

National Park Explorer



Birkir



Guðjón



Hlynur



Gagarín



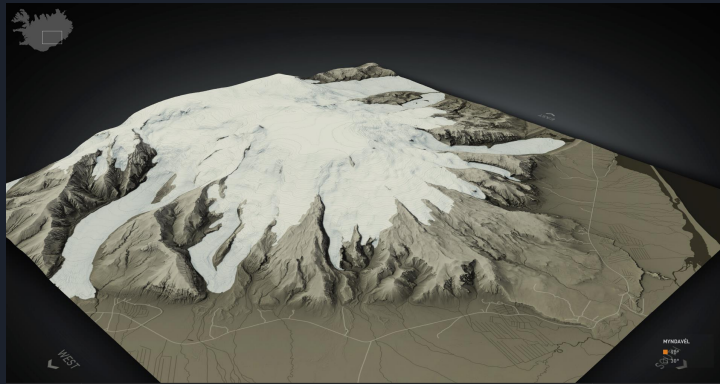
Fyrirtækið

- Stofnað árið **1994**
- Býr til hágæða gagnvirkar upplifanir
- Fyrir **söfn**, **sýningar**, þjóðgarða o.fl

Starfsfólkið

- Tæplega **20** starfsmenn
- Listamenn, forritarar, hönnuðir, framleiðendur, o.fl.





Vatnajökulsþjóðgarður / Skafafell

WORLD



Jotunheimen National Park

WORLD



Vatnajökulsþjóðgarður / Lakagígar

WORLD



Verkefnið

Markmið

- Hanna og smíða **endurnýtanlega lausn**
 - Auðveldar þróun á nýjum **korta-upplifunum** fyrir þjóðgarða og náttúruperlur.
- Smíða gagnvirka korta-upplifun fyrir **Vatnajökulsþjóðgarð**.



Notendahópar

Safngestir

- Geta skoðað og notað kortin



Forritarar / Hönnuðir

- Nota tólið til að skapa nýjar korta-upplifanir



Virkni kröfur

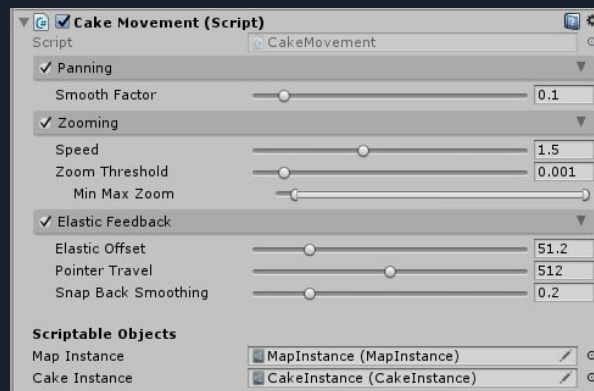
Safngestir

- Kortið skal styðja **snertistýringu** (Snúningur, hliðrun og þýsjun)
- Hægt að sjá **meiri upplýsingar** um ákveðna staði
- Sjá mörk þjóðgarða



Forritarar / Hönnuðir

- **Tól** til að búa til korta-upplifanir i Unity
- Tólið skal vera mjög **notendavænt**
- Ekki bara fyrir forritara, líka hönnuði



Tólin

Þróunarumhverfið

- **Unity** leikjavélin
- Forritunarmálin **C# / Python**
- **Git** og **GitHub** fyrir samstæðustjórnun



Verkefnastjórnun - Scrum

Af hverju Scrum

- Stórt verkefni, þarfnast skipulags
- Gagarín notar Scrum
- Þekkjum hugmyndafræðina



Hvað var gott við Scrum?

- Stuttir sprettir
- Daily standups
- Retrospectives





Notendasögur

Snið notendasagna

Sem **<notandi>** get ég **<aðgerð>** til þess að **<niðurstaða>**

Dæmi um notendasögur

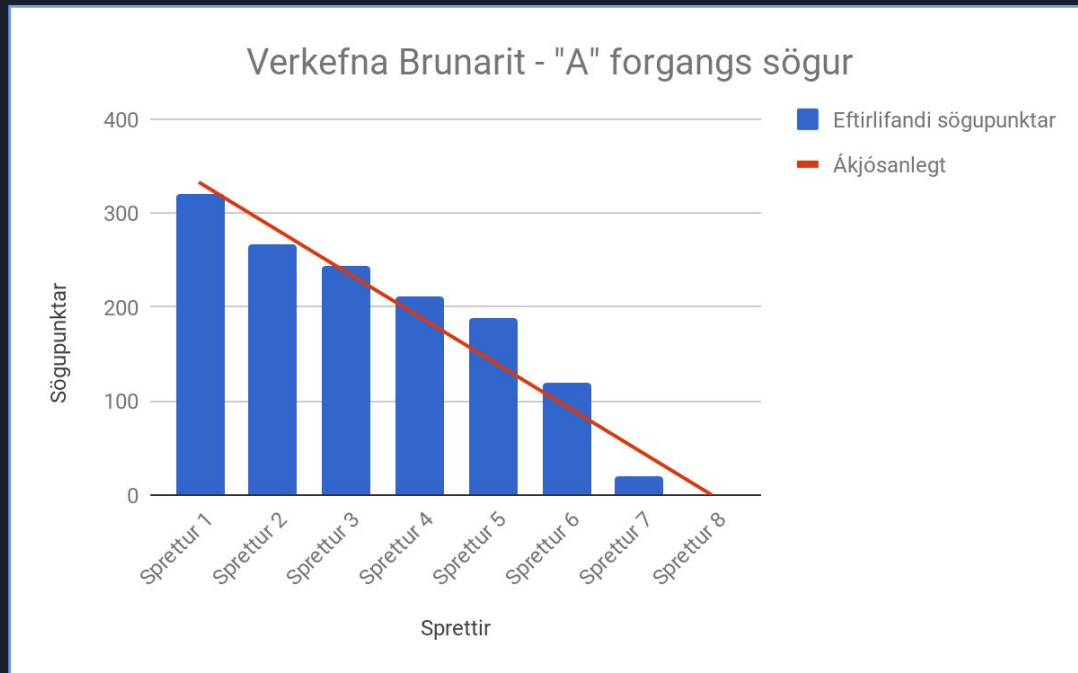
- Sem **hönnuður** get ég auðveldlega bætt snúnings virkni á kortakökuna til þess að sýningargestir geti snúið kortinu.
- Sem **sýningargestur** get ég dregið kortið til þess að geta séð aðra hluti á kortinu



