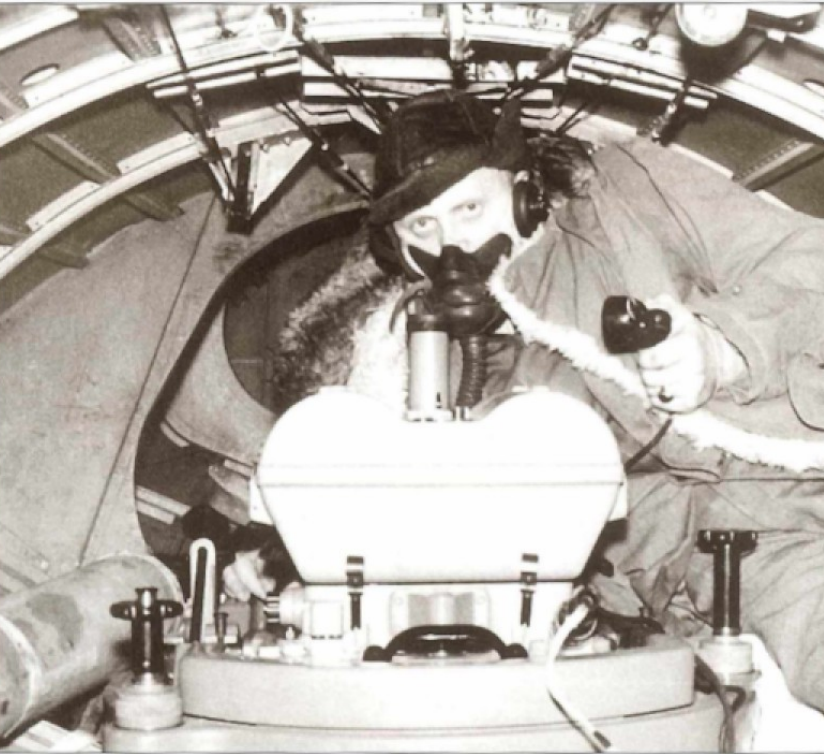


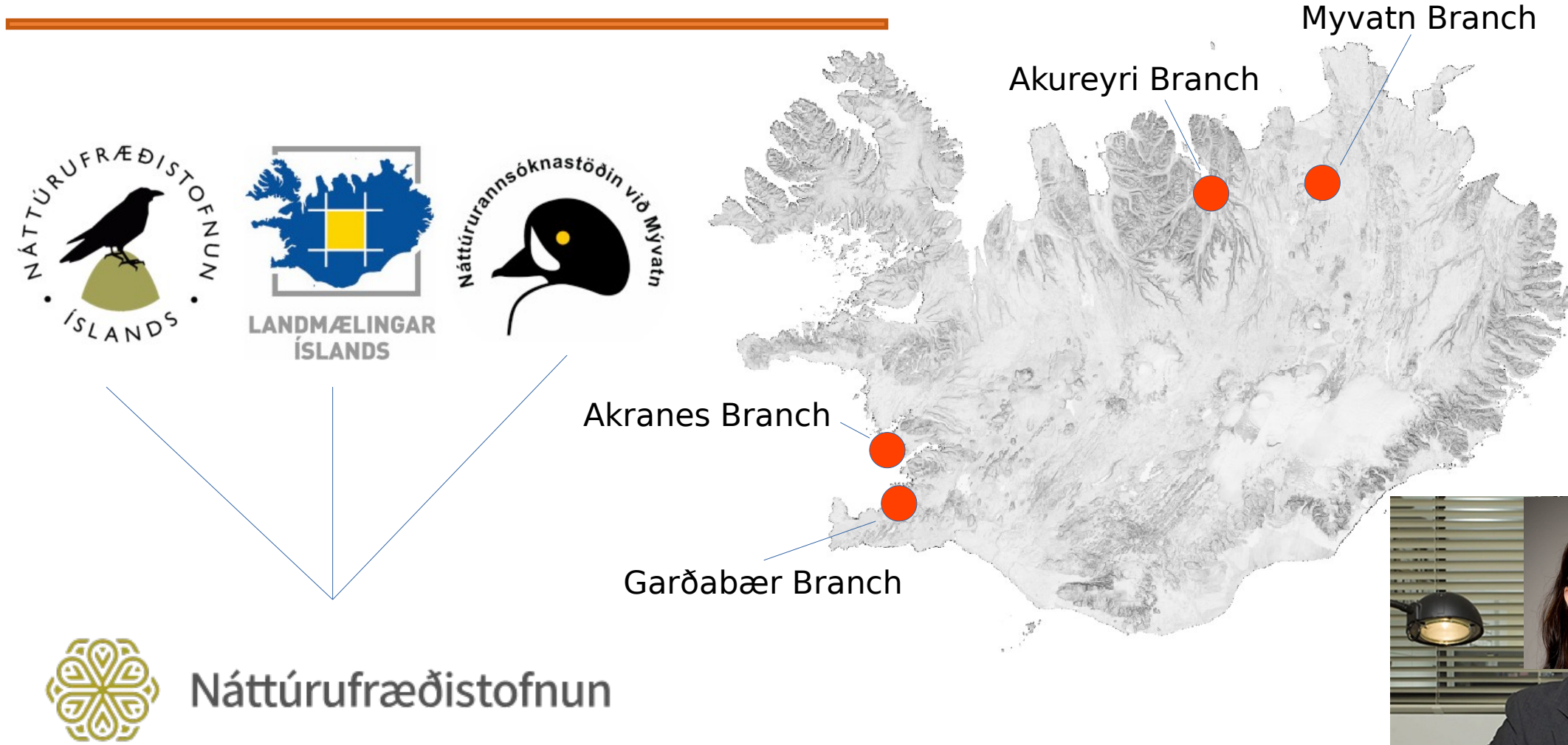
National Report: Iceland



Natural Science Institute of Iceland
(former National Land Survey of Iceland)

Joaquín M.C. Belart
joaquin.m.belart@natt.is

Merge of Institutes



Total staff: ~75 people
Annual budget: ~1 500 mill. ISK



Tender of aerial photography

Oct 2022:
Decision to start
tender

Mar 2023:
Tender specs
finalized

Apr 2023:
Announcement of
tender

May 2023:
Complaint
received

Aug 2023:
First tender rejected
by committee

Dec 2023:
Announcement of
tender

Feb 5 2024:
Complaint
received

Feb 20 2024:
Complaint
resolved, winners
selected

Jun 2024:
Mapping began

Summers 2025 –
2028 or 2029?
Complete
mapping

Feb 5 2024:
Tender application
deadline

Mar 2024:
Contracts drafted
and signed

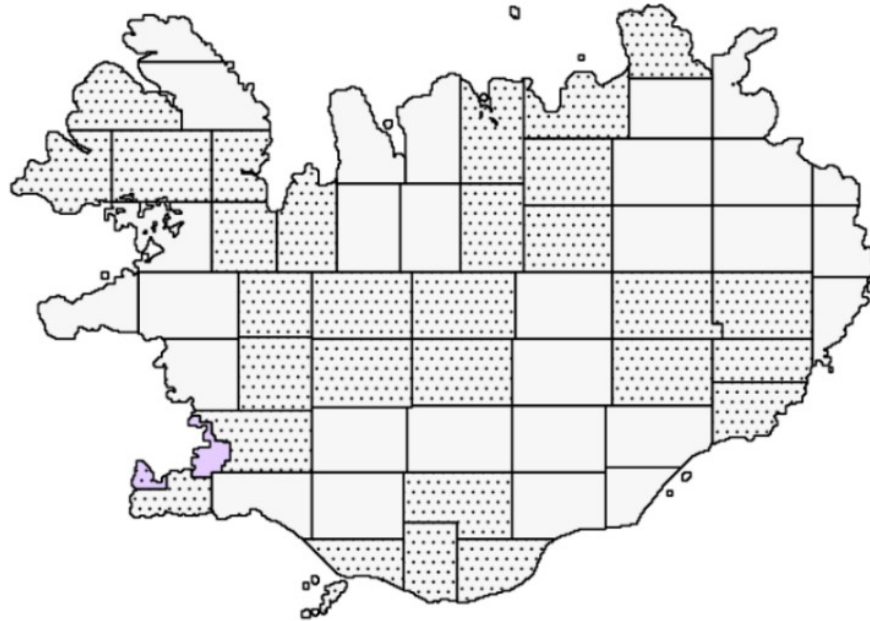
Sep 2024:
Mapping end
1st season

Tender of aerial photography

- Legal battles were resolved in February 2024
- First country-wide, openly available aerial surveys since year 2000



