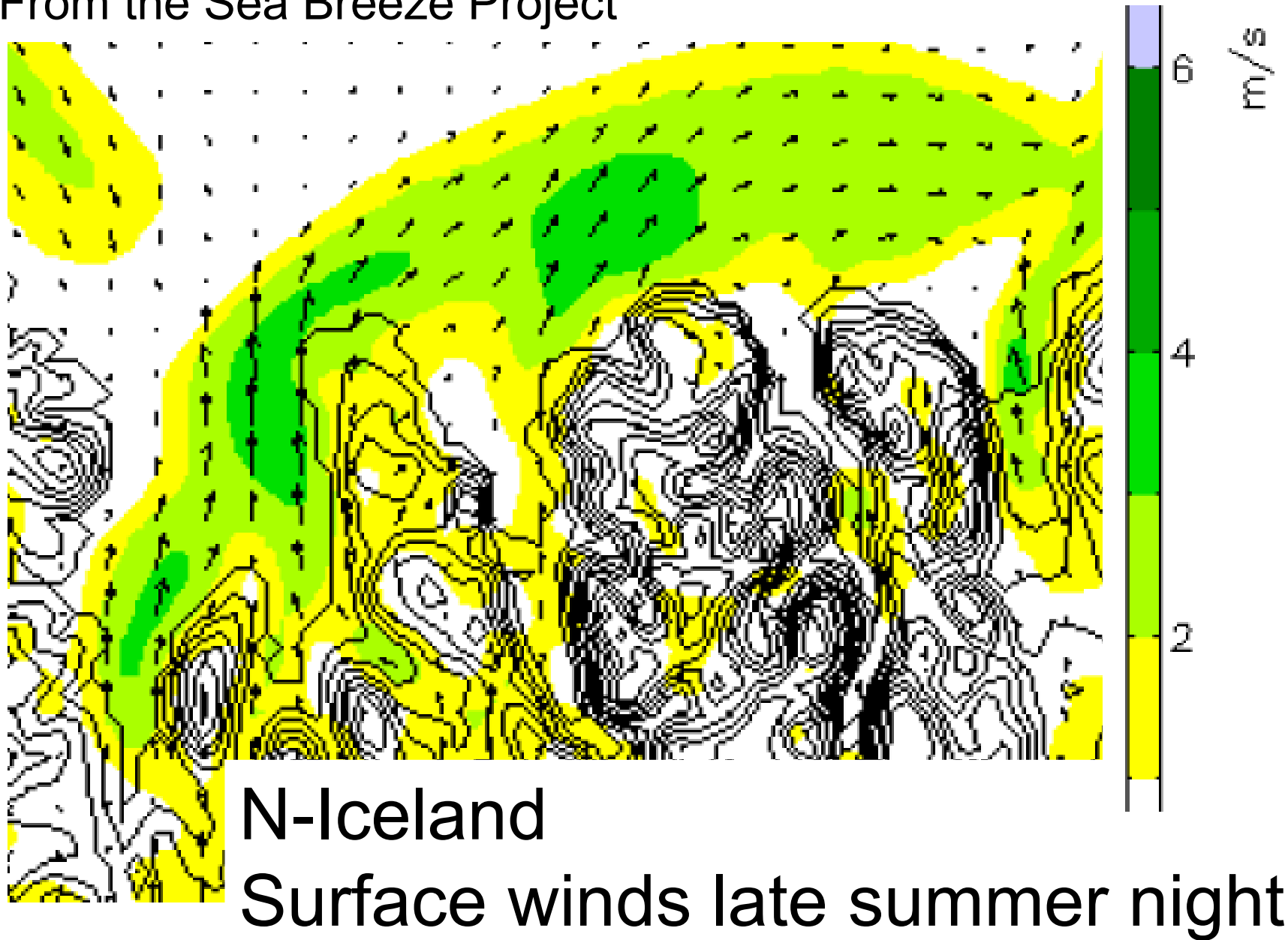
Og er hann vissi þessi tíðindi, hann sendi þá frá sér menn þá er hann hafði áður haft þar til varúðar. Reri hann þá inn til Álreksstaða og bauð Fróða til sín, því að Berg-Önundur átti öl mikið heima að sín; Fróði fór með honum og hafði með sér nokkura menn; tóku þeir þar veislu góða og höfðu gleði mikla; var þar þá allt óttalaust.

Rögnvaldur konungsson átti karfa einn, reru sex menn á borð; hann var steindur allur fyrir ofan sjó; hann hafði með sér menn tíu eða tólf, þá er honum fylgdu einart.