Sögufjöldi

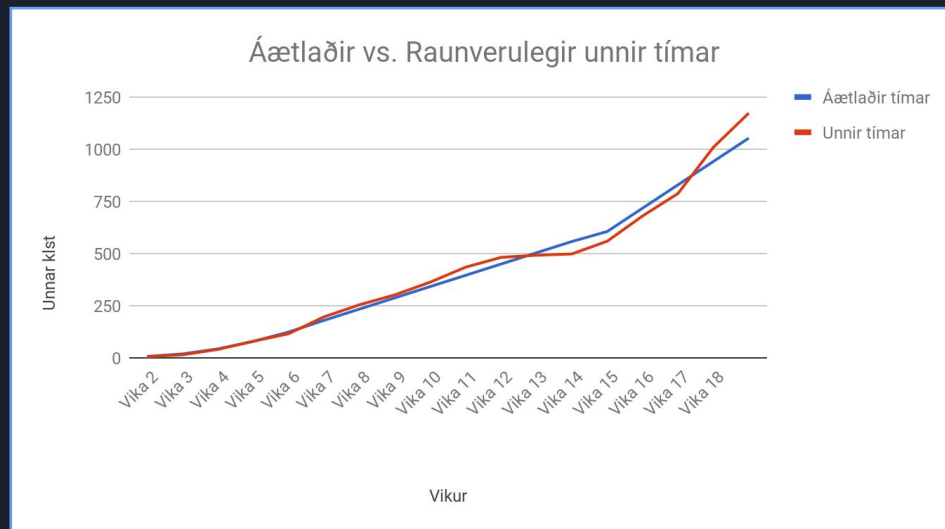
Forgangur	Sögufjöldi	Fjöldi klárað	%
A forgangur	24	24	100%
B forgangur	7	2	29%
C forgangur	5	1	20%
Samtals	36	27	75%

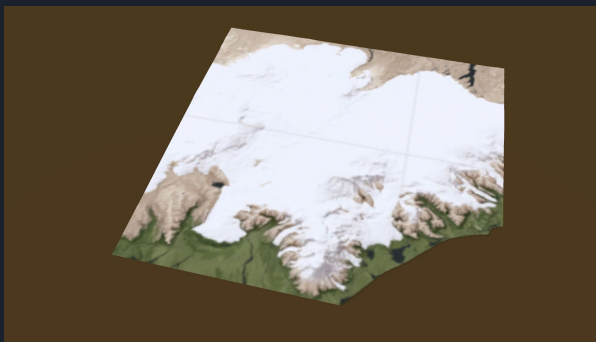
Sprett framvinda



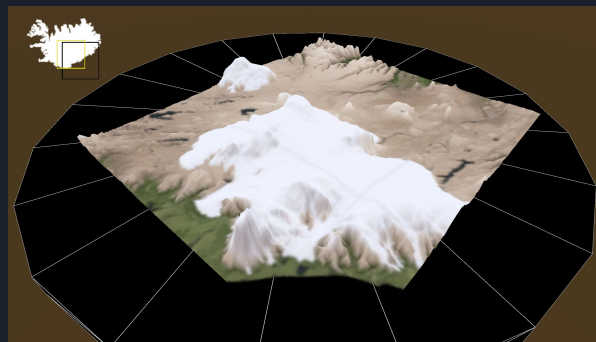
Unnir tímar

Nafn	Áætlað	Raun	%
Birkir	347	361	104%
Guðjón	353	402	114%
Hlynur	353	403	114%
Samtals	1.053	1.166	111%