Lot Number
Lot 1
Lot 2
Block GSD
25 cm
10 cm

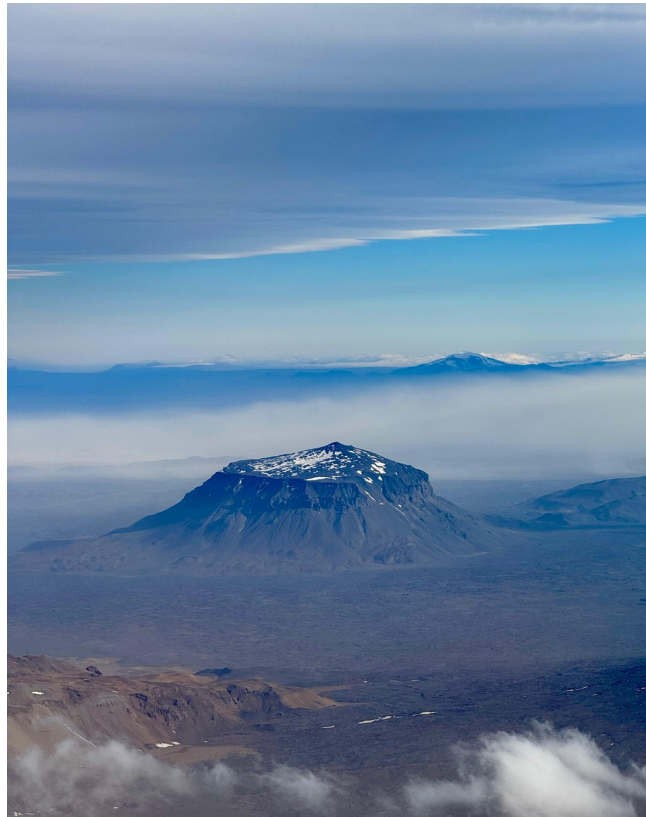
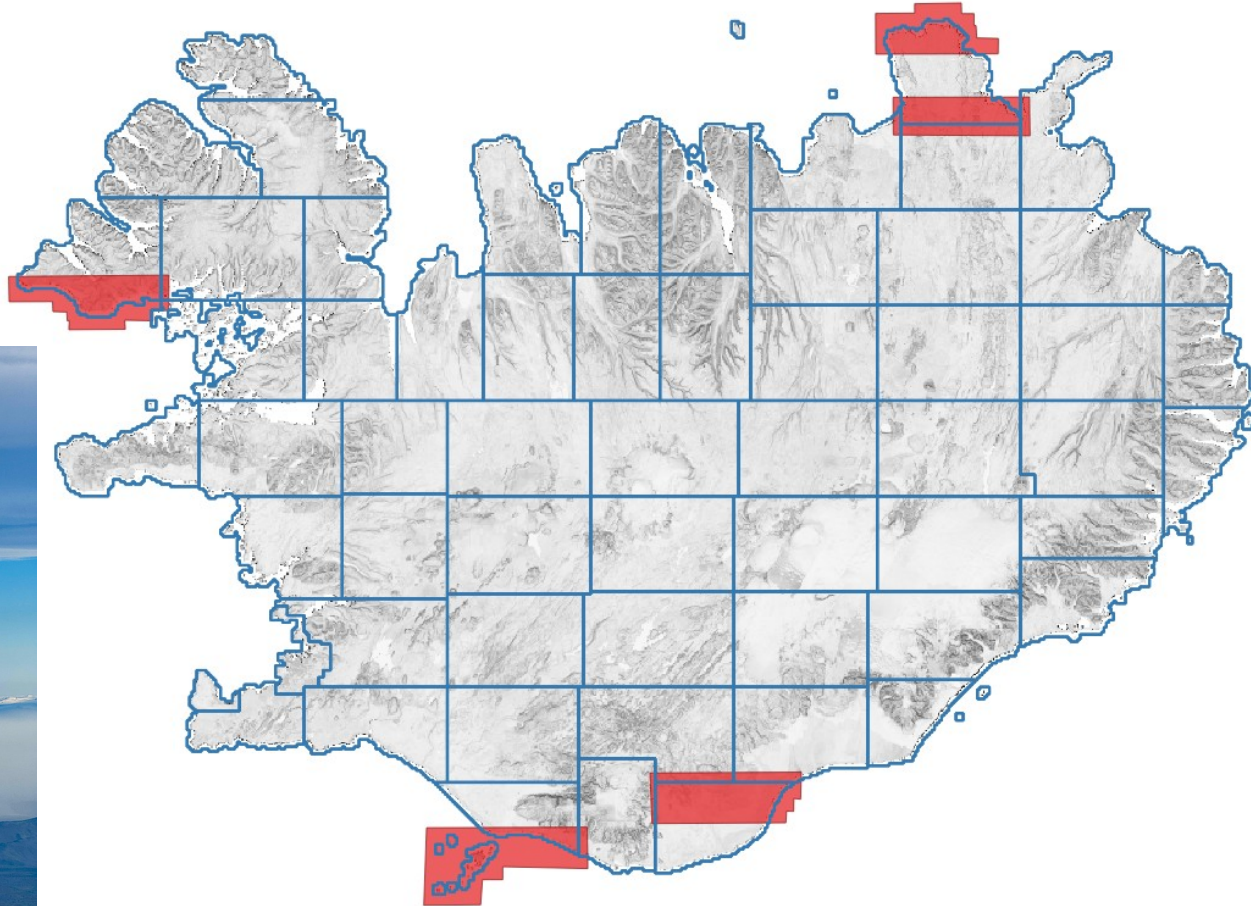


0 50 100 km



Aerial photography collection: Year 1 (summer 2024)

- Worst weather in Iceland since the late 80s
 - Hexagon malfunction of airplane. Meixner arrived late, also had malfunction of airplane
- Total:** 2500 km², 1600 photographs, 6 Tb of data



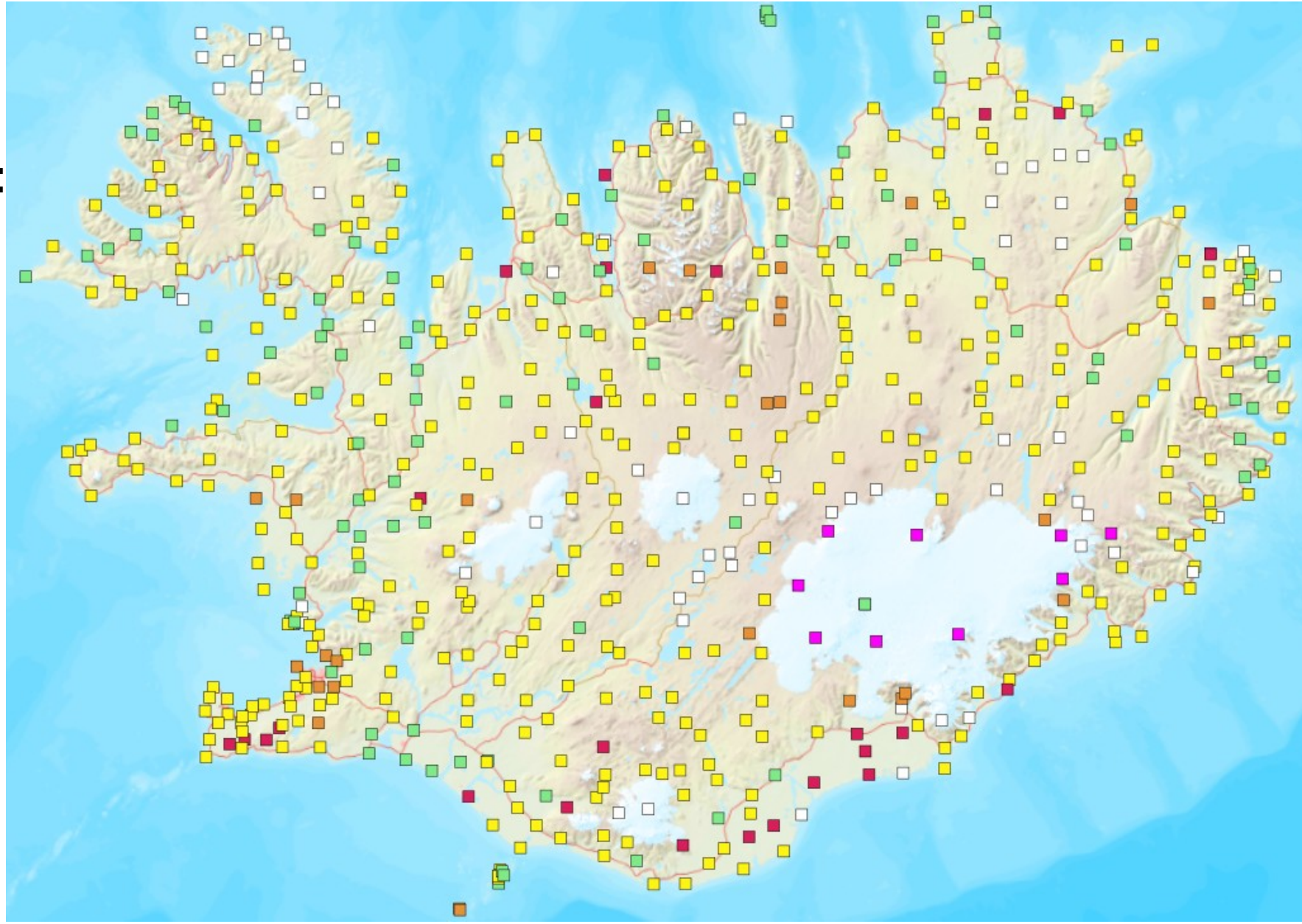
Aerial photography collection: Year 1 (summer 2024)