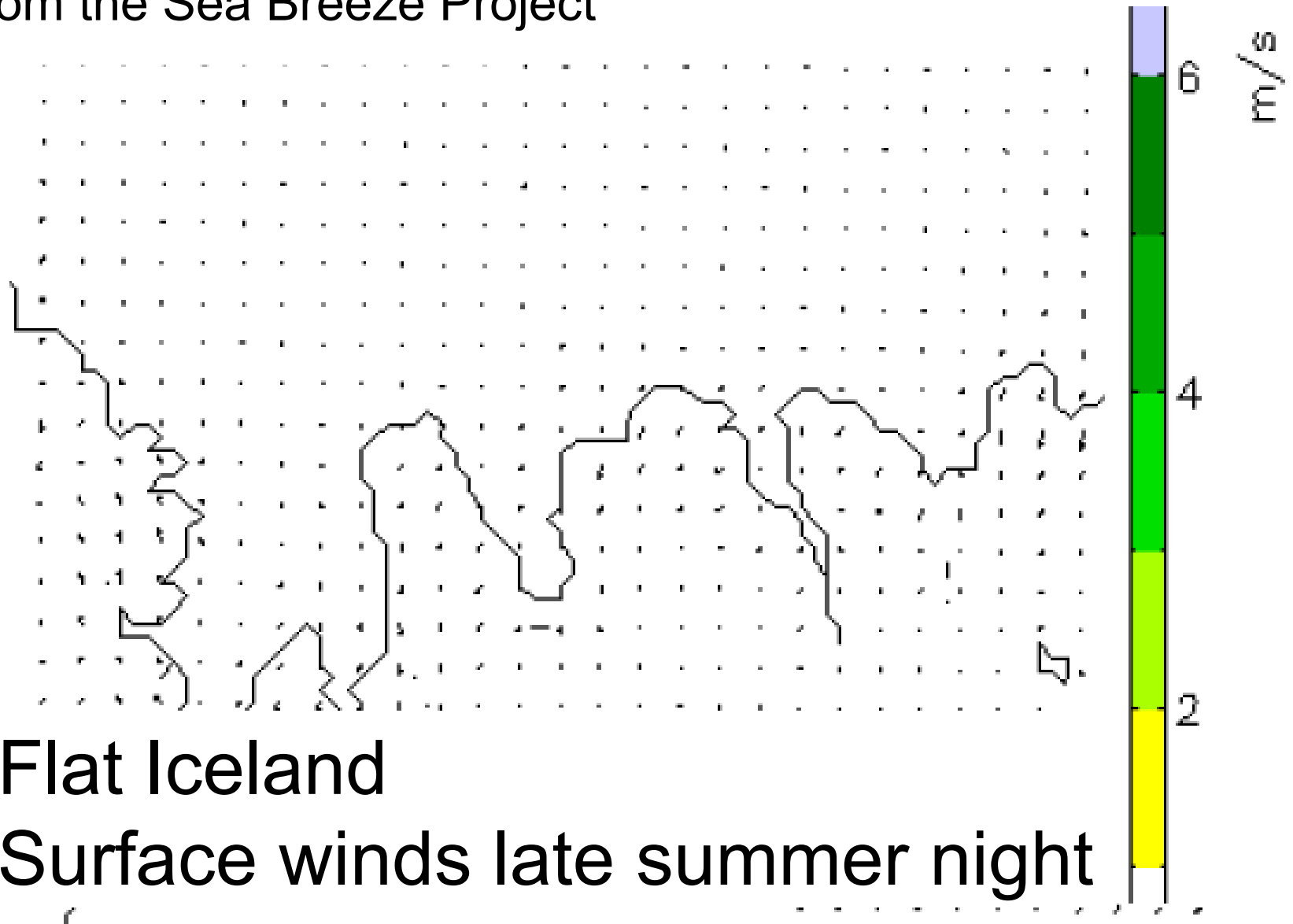
Og er Fróði var heiman farinn, þá tók Rögnvaldur karfann, og reru þeir út til Herðu tólf saman; þar var konungsbú mikið, og réð sá maður fyrir, er hét Skegg-Þórir; þar hafði Rögnvaldur verið á fóstri í barnæsku. Tók Þórir feginsamlega við konungssyni; skorti þar og eigi drykk mikinn.