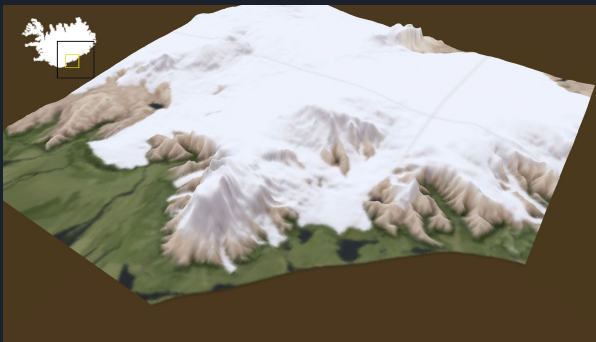




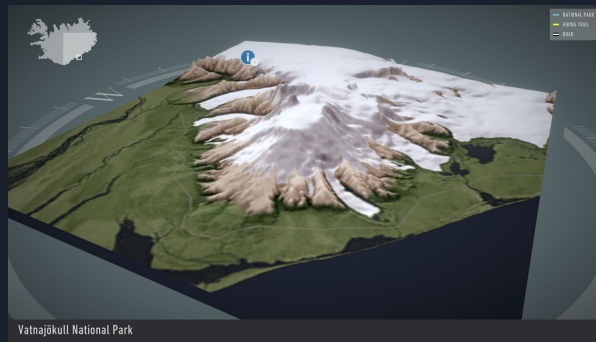
v0.1.0



v0.3.0



v0.5.0

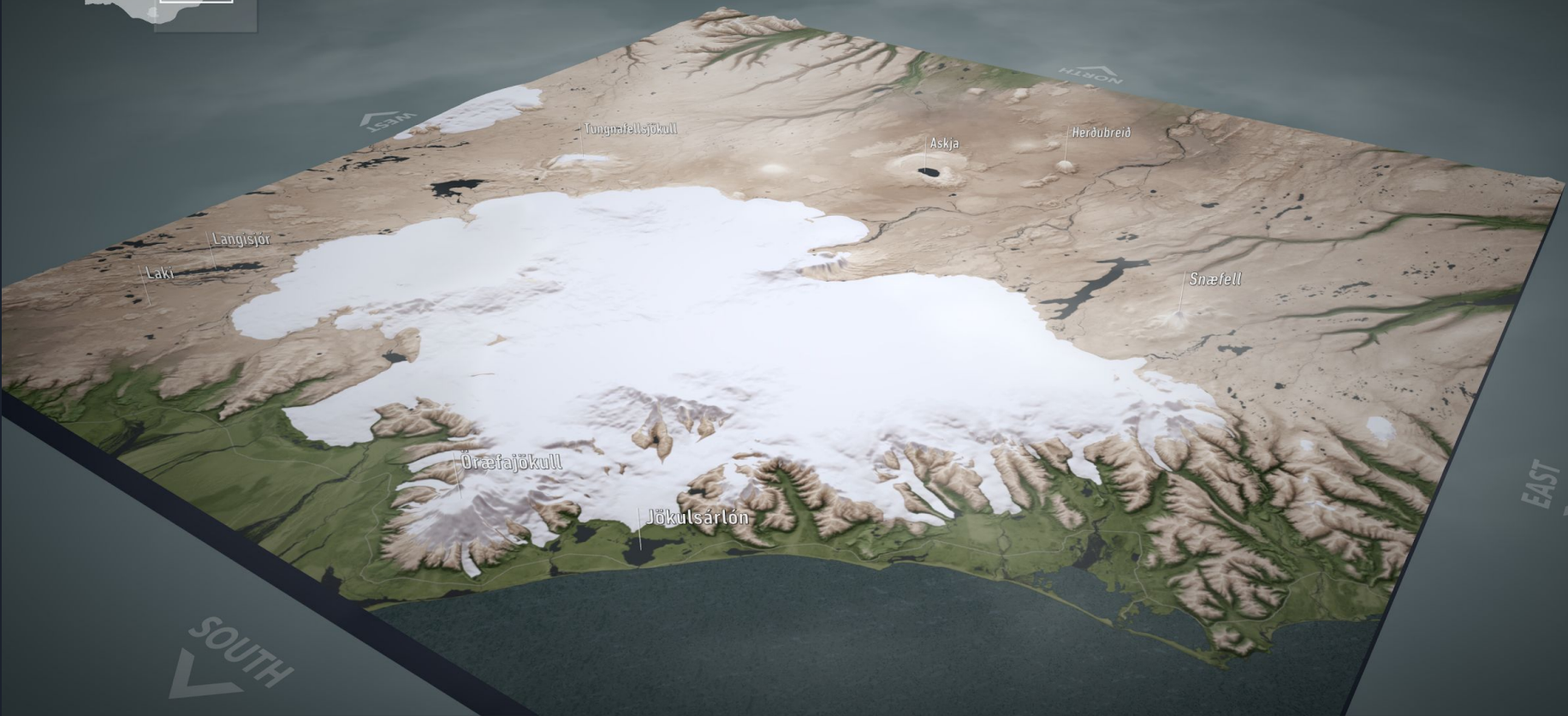


v0.6.0



326°
NW N

- NATIONAL PARK
- HIKING TRAIL
- ROAD



Vatnajökull National Park



MINIMAP



Minimap indicates in a wider view what part of the map the user is looking at.

UI NAVIGATION



User interface

MARKERS



Point on map with information of interest and picture.

MAP TEXTURES



Diffuse map
Height texture map

MAP CAKE



Touch interactable 3D map,
main component

CAMERA



Main camera
Cinemachine transitions
Texture cameras

COORDINATE DATA



Points, lines and polygonal coordinate input data.

OVERLAYING OBJECTS



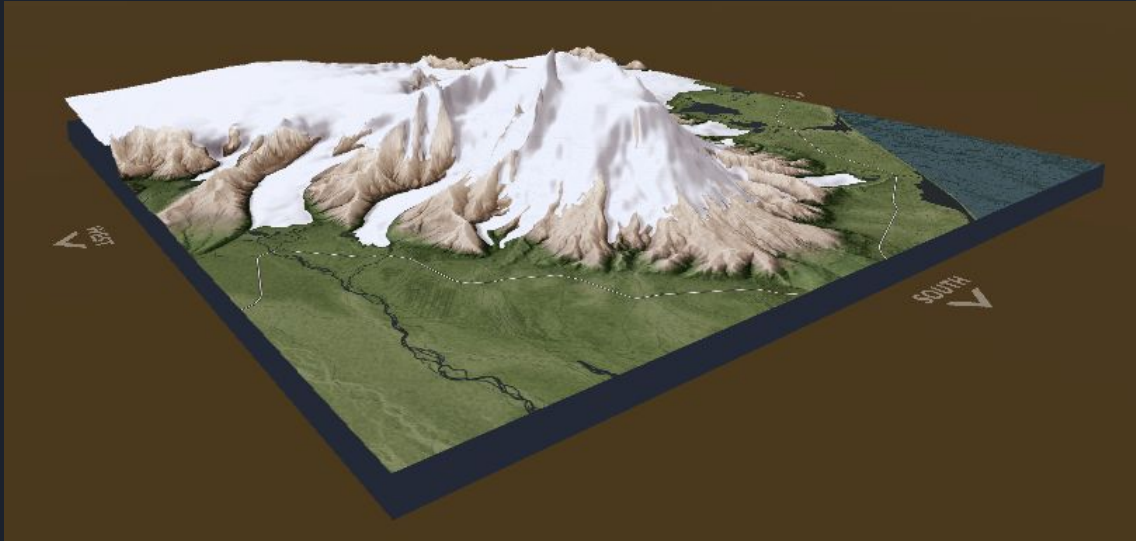
Roads, trails, 3d objects and other things on top of the map.

LEGEND



Legend, helpful to indicate the different things on the map.

Þrívíddar korta-kaka



MAP CAKE



Touch interactable 3D map,
main component

Smákort



MINIMAP

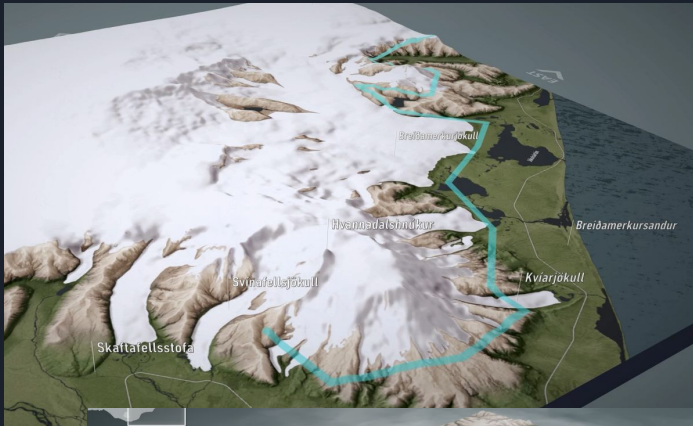


Minimap indicates in a wider view what part of the map the user is looking at.

Skýringartexti



Hlutir á/yfir korti

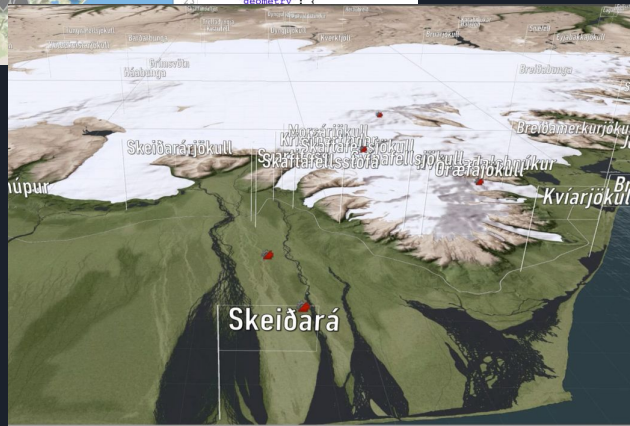
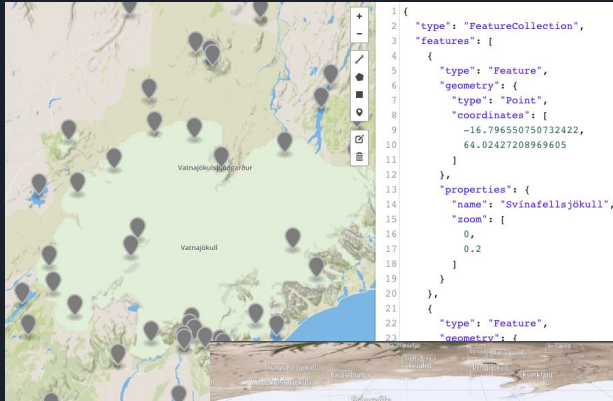


OVERLAYING OBJECTS



Roads, trails, 3d objects
and other things on top of
the map.