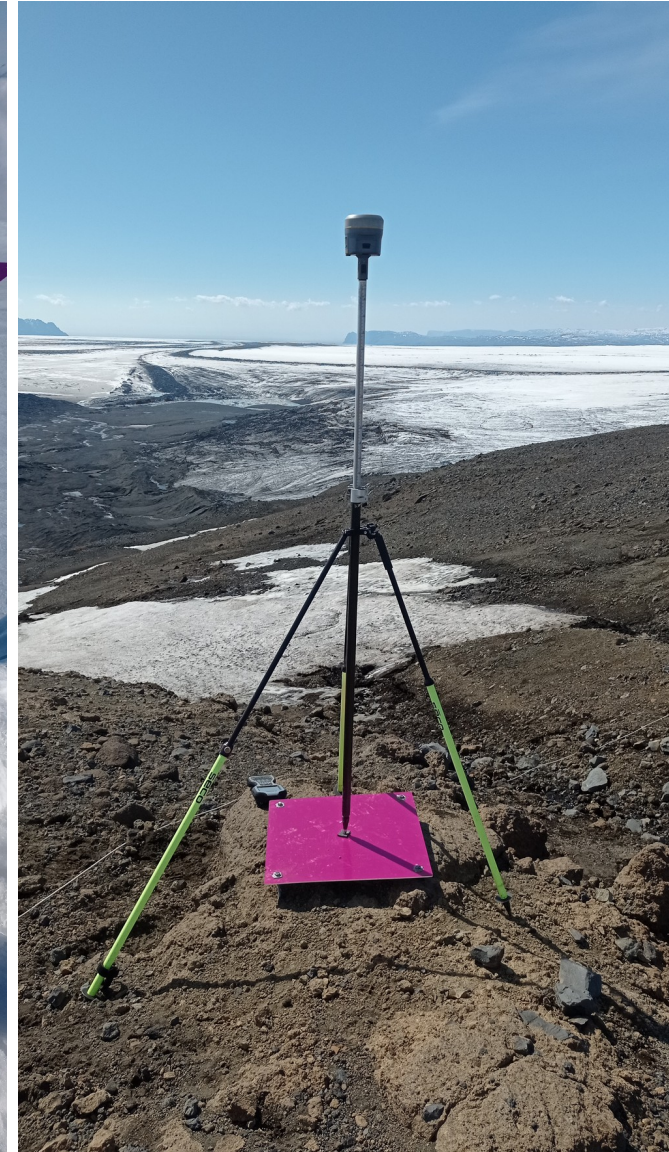
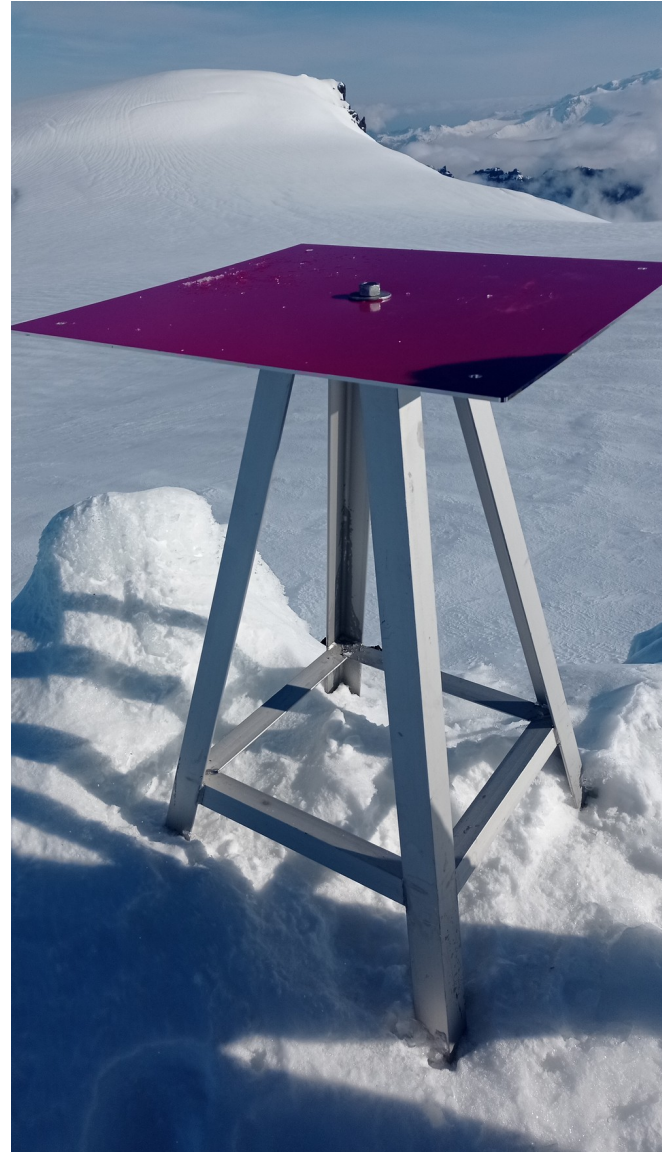
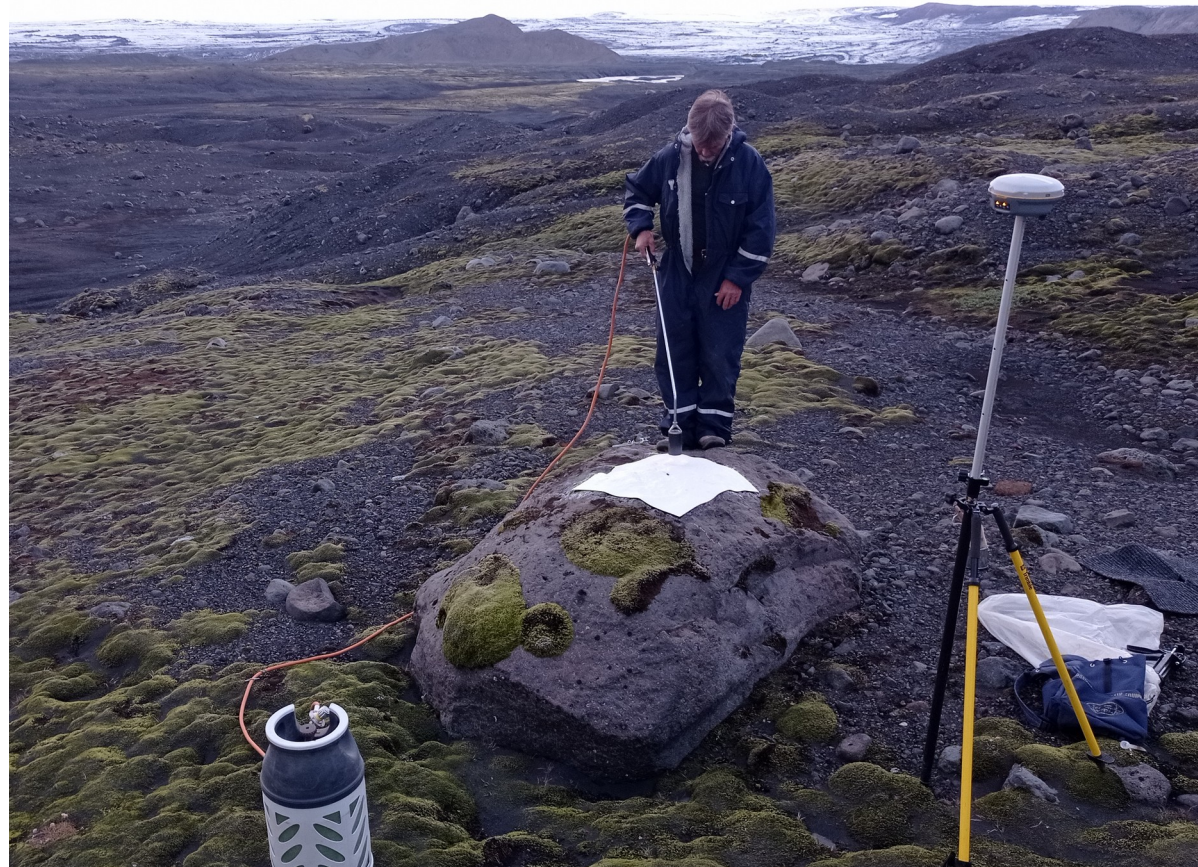
Ground Control Points

Total >600 GCPs placed:

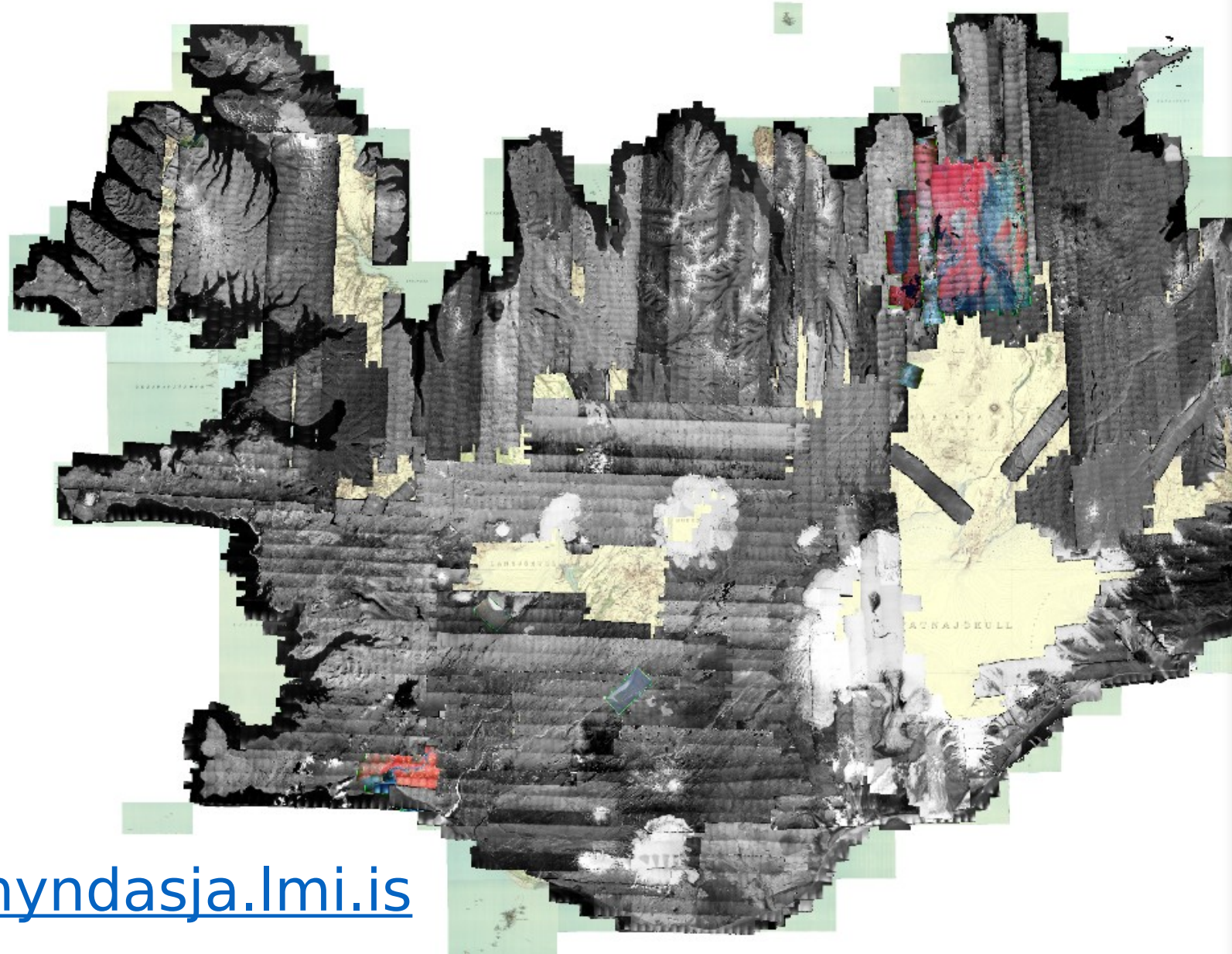
- ~80% “burned”
- ~10% rubber mats
- ~5% painted
- ~5% metal ones



Ground Control Points: Fieldwork summer 2024



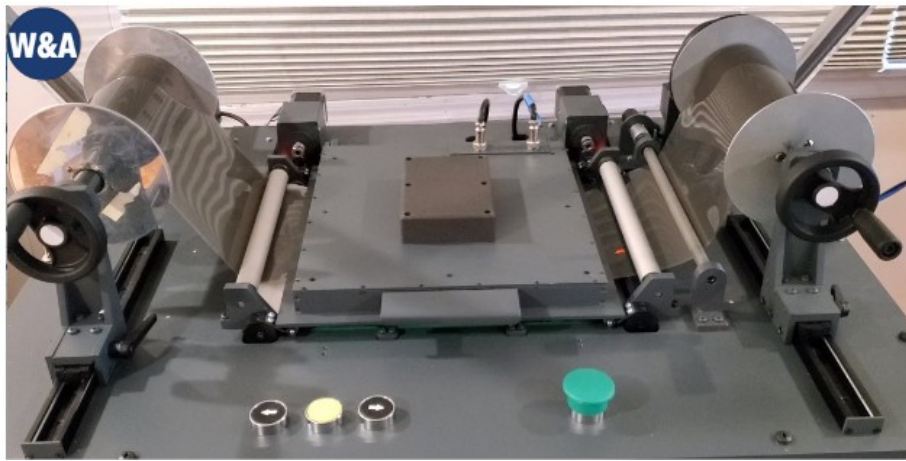
Archive of historical aerial photography



loftmyndasja.lmi.is

- 1945 [i](#)
- 1946 [i](#)
- 1954 [i](#)
- 1959 [i](#)
- 1960 [i](#)
- 1970 [i](#)
- 1974 [i](#)
- 1975 [i](#)
- 1978 [i](#)
- 1979 [i](#)
- 1980 [i](#)
- 1984 [i](#)
- 1985 [i](#)
- 1987 [i](#)
- 1989 [i](#)
- 1990 [i](#)
- 1991 ^
 - 1991, svarthvít mynd [i](#)
 - 1991, innrauð mynd [i](#)
- 1992 ^
 - 1992, svarthvít mynd [i](#)
 - 1992, innrauð mynd [i](#)
- 1993 ^
 - 1993, svarthvít mynd [i](#)
 - 1993, litmynd [i](#)

Scanning of historical aerial photographs: completed!

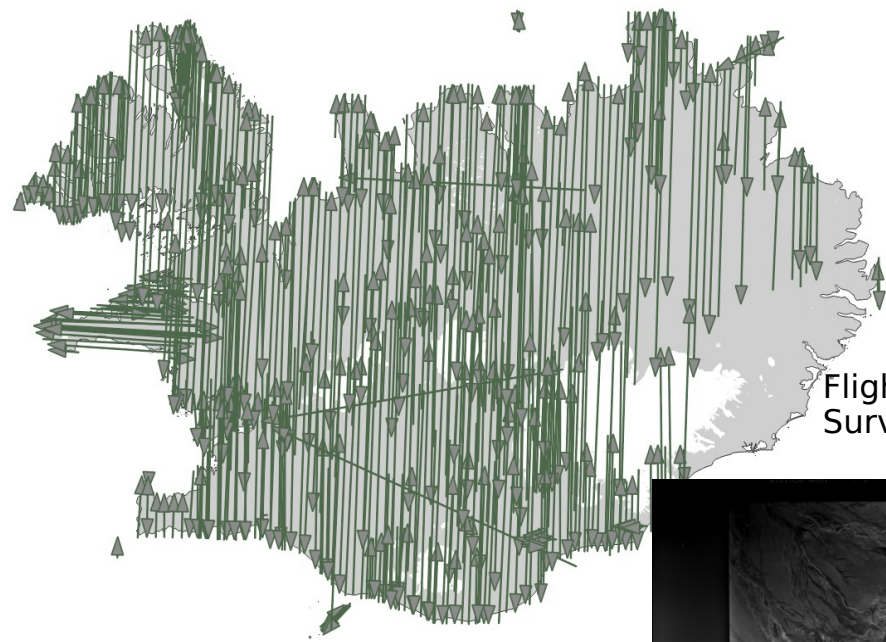


~60 000 images scanned this year
(including ~5 000 cut films)