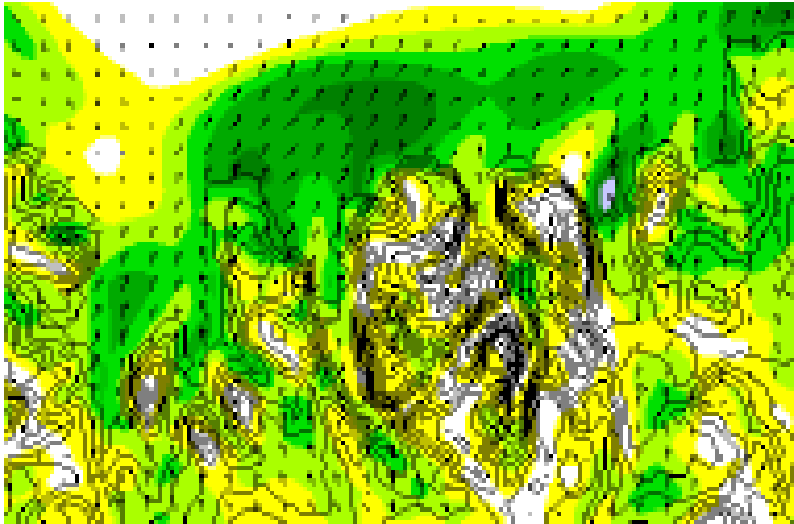


From the Sea Breeze Project



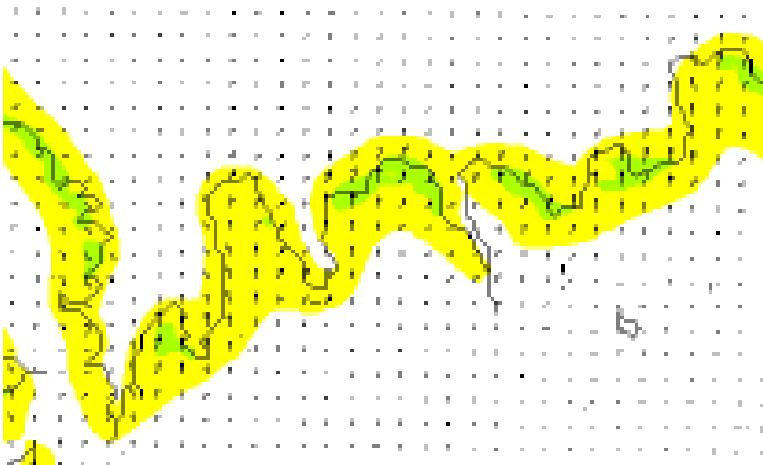
# From the Sea Breeze Project





"True" topography

Surface winds in December



Flat

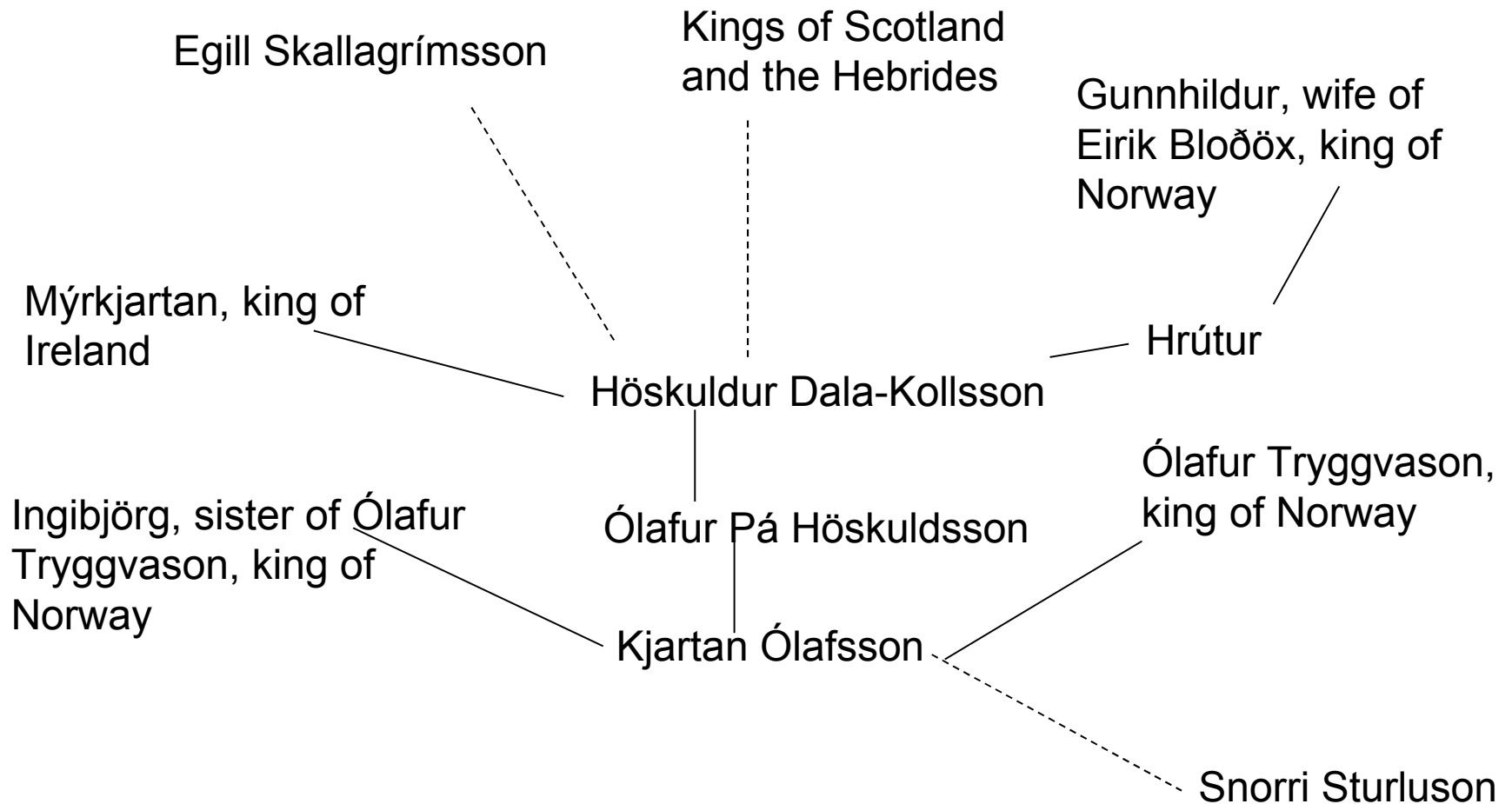
# Laxdæla saga

Ólafur Þórðarson (?)  
a.d. 1255 (?)





# The drowning of Þorsteinn Surtur – Höskuldur buys Hrappsstaðir farm



# Laxdæla Ch.18

Þorsteinn tók útsynning hvassan. Sigla þeir inn að straumum í þann straum er hét Kolkistustraumur. Sá er í mesta lagi þeirra strauma er á Breiðafirði eru. Þeim tekst siglingin ógreitt. Heldur það mest til þess að þá var komið útfall sjávar en byrinn ekki vinveittur því að **skúraveður var á og var hvasst veðrið þá er rauf en vindlítið þess í milli.** Þórarinn stýrði og hafði aktaumana um herðar sér því að þröngt var á skipinu.

Osk Torsteinsdotter og Hild Helgesdotter, som var berre 3 vintrar gamall. Dei fekk ein kvass sudvest og siglde etter straumom inn i Kolkistestraumen, ein av dei sterkaste straumom i Breidafjorden. Der vart det ugreidt med siglingi deira, av di at sjøen fall og vinden ikkje var god; for **det var skurver, kvast naar det reiv i, men mest stilt dessimillom.** Torarin styrde og hadde brasen um akslerne sine, av di det var trongt paa skipe

Thorstein's daughter, and Hild, her daughter, who was three years old, went with them too. Thorstein fell in with a high south-westerly gale, and they sailed up towards the roosts, and into that roost which is called Coal-chest-Roost, which is the biggest of the currents in Broadfirth. They made little way sailing, chiefly because the tide was ebbing, and the wind was not favourable, **the weather being squally, with high wind when the squalls broke over, but with little wind between whiles.**