Hnitsett gögn

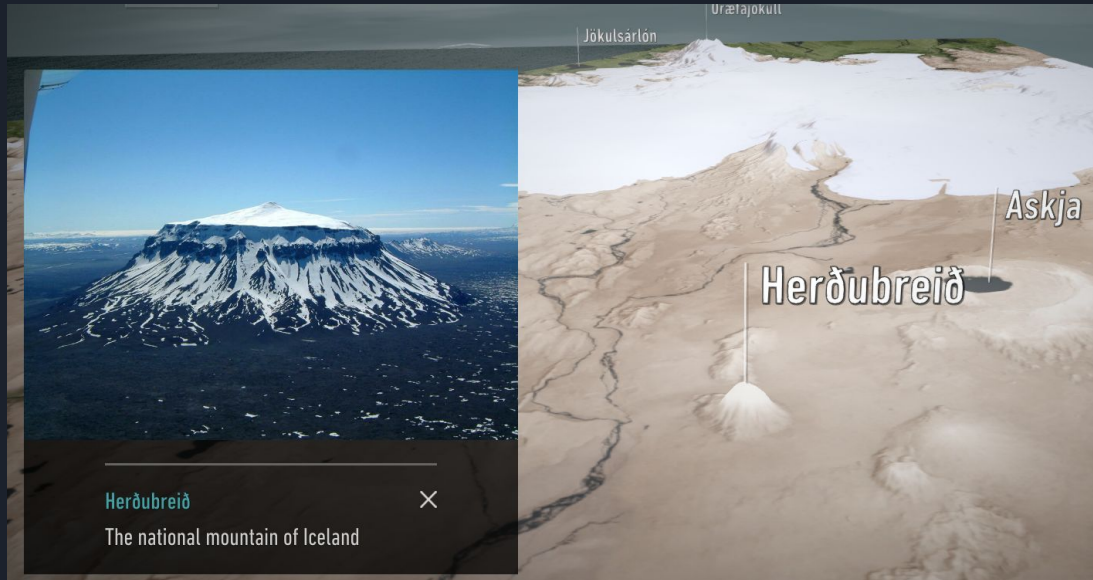


COORDINATE DATA



Points, lines and
polygonal coordinate
input data.

Merkingar

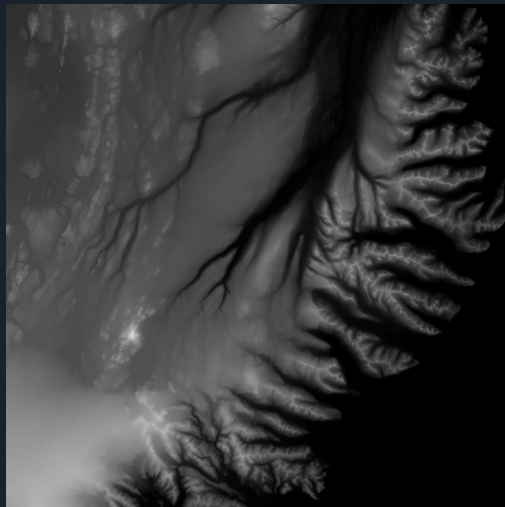


MARKERS



Point on map with
information of interest
and picture.

Kortaáferð



MAP TEXTURES



Diffuse map
Height texture map

KORT - HÆÐARGÖGN

Hæðargögn frá Landmælingum Íslands

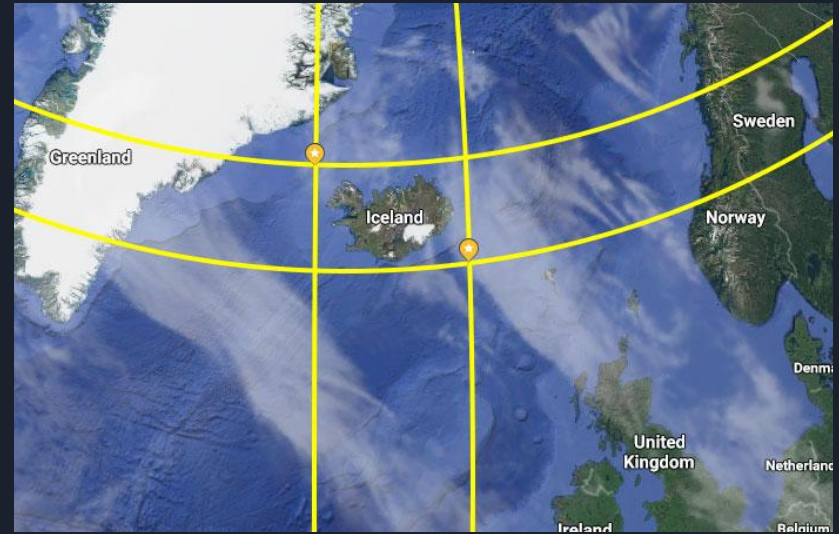
ISN 1993 - Lambert Conformal Conic

20 metra nákvæmni (20 m / pixel)

~ 600 x 400 km

~ 30.000 x 20.000 px = 600 MegaPixlar

Hæðargögn geymd sem 16 bita "litagildi"



```
Texture shading image data generator - version 1.3.1, built Nov 24 2013
Reading input files...
Processing 7353 column x 7353 row array using contrast value of 2.000000...
Writing output files...
DONE.
```

```
GDAL_WARP, creating dem slice: (2, 0)
GDALDEM, creating hillshade: (2, 0)
GDALDEM, creating color-relief: (2, 0)
GDAL_TRANSLATE, pre-process island: (2, 0)
Input file size is 7353, 7353
0...10...20...30...40...50...60...70...80...90...100 - done.
```