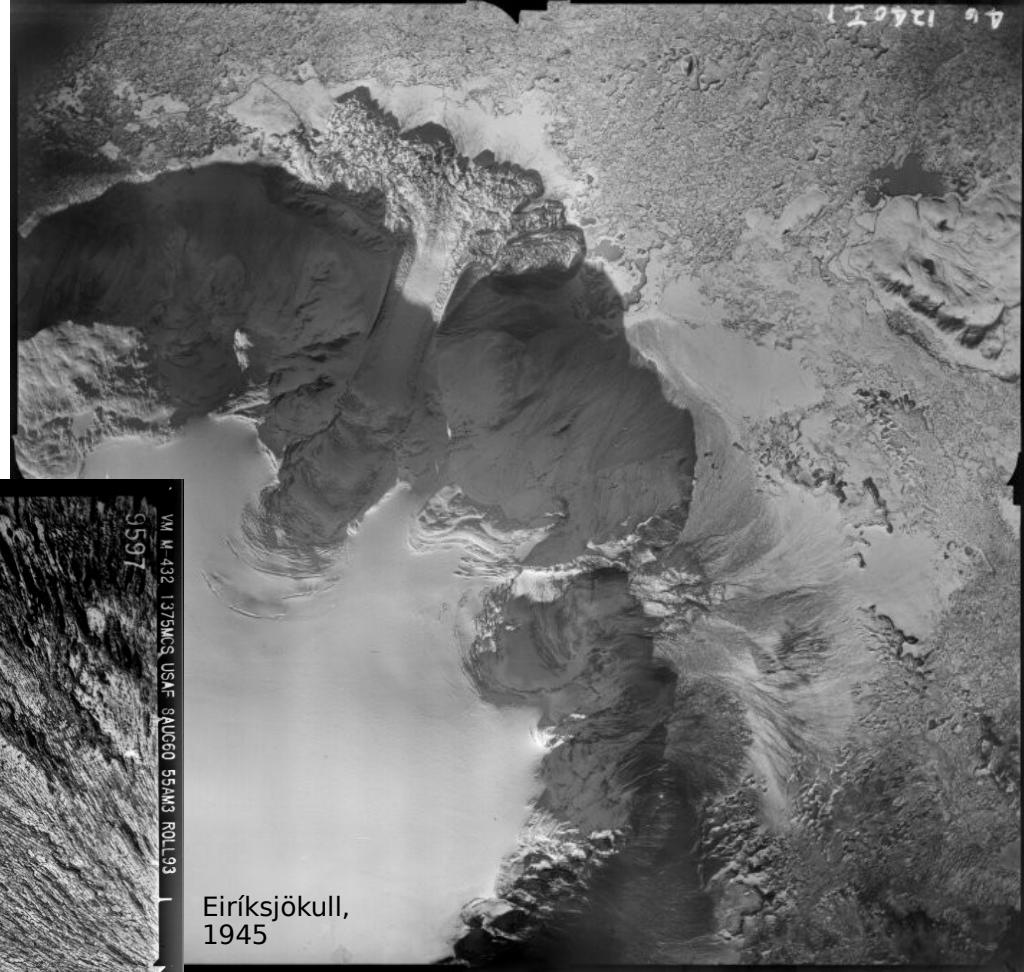
25 Tb of data

Two crates sent to US and back

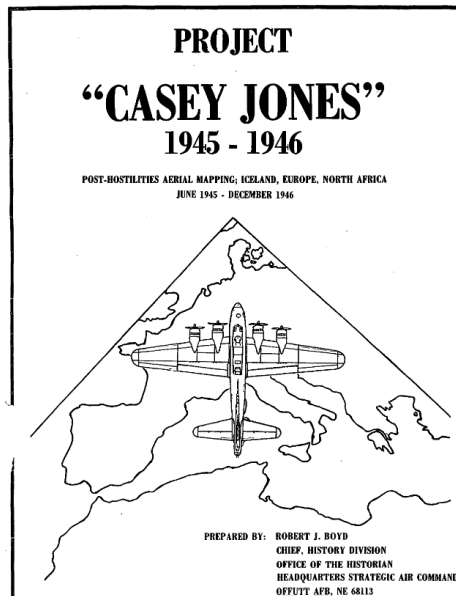
1945 to 1961



Flightlines American
Surveys 1956-1961



Eiríksjökull,
1945

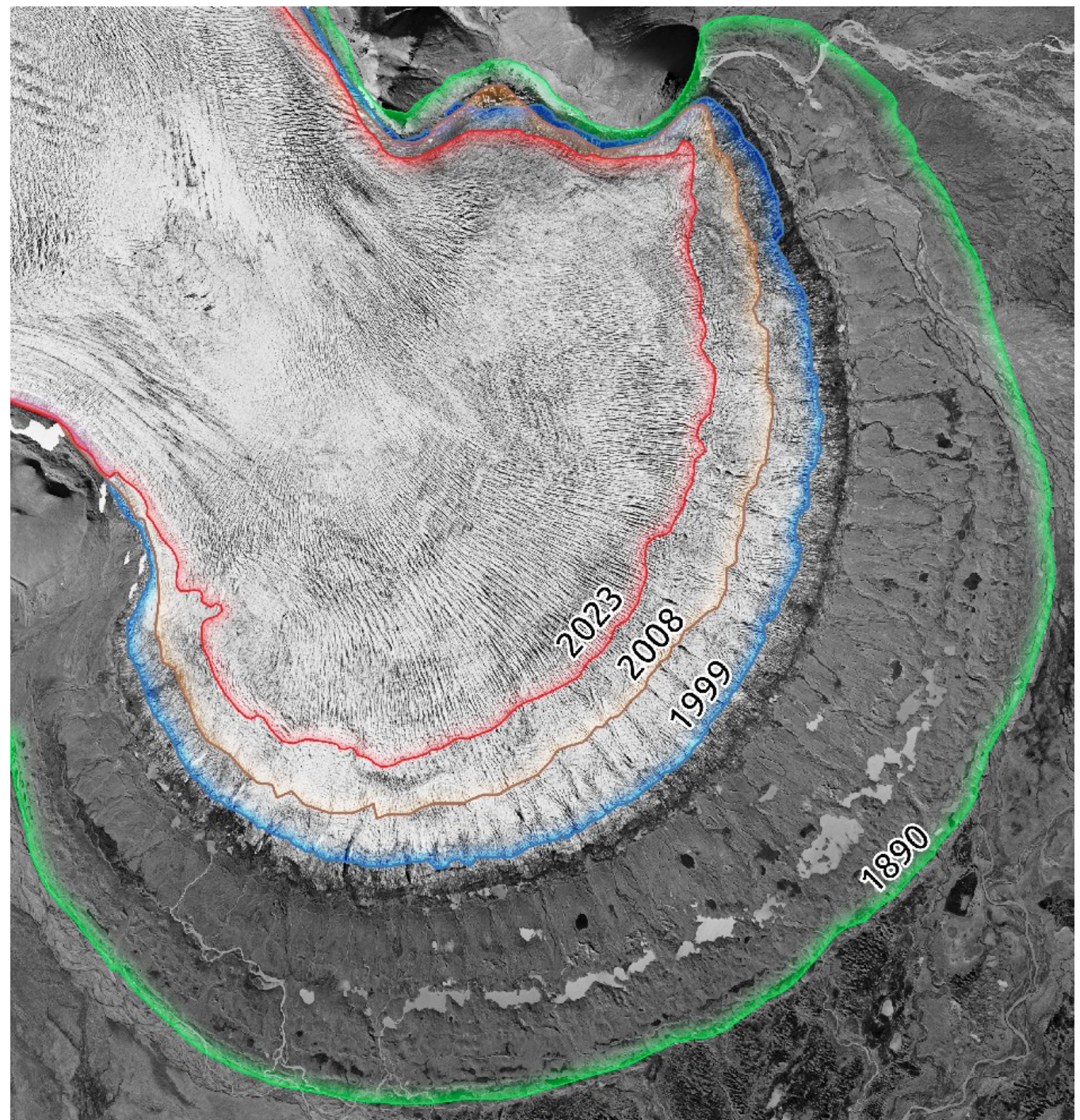


Dingjujökull,
1960

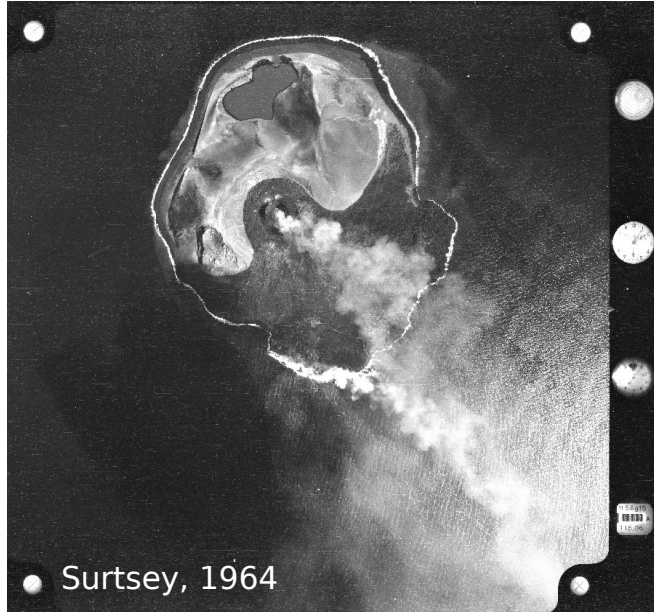
Images from 1945 and 1960 have now
coarse georeference

