



QGreenland

# The QGreenland Approach to Building Sustainability via Collaboration

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Environmental Science, University of Colorado Boulder

Award #1928393



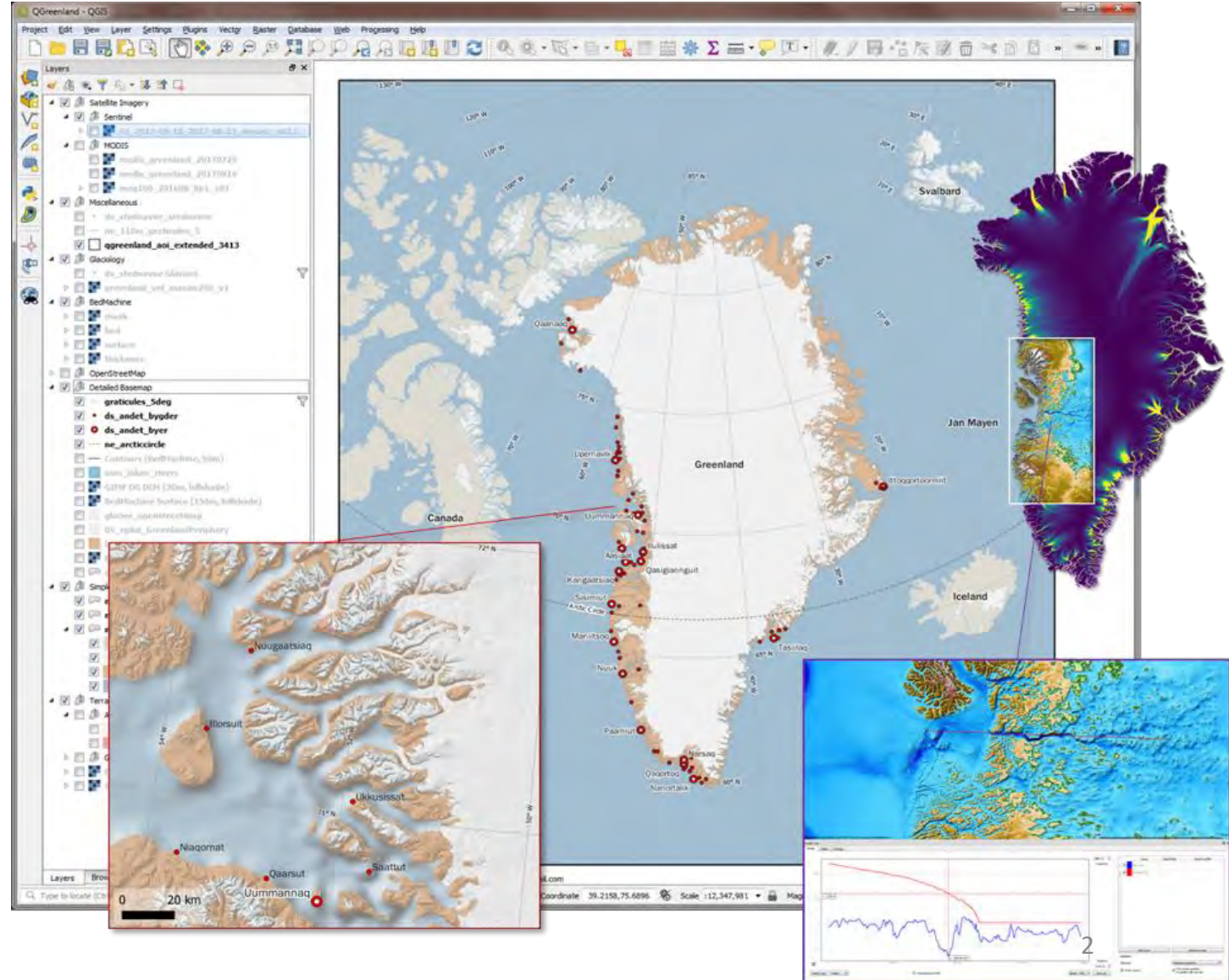


# What is QGreenland?

- **All-in-one Greenland-focused GIS environment for offline and online use with QGIS** (free & open source software)