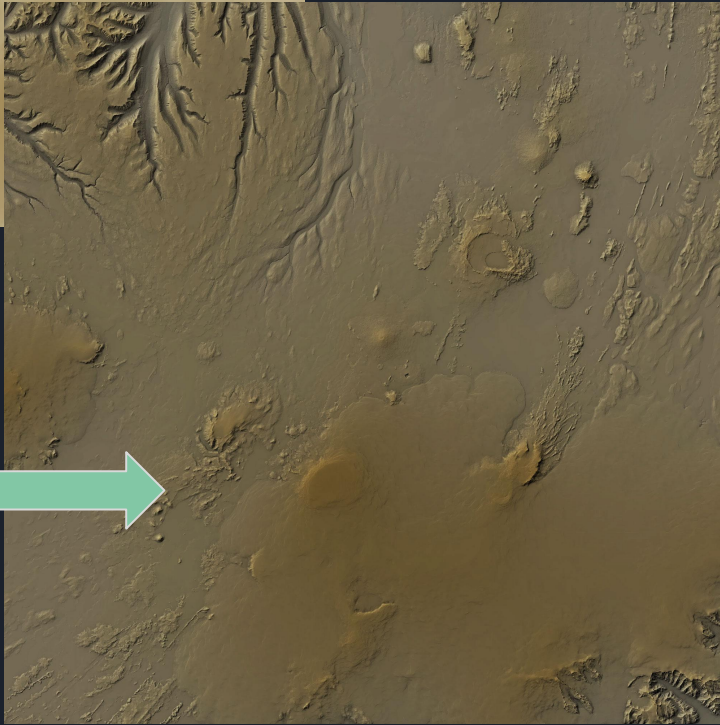
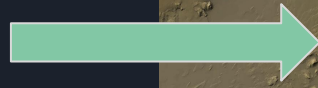
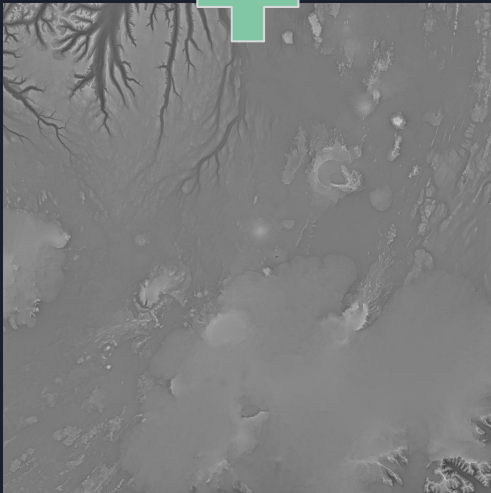
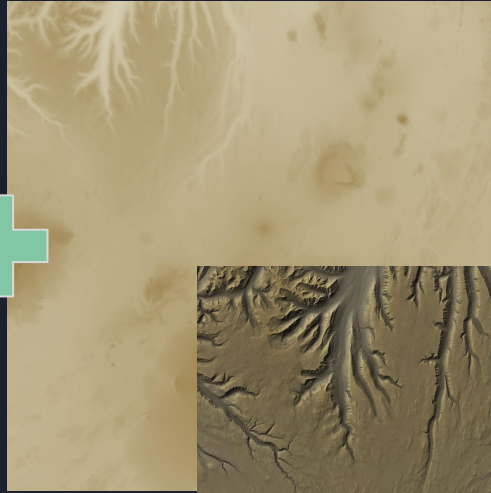
```
TEXTURE_1, island_process: (2, 0)
```

```
Terrain texture shading program - version 1.3.1, built Nov 24 2013
Reading input files...
*** WARNING: Input .flt file contains void (NODATA) points.
*** Assuming these are ocean points - setting these elevations to 0.

Input data appears to be projected into linear coordinates (easting/northing).
Assuming pixel aspect ratio of 1.000.
Processing 7353 column x 7353 row array using detail = 0.600070...
Processing phase 1...
Processing phase 2...
Processing phase 3...
Processing phase 4...
Processing phase 5...
Processing phase 6...
Processing phase 7...
Writing output files...
DONE.
```

```
TEXTURE_IMAGE, island_process: (2, 0)
```

```
Texture shading image data generator - version 1.3.1, built Nov 24 2013
Reading input files...
Processing 7353 column x 7353 row array using contrast value of 2.000000...
█
```



Hlíðaskyggning - Hillshade
Hæðarskyggning - Leland Brown
Litakort - Color relief
Þekjur - (jöklar, vötn, ár)



Kerfið í notkun



Hliðrun korts







Snúa korti





Þysjun







Smákort



Yatsojokul National Park



Merkingar á korti











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— NATIONAL PARK
— 1000 METER
— ROAD



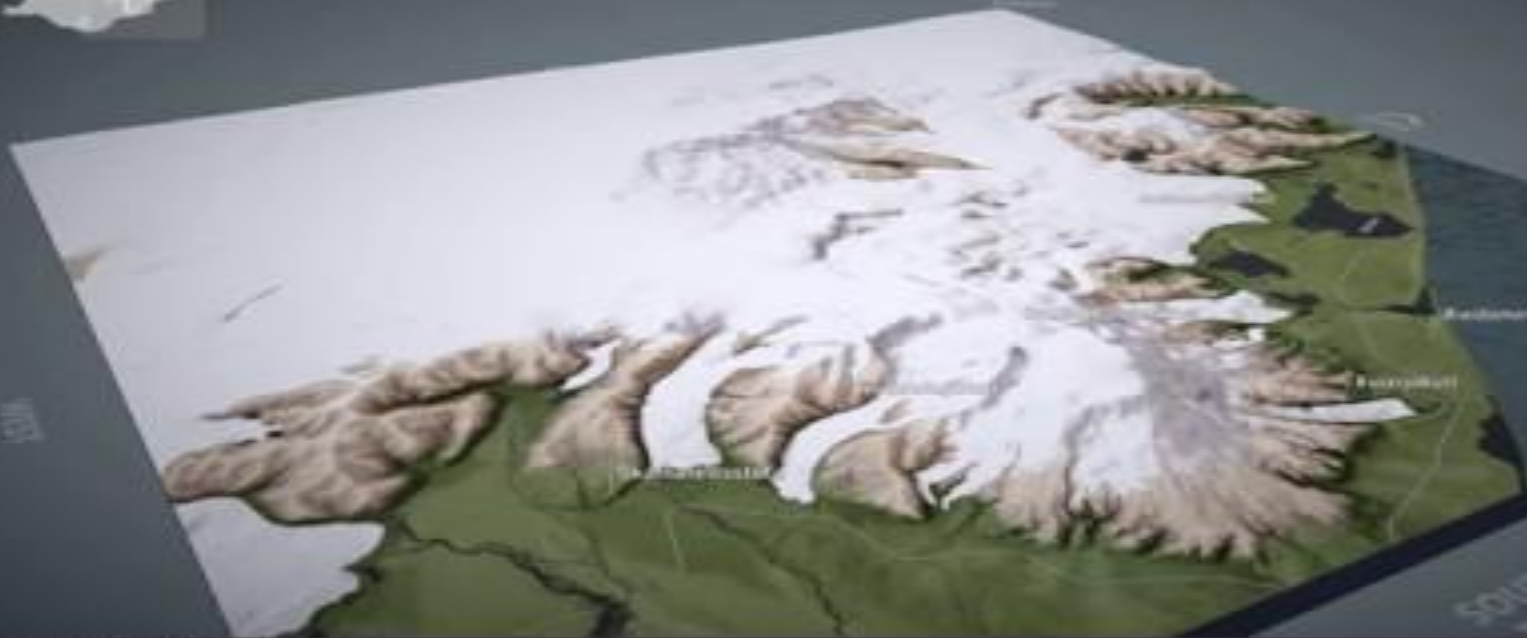
Vatnajökull National Park



Vatnajökull National Park

- NATIONAL PARK
- WORLD TRAIL
- ROAD

WEST



SOUTH

Vatnajökull National Park

Notendaprófanir

- 14 þátttakendur
 - 3 Konur
 - 11 Karlar
- Starfsmenn Gagarín
 - Tæknimenntað fólk
- Starfsmenn Tvíhorf
 - Arkitektar



Notendaprófanir - Framkvæmd

- Framkvæmdar í Gagarín
- 4 lítil verkefni
 - *Finndu og miðjaðu Öskju á kortinu*
 - *Horfðu á Öskju úr suðri, 180°*
 - *Finndu ítarupplýsingar um Herðubreið*
 - *Finndu Vatnajökul án þess að snerta kortið sjálft*



Notendaprófanir - Niðurstöður

- Notendur vildu:
 - Smella á **höfuðáttir**
 - Smella á **áttavita**
 - **Smella** á kort til að **hliðra**
 - Sjá **kennileiti** á smákorti