Also available for download

Glacier changes



Volcanic changes



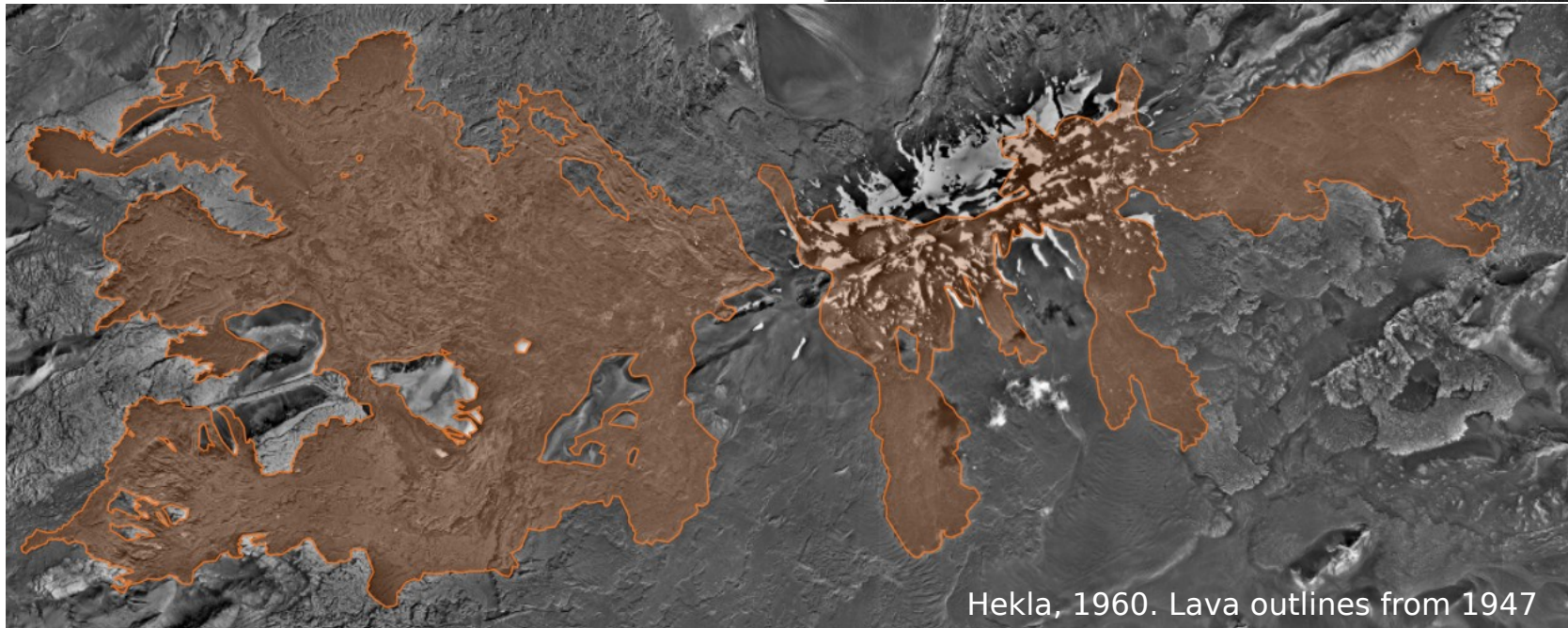
Surtsey, 1964



Krafla, 1977



Heymaey, 1973

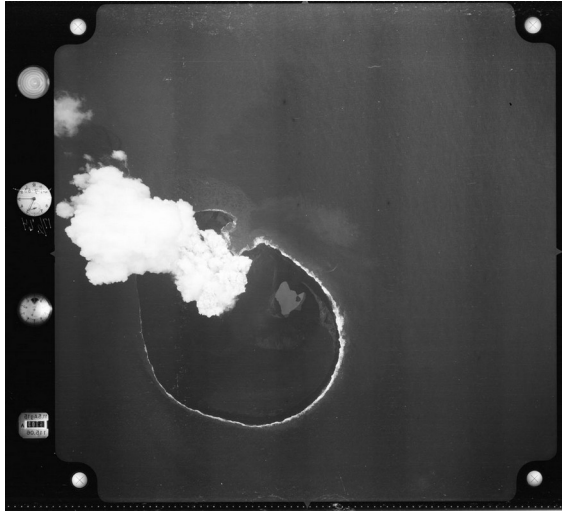


Hekla, 1960. Lava outlines from 1947

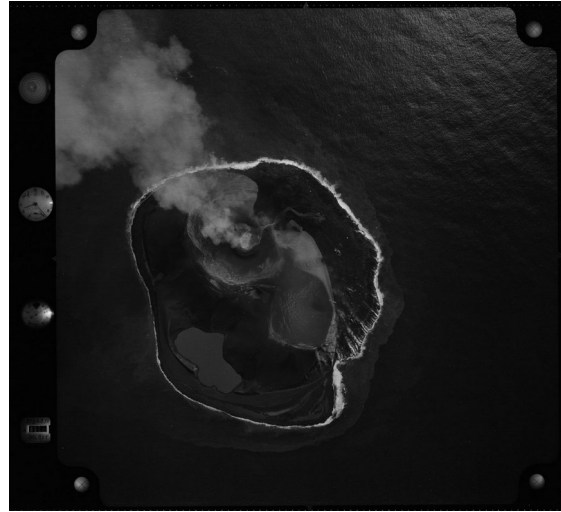


Heymaey, 1973 (closeup)

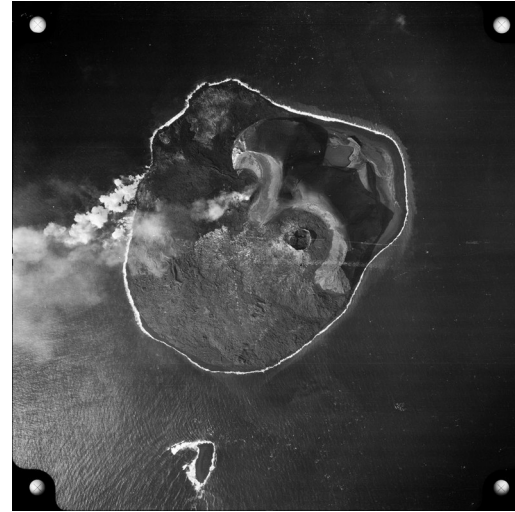
Pilot project in 3D visualization (led by Kieran Baxter)



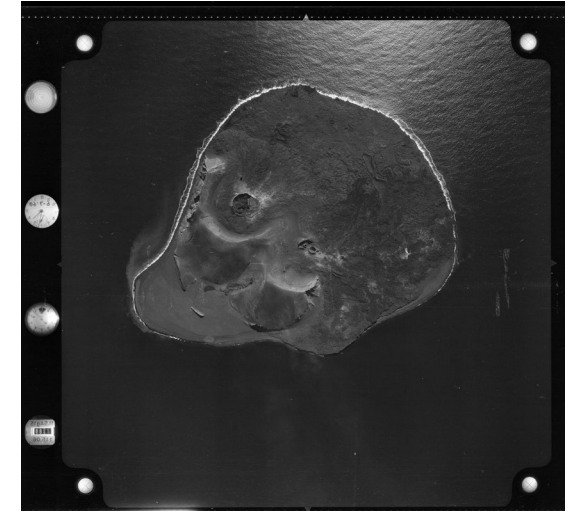
1964 (March)



1964 (June)



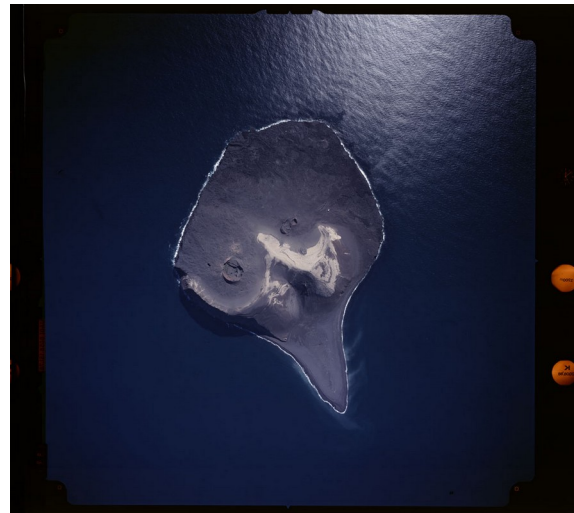
1966



1968



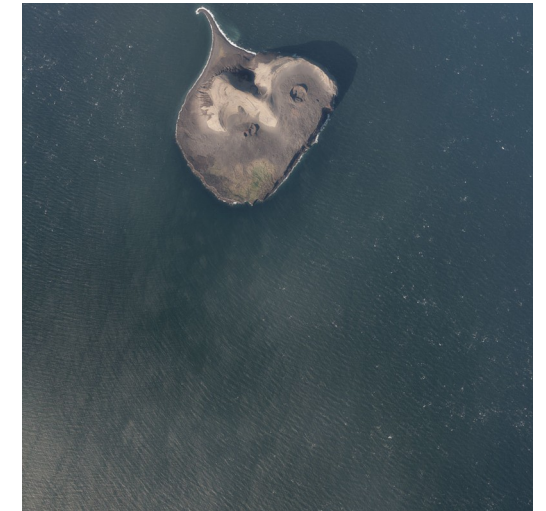
1973 (NASA)