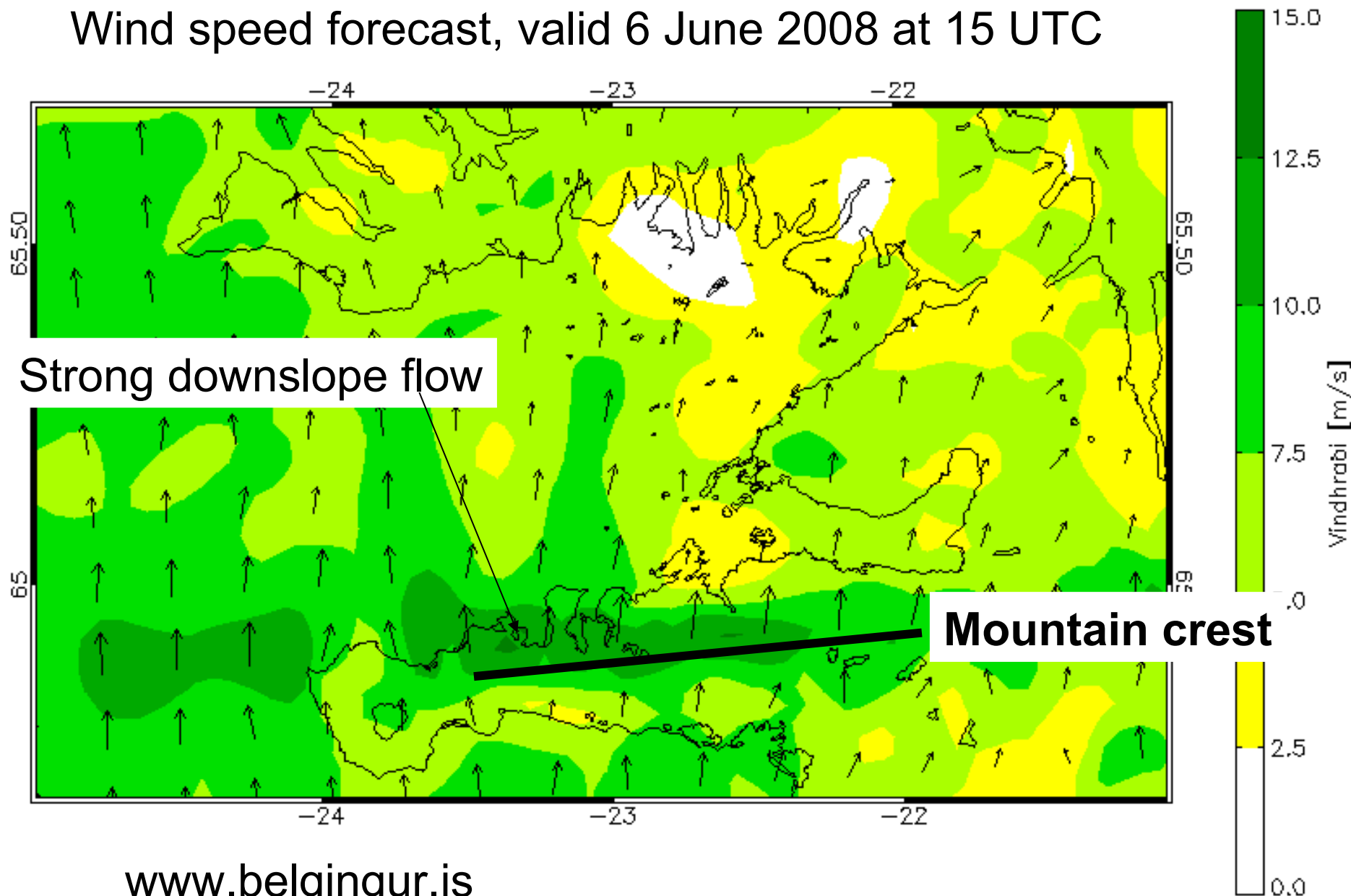
1880, English transl. Muriel A. C. Press,



the ebbing of the sea, but the breeze was not friendly to them; for the **weather was showery and the wind was strong when it grew clear, but blew little between-whiles.**

1903, English v.2 transl. Robert Proctor

# Wind speed forecast, valid 6 June 2008 at 15 UTC



[www.belgingur.is](http://www.belgingur.is)

Gildir föstudaginn 06.06.08 kl. 15:00 ( 05.06.08 kl. 12:00 +27 klst. )



MS Edda sank in a downslope windstorm at the South Coast of Breidafjörður in 1953



These men knew  
about  
katabatic winds,  
sea breeze,  
downslope  
windstorms –  
and the  
Bergen School  
Cyclone Model

# Egils saga (1893, English transl. W. C. Green )

The weather was calm, a fell-wind blew by night, a sea breeze by day. One evening Egil sailed out to sea, but the fishermen were then rowing in to land, those, to wit, who had been set as spies on Egil's movements. They had this to tell, that Egil had put out and sailed to sea, and was gone. This news they carried to Bergonund. And when he knew these tidings, then he sent away all those men that he had had before for protection. Thereafter he rowed in to Alrekstead, and bade Frodi to his house, for he had a great ale-drinking there. Frodi went with him, taking some men. They were feasted well there, and they made merry, with no fear of danger. Rognvald, the king's son, had a pinnace, rowed by six men on either side, painted all above the sea line. He had with him ten or twelve who constantly followed him; and when Frodi had left home, then Rognvald took the pinnace and they rowed out to Herdla twelve in number. A large farm of the king's was there, whereof the manager was named Skegg-Thorir. Rognvald in his childhood had been fostered there. Thorir received the king's son joyfully. There too was no lack of drink.