- **Curated interdisciplinary data package** for research, learning, decision making, and collaboration





# Collaborations: Partnering with International Data Producers

- Greenland Ecosystem Monitoring Program
- Asiaq
- Pinngortitaleriffik

- Norsk Polarinstitutt

- U.S. Polar Geospatial Center
- Greenland Ice Sheet Ocean Science Network
- N.S.F. Arctic Data Center
- National Snow & Ice Data Center

- De Nationale Geologiske Undersøgelser for Danmark og Grønland
- Danmarks Tekniske Universitet
- Danmarks Meteorologiske Institut
- WWF-Danmark

Your data!

- Arctic Data Committee
- International Arctic Science Committee





# Collaborations: Engaging an International Editorial Board



**Yarrow Axford**  
Northwestern University  
Specialty: Paleolimnology



**Lauren E. Culler**  
Dartmouth University  
Specialty: Ecology



**Lars Demant-Poort**  
Ilisimatusarfik (University of Greenland)  
Specialty: Science education



**Niels Korsgaard**  
Geologic Survey of Denmark and Greenland  
Specialty: Remote sensing



**Ruth Mottram**  
Danish Meteorological Institute  
Specialty: Climate and modeling



**Irina Overeem**  
University of Colorado Boulder  
Specialty: Geology



**Eva Mätzler**  
Asiaq  
Specialty: GIS



**Rene Forsberg**  
Technical University of Denmark  
Specialty: Ice dynamics



**Ruth Heindel**  
Kenyon College  
Specialty: Biogeochemistry



**John Kamper**  
Asiaq Greenland Survey  
Specialty: Geodata and mapping



**Vinton Valentine**  
University of Southern Maine  
Specialty: Coastal geography



**Karl Zinglensen**  
Greenland Institute for Natural Resources  
Specialty: GIS



**Christian Brogaard Pedersen**  
Geologic Survey of Denmark and Greenland  
Specialty: GIS





# Collaborations: Partner with Projects



Polar PASS

## Polar PASS

About this Project

Teaching Materials

The Team

Get Involved

## PolarPASS: Polar Places and Spaces

Earth's polar environments have undergone rapid change during the 21st century and scientists have generated important new data and made groundbreaking insights. Despite growing interest to bring polar-focused material into the undergraduate classroom, curriculum developed has lagged. Polar Space and Places, or PolarPASS, is connecting polar-focused material with innovative teaching methods to advance STEM undergraduate education and increase polar knowledge.

[Read more about this project](#)

[Get Involved](#)

## PolarPASS Modules

Using real data, diverse material types, and a range of activities, PolarPASS modules are designed to bring polar science and exploration to the classroom. PolarPASS modules link to [Climate Literacy Principles](#) and [Polar Literacy Principles](#) and are being tested in teaching models that include semester, quarter, and block teaching models.

[Browse PolarPASS Modules](#)



[serc.carleton.edu/polarpass](http://serc.carleton.edu/polarpass)



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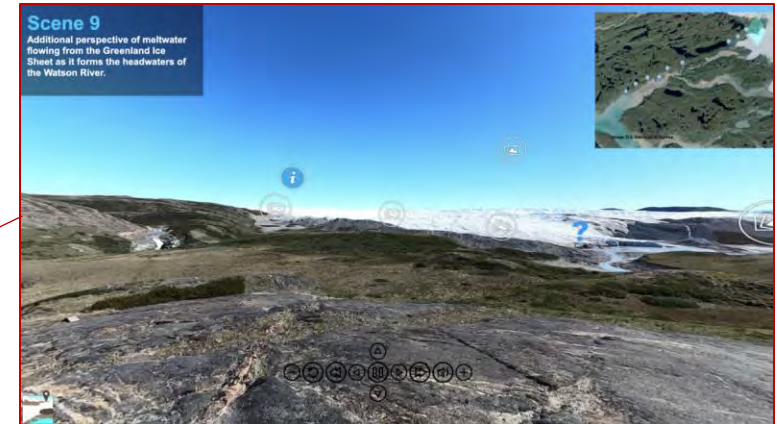
Get Involved