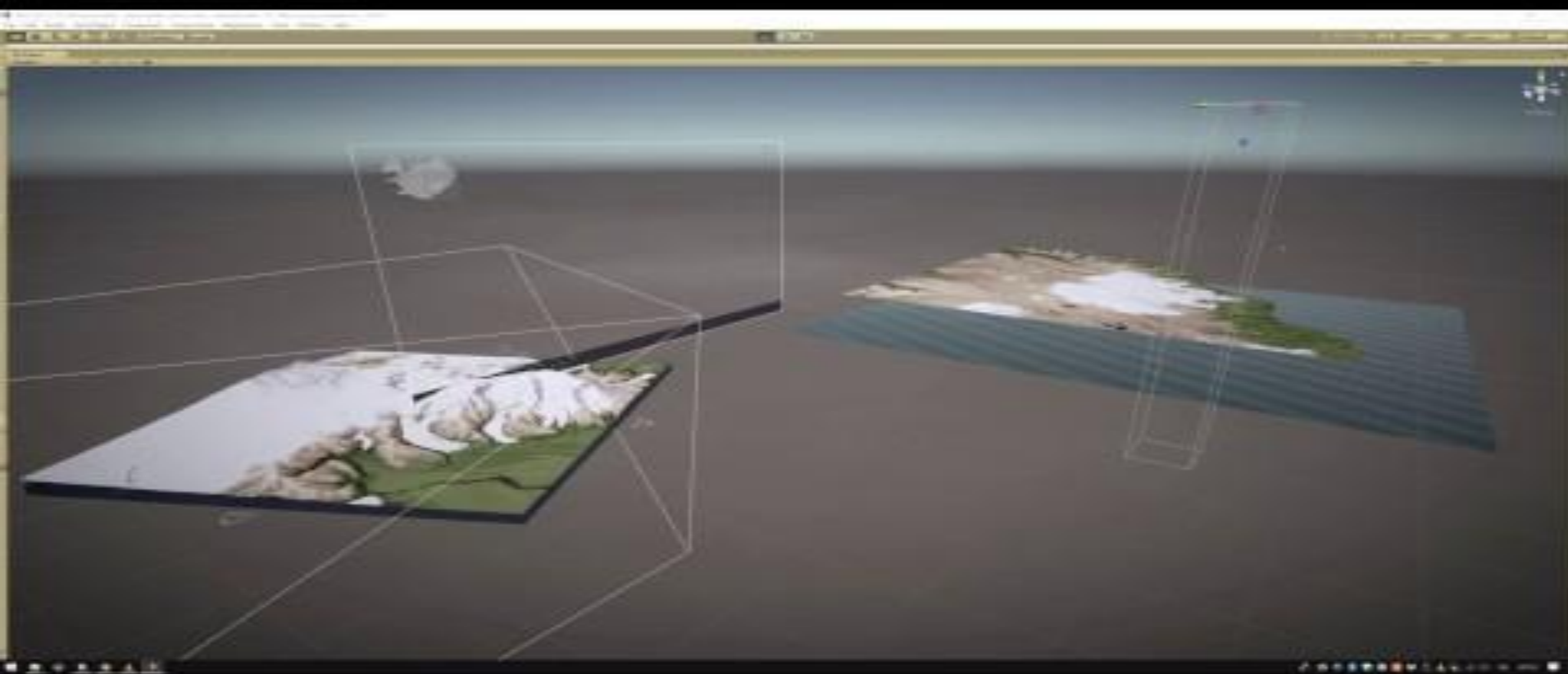






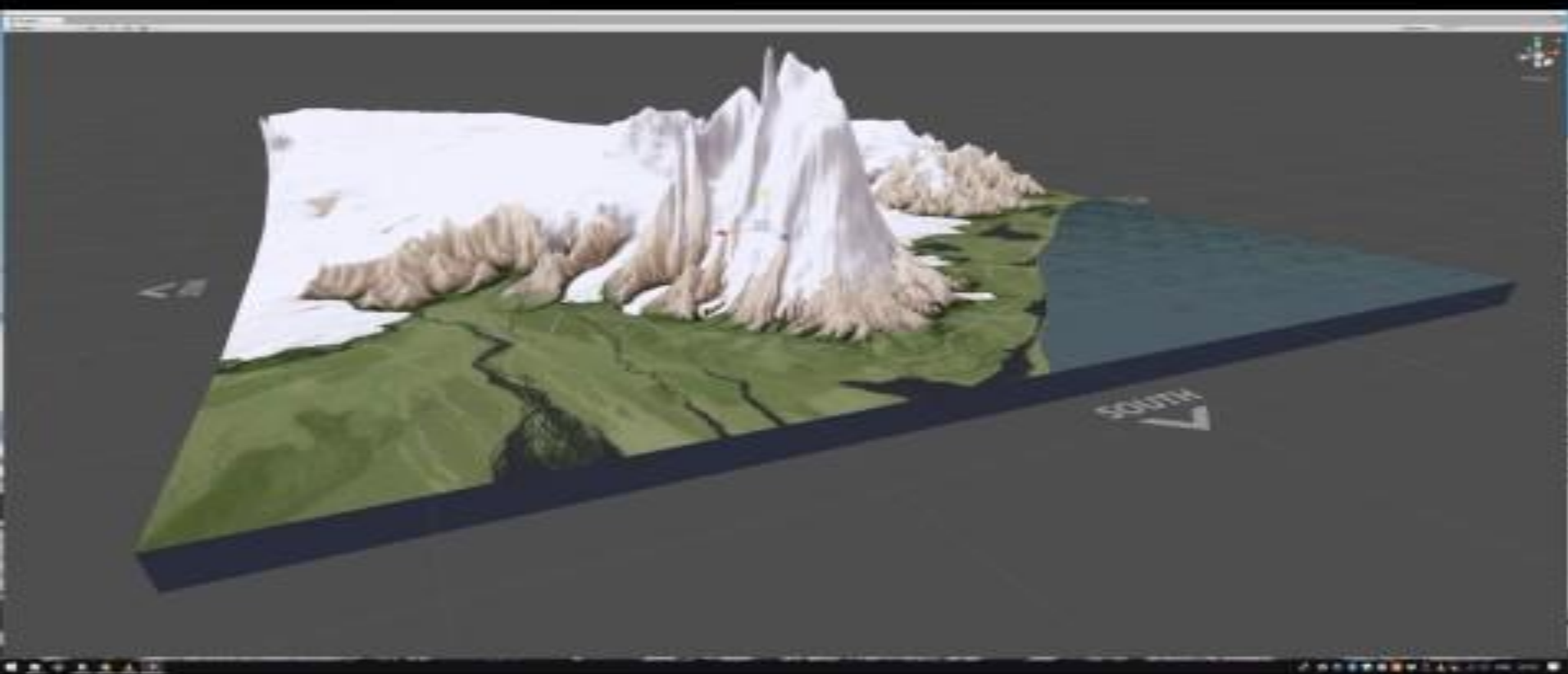


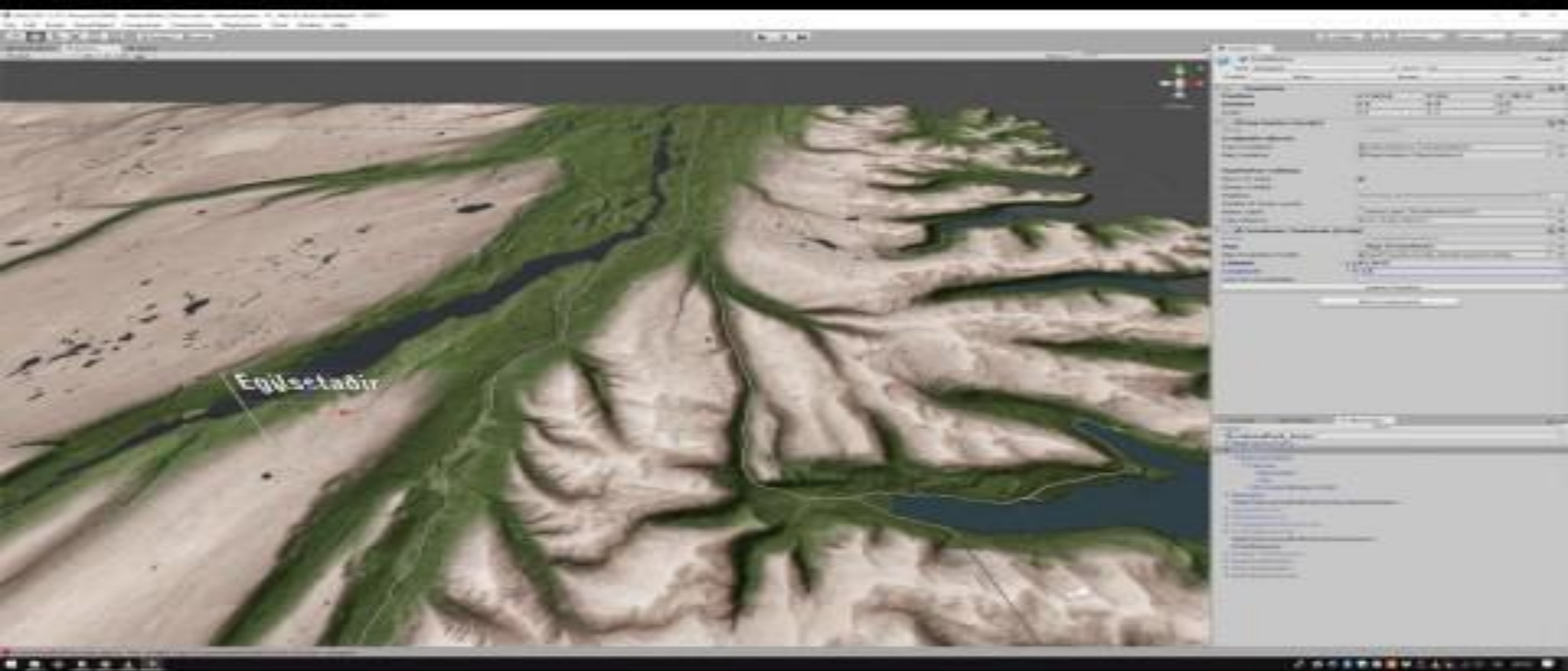
Unity



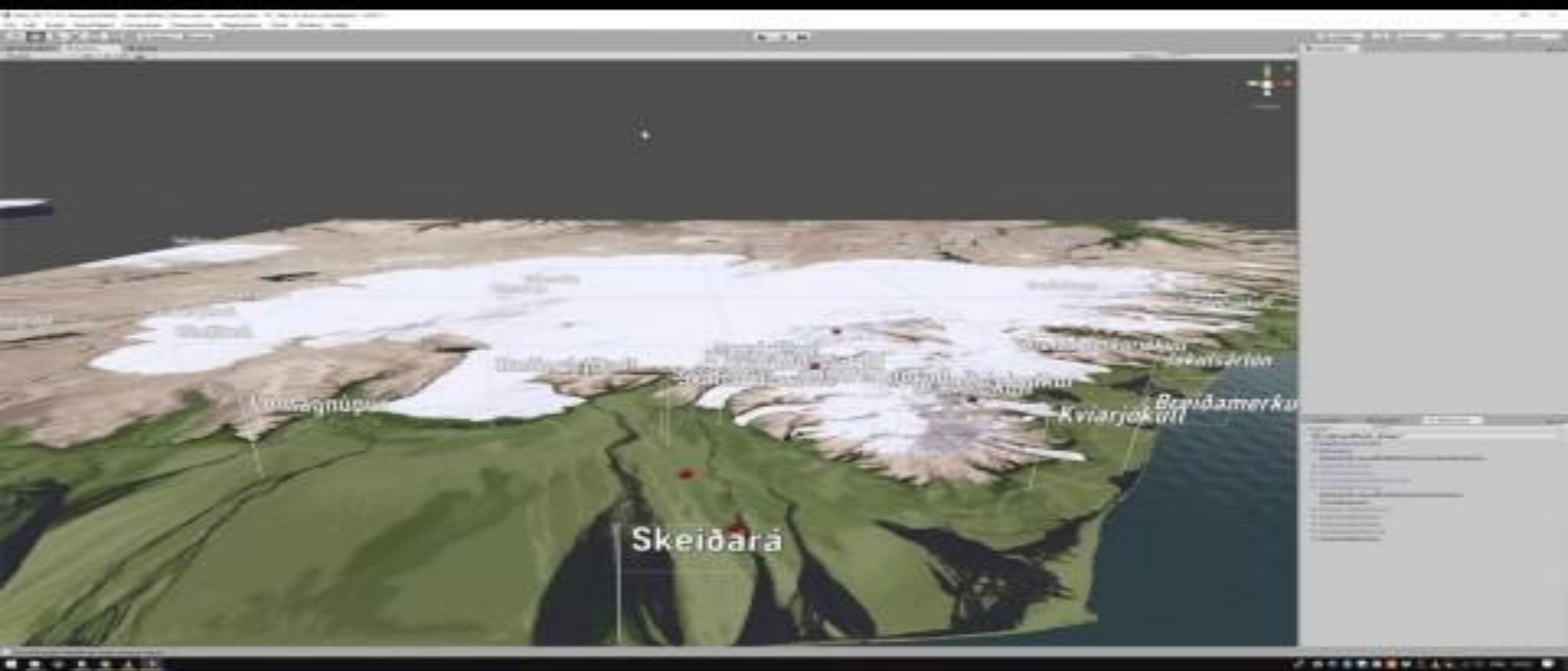








Eğüsetađir



Lindárhúsi

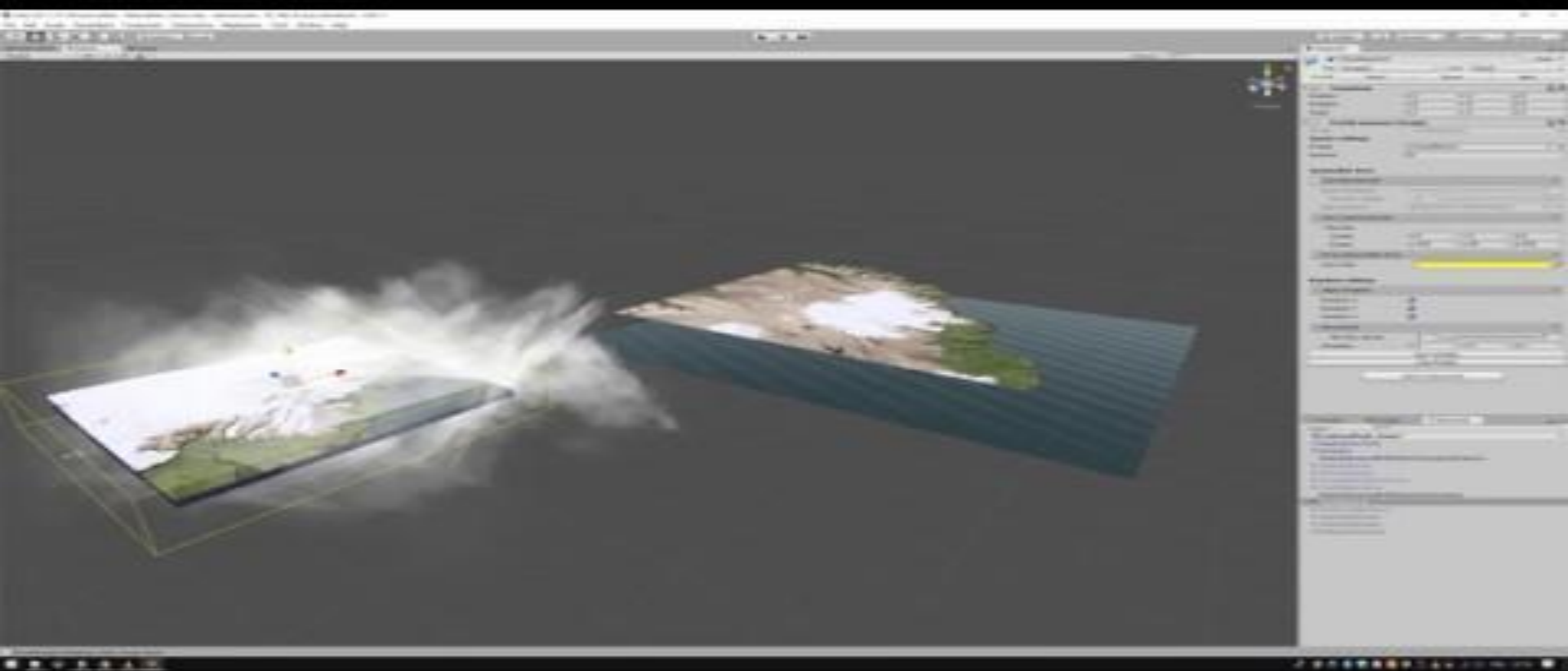