1988



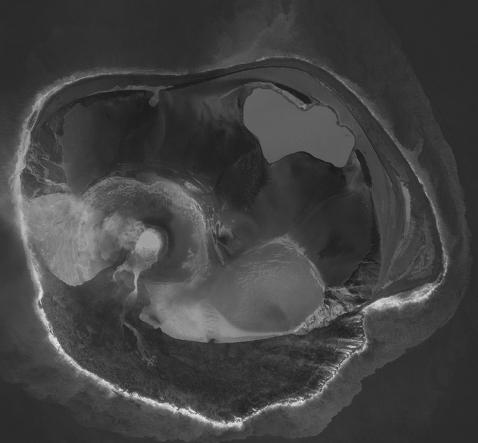
1998



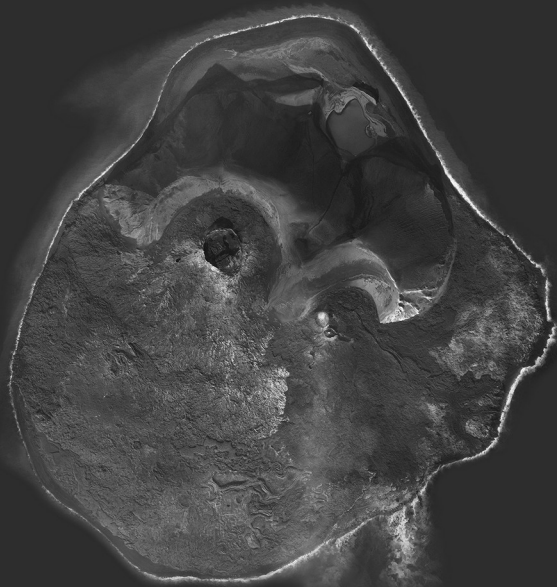
2024

Original

1964



1966



1968



True colour

1973



1988



1998



Colourised

1964



1966



1968



True colour

1973



1988



1998

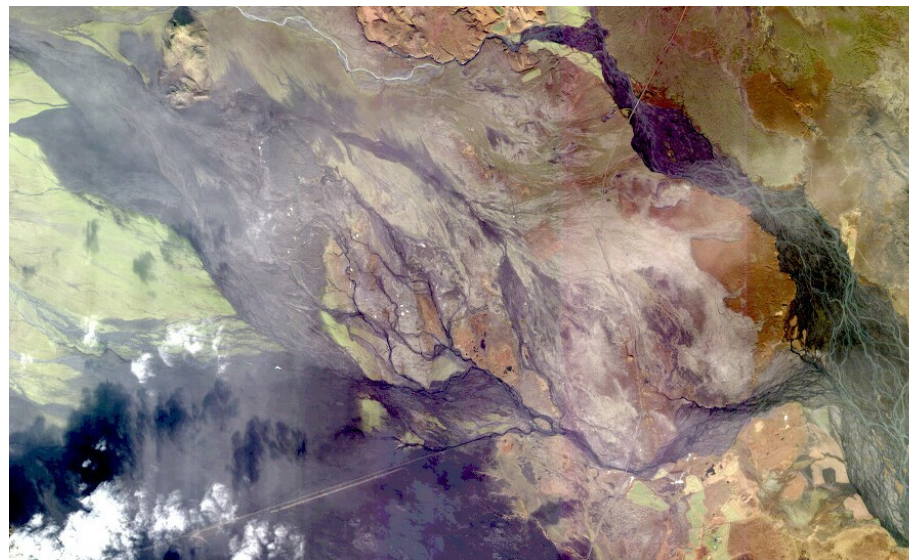
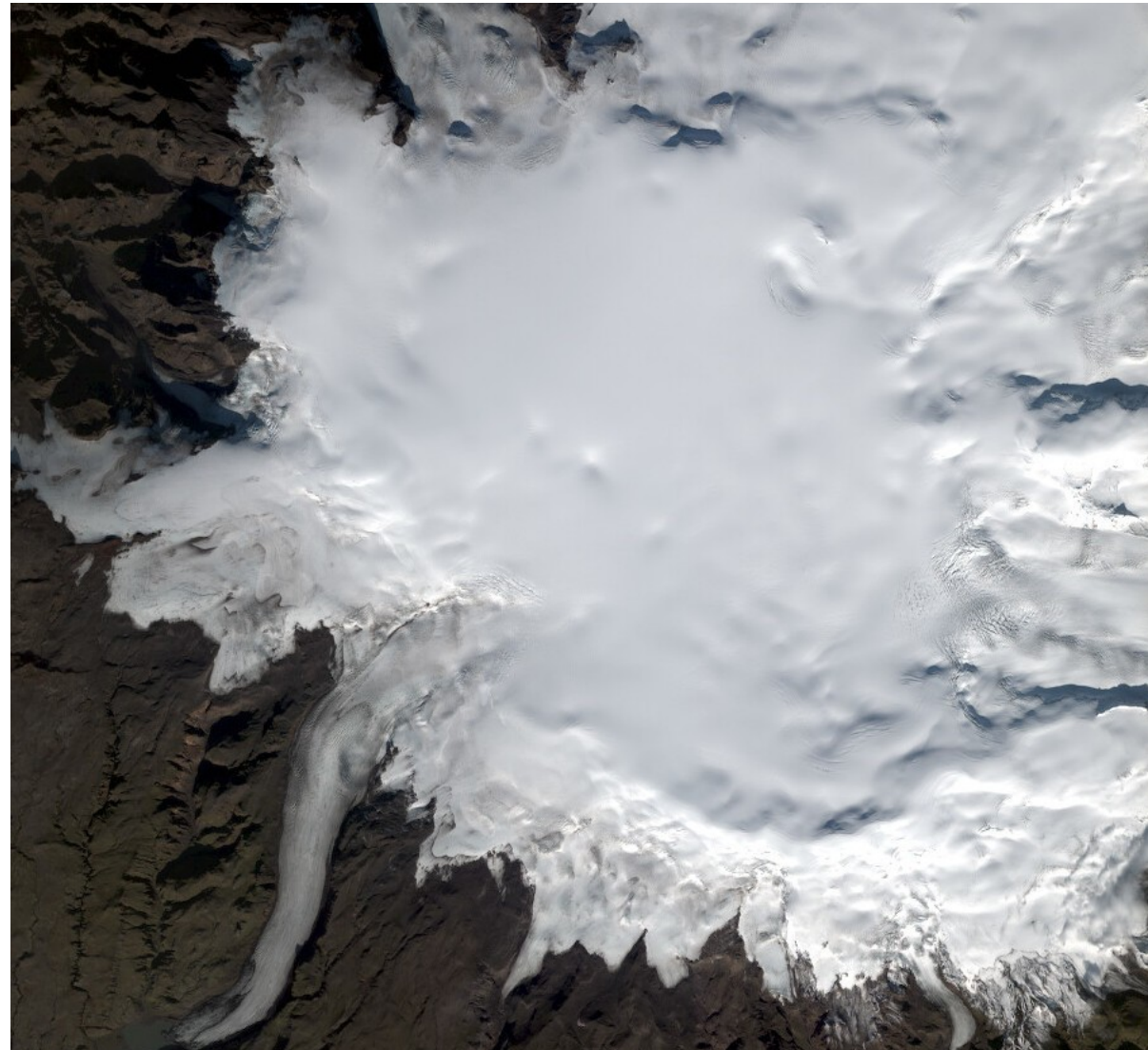


<https://vimeo.com/1028900322/d1a4c11ed9>

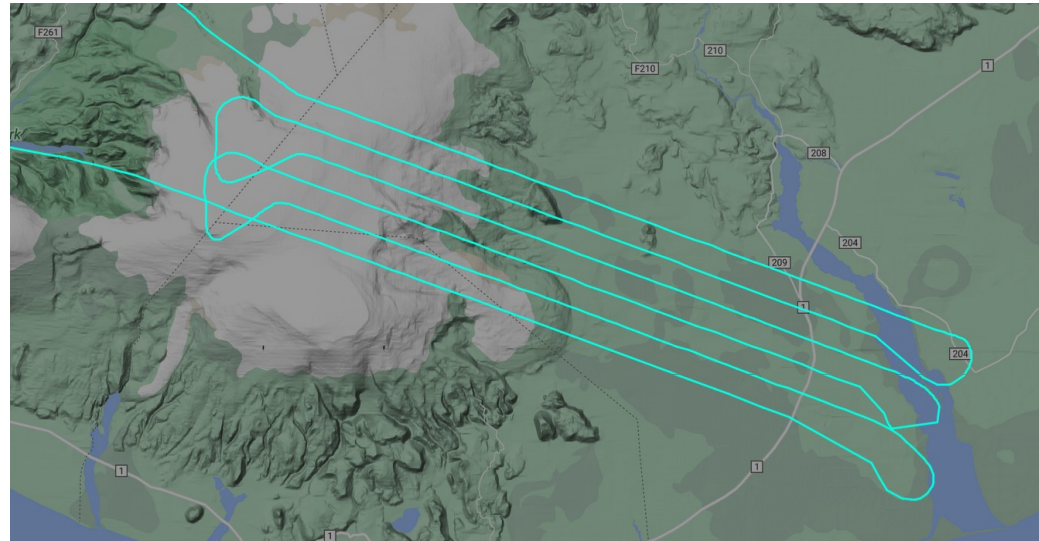
Pléiades Stereoimages

5 volcanic zones mapped yearly since 2018 (2500 km²/yr)