## PolarPASS Modules

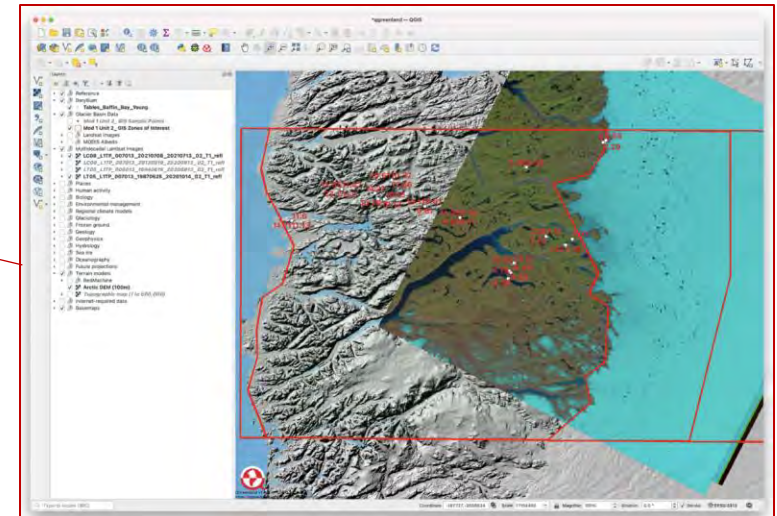
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Browse PolarPASS Modules

## Use Interactive Environments



## Use QGreenland & GIS



[serc.carleton.edu/polarpass](http://serc.carleton.edu/polarpass)



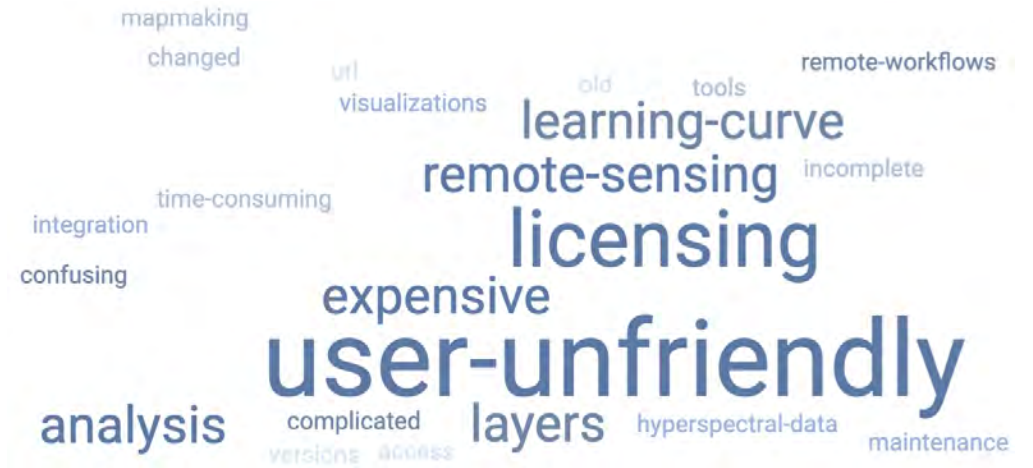


# Sustainability: Undertake User Research

## Geospatial software: Pros



## Geospatial software: Cons



## Our (potential & current) users want:

- Tutorials & documentation
- Clear information on collaborating
- Input on development to support their use cases







# Sustainability: Apply Open Science Principles & Make the Tool Easy to Use

## Open Development

The screenshot shows the GitHub interface for the repository 'nsidc / qgreenland'. At the top, there is a 'Sign up' button and the GitHub logo. Below the repository name, it indicates 'Public' and provides the source code URL: <https://qgreenland.org/>. The repository has 18 stars and 8 forks. There are buttons for 'Star' and 'Notifications'. The main branch is 'main'. A commit by 'alysethurber' is shown, dated 'on Aug 26'. Below the commit, there is a 'View code' link. At the bottom, there are links for 'README.md', 'NSF 1928393', and 'DOI 10.5281/zenodo.6369184'. The repository title 'QGreenland' is displayed, followed by a partial view of a website with the text 'An interdisciplinary environment...' and images of maps and data visualizations.