Skeiðará

Kvjarjökull

Beldamerku

Kortun

- 1. Skeiðará
- 2. Lindárhúsi
- 3. Kvjarjökull
- 4. Beldamerku
- 5. ...



Framtíðarsýn

- **Betri hliðar** á kortakökuna (rauntímareiknaðar)
- **Teygjanleg viðbrögð** í korti þegar þysjað er að og frá
- **Miðlæg þjónusta** til að halda utan um og búa til efni í sýningar (CMS)





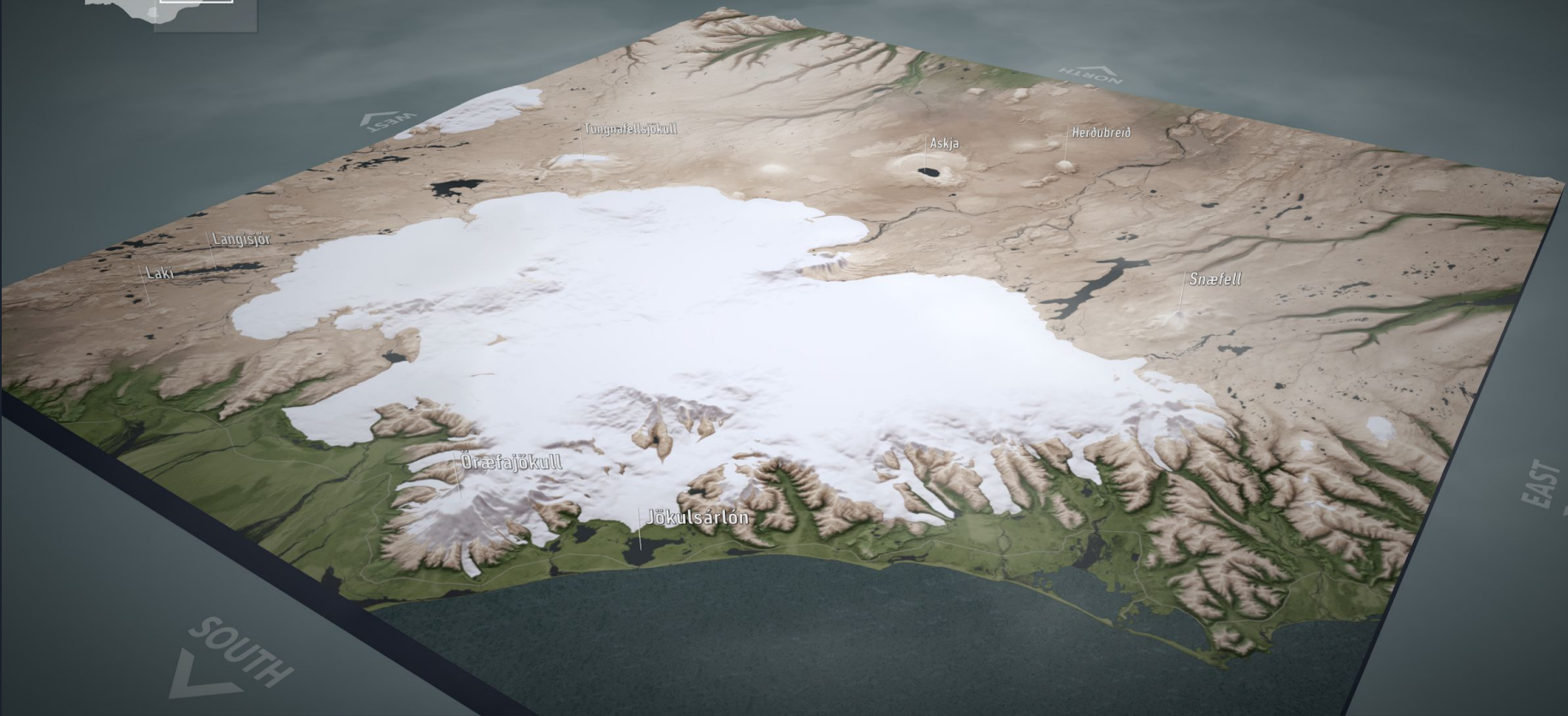
Takk fyrir!

Birkir, Guðjón & Hlynur



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Vatnajökull National Park