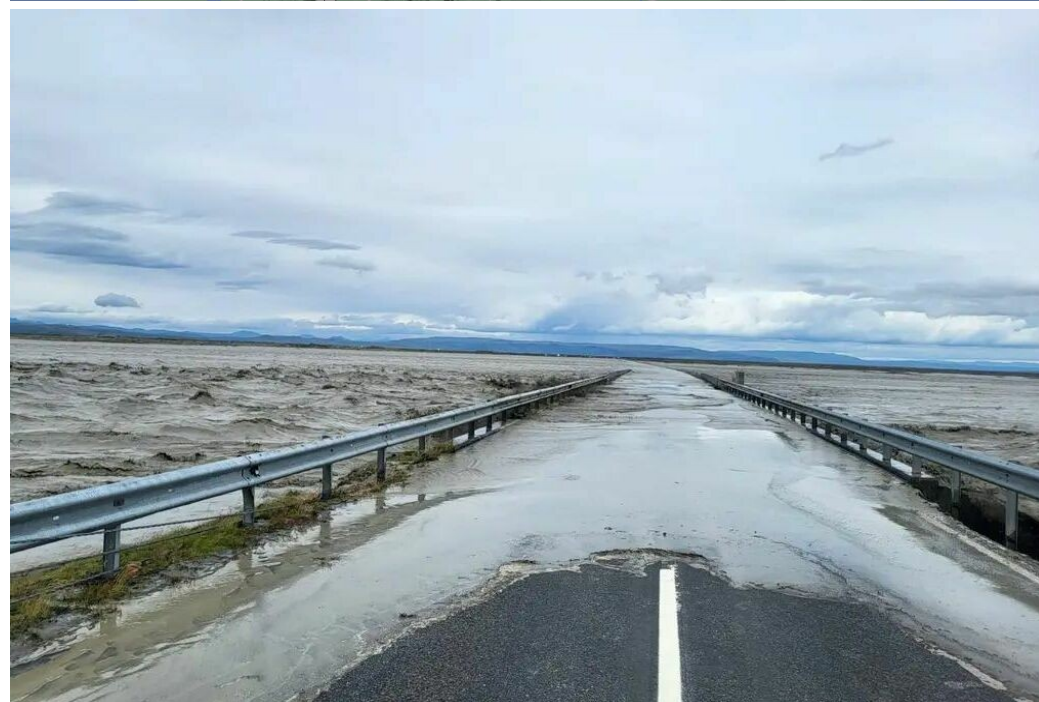
Eruption emergency tasking (2 times/yr, 10 consecutive days each time)



Skálm jökuhlaup

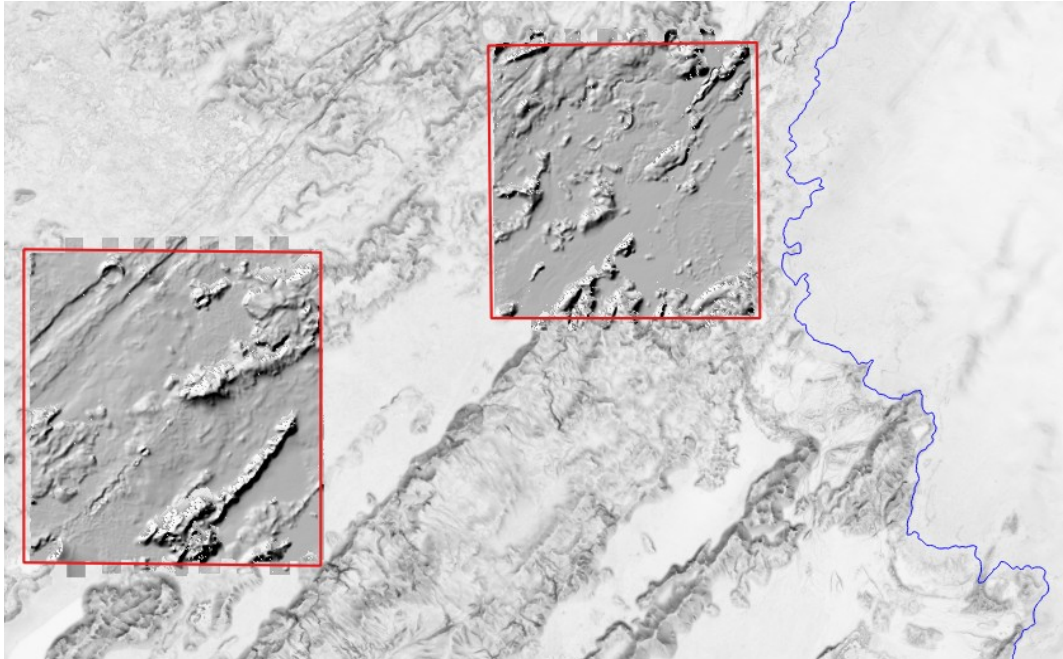
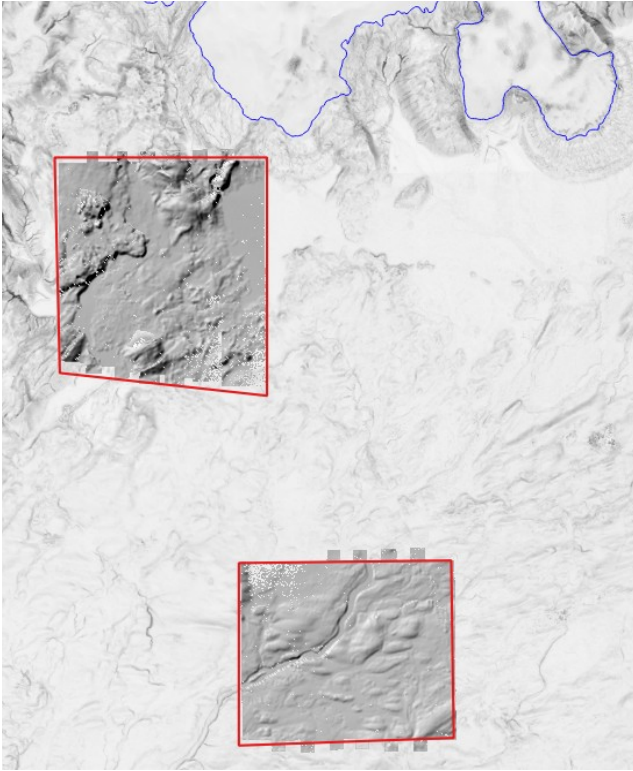
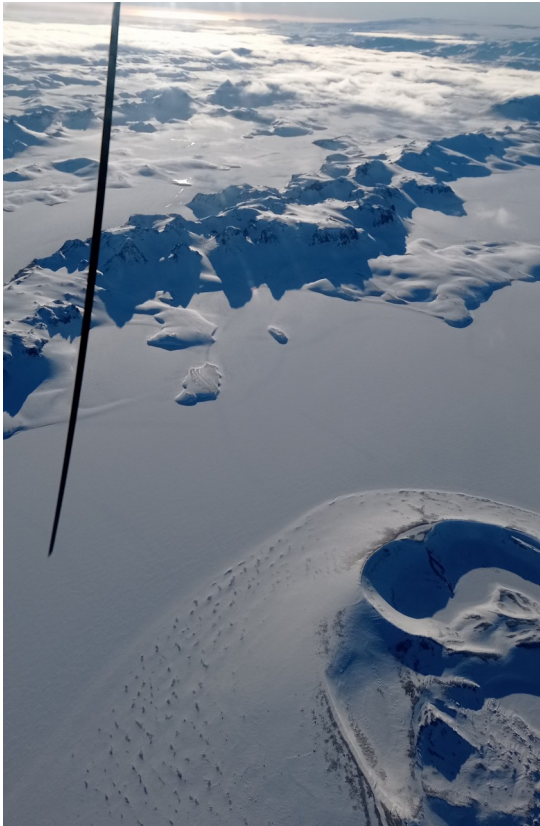


Extra surveys done in S-Iceland as part of the response of a jökuhlaup (glacier flood outburst) that destroyed a bridge in summer



Snow measurements

Total:
8 flying hr
572 km²



Tak!