# Sustainability: Apply Open Science Principles & Make the Tool Easy to Use

## Open Development

Sign up

nsidc / qgreenland Public

Source code for generating the QGreenland package hosted at <https://qgreenland.org/>

View license

18 stars 8 forks

Star Notifications

Code Issues Pull requests 3

main Go to file

alysethurber on Aug 26

View code

README.md

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## Thorough + Organized

QGreenland

QGreenland Documentation Edit on GitHub

### QGreenland Documentation

#### What is QGreenland?

An interdisciplinary environment...

...with local detail and island-wide data.

QGreenland is a free and open-source Greenland-focused GIS environment for data analysis and viewing, powered by QGIS. QGreenland is delivered in two ways:

1. **QGreenland Core**: a large Zip package containing a core set of data curated to serve the majority of users. This documentation page is about QGreenland Core.
2. **QGreenland Custom (beta)**: a QGIS plugin for downloading a custom set of data, including data which is not part of the QGreenland Core zip package (for example, due to filesize



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## Tutorials + Updates

YouTube

### QGreenland Beginner's Tutorial Series

QGreenland

7 videos Last updated on May 18, 2022

The beginner's tutorial series will familiarize users with both GIS and the QGreenland data package. This 1-hour series was adapted from the ...More

Play all Shuffle

1. **QGreenland Beginner's Tutorial Series, Session 1: What is...**  
QGreenland • 87 views • 6 months ago
2. **QGreenland Beginner's Tutorial Series, Session 2: Introduction t...**  
QGreenland • 56 views • 6 months ago
3. **QGreenland Beginner's Tutorial Series, Session 3: Navigating th...**  
QGreenland • 47 views • 6 months ago



# Sustainability: Support & Demonstrate Diverse Uses

Research & Analysis  
Presentation & Publication

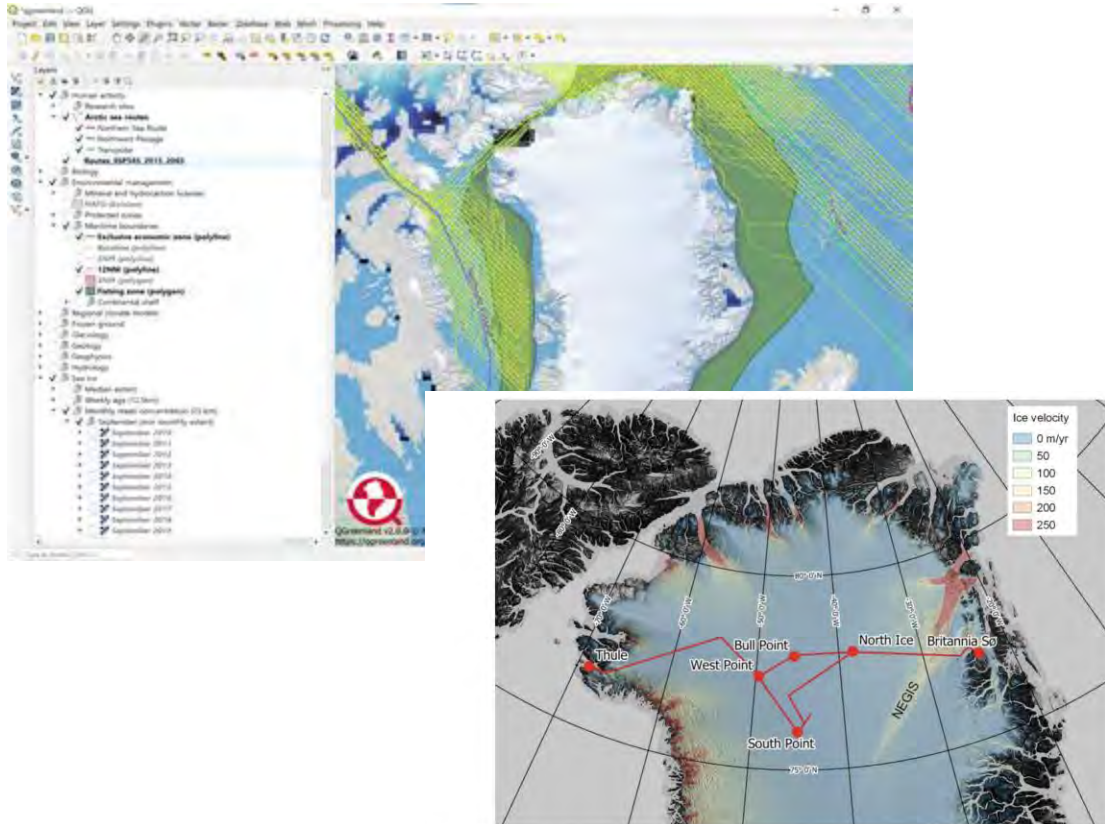


Figure 1. Map of the major field localities (red dots), including the BNGE bases at Britannia Sa and North Ice, and the approximate traverse routes (red lines) of the British North Greenland Expedition (adapted from Hamilton 1956). North East Greenland Ice Stream (NEGIS) is indicated. Base map is a multidirectional hillshade of the 100 m Arctic DEM (25x vertical exaggeration) overlain by the ITS LIVE 120 m ice velocity dataset. Both basemap datasets were accessed via <https://qgreenland.org/> [credits: Neil Ross]



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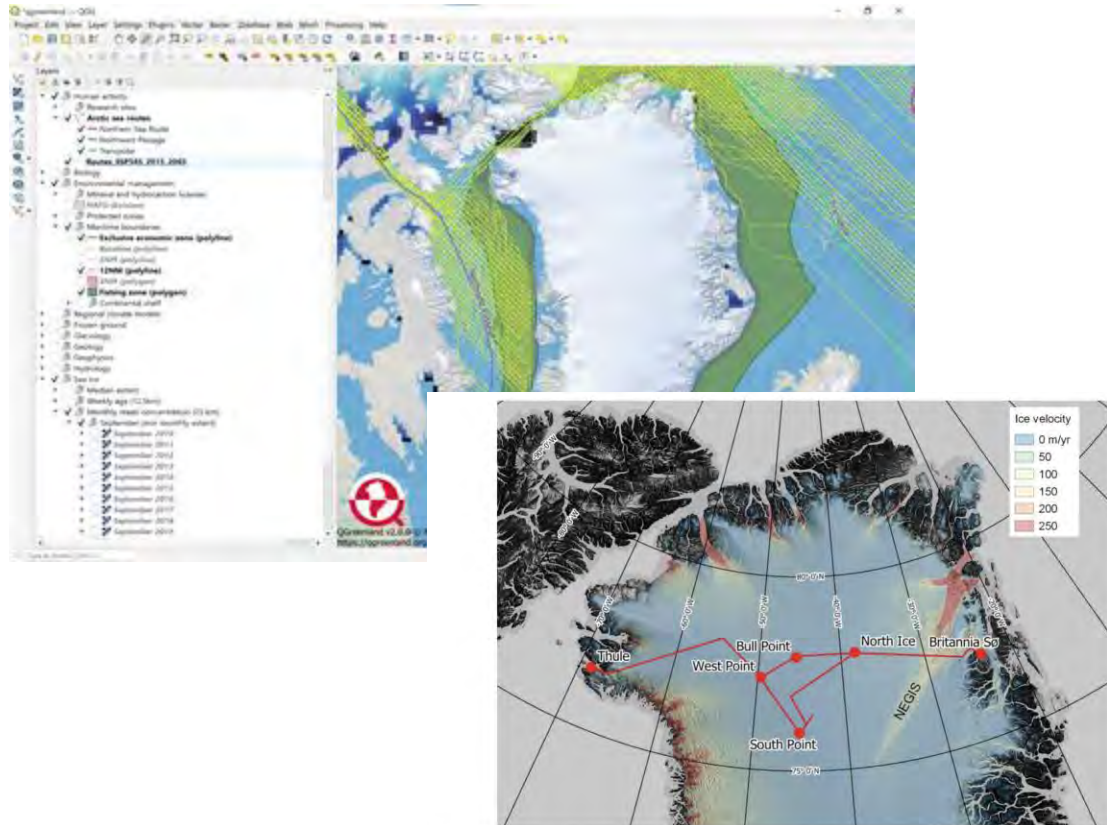
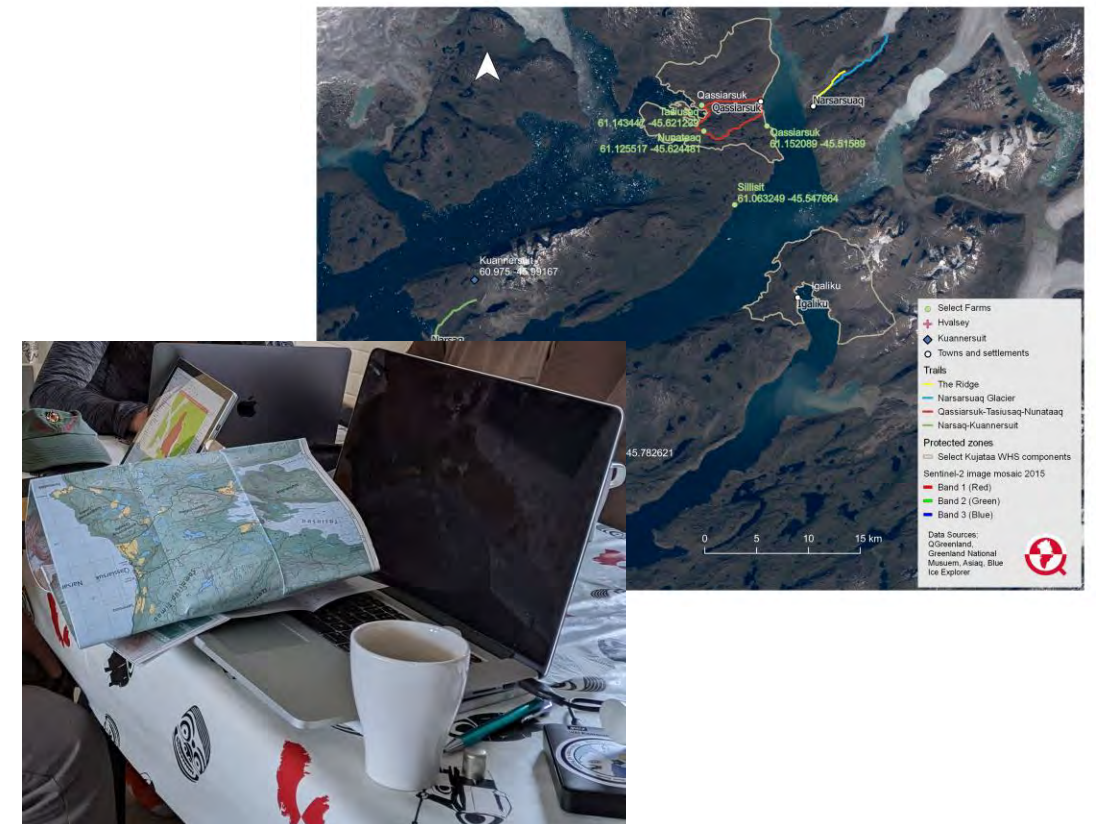


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Field Planning & Exploration  
Education & Teaching





# Sustainability: Keep Learning & Working at It

## #1 Learning Recommendation



### Gateway Focus Workshop

Looking to build a sustainability plan for your science gateway? Planning to write your next funding proposal?

Join us at the next Focus Week to create your starter sustainability toolkit! We will announce the next session for spring 2023. [Sign up for our newsletter](#) to find out when you can reserve your spot!

*[sciencegateways.org](http://sciencegateways.org)*





# Thank you!

**QGreenland.org**

[github.com/nsidc/qgreenland/](https://github.com/nsidc/qgreenland/)

Contact – [qgreenland.info@gmail.com](mailto:qgreenland.info@gmail.com)

