

# Navigating the New Arctic: Convergent Pressures on Arctic Development

David A Bailey

National Center for Atmospheric Research

NCAR is sponsored by the National Science Foundation.  
This work is funded by a collaborative NNA grant from the  
National Science Foundation.



## Loci of Arctic Development

Abbie Tingstad (RAND)  
Mia Bennett (HKU)  
Kristin Van Abel (RAND)  
Peggy Wilcox (RAND)

## Impact Through Integration

Amanda Lynch (Brown)  
Laurence Smith (Brown)

## Climate Scenarios

David Bailey (NCAR)  
Tamlin Pavelesky (UNC)  
Xiao Yang (SMU)  
Emma Perkins (Brown)  
Bradley Lockhart (Brown)  
Teagan King (NCAR)

## Case Studies

Siri Veland (NORCE)  
Michael Goldstein (Babson)

## International Reference Group

Lawson Brigham (UAF)

## Transportation Accessibility

Scott Stephenson (RAND)  
Dmitry Streletsky (GWU)  
Nikolay Shiklomanov (GWU)  
Xueke Li (PSU)  
Maria Luisa Rocha (Brown)

# International Reference Group

Lawson Brigham, Chair

University of Alaska Fairbanks & Wilson Center, USA

John Farrell

Executive Director, US Arctic Research Commission, USA

Gail Fondahl

Professor of Geography, University of Northern British Columbia, Canada

Anu Fredrikson

Executive Director, Arctic Frontiers, Norway

Bjørn Gunnarsson

Associate Professor, Centre for High North Logistics, Nord University, Norway

Tom Hoefer

Executive Director, NWT & Nunavut Chamber of Mines, Canada

Grete Hovelsrud

Professor of Anthropology, Nord University, Norway

Karlin Itchoak

Partner, ArKtiKa LLC, AK, USA

Stanislav Ksenofontov

Ammosov North-Eastern Federal University, Russia

Arild Moe

Head of EU Unit, The Saami Council

Elle Merete Omma

Research Professor, Fridtjof Nansen Institute, Norway

Viacheslav Shadrin

Association of North Indigenous Peoples of Yakutia, Russia

Tero Vauraste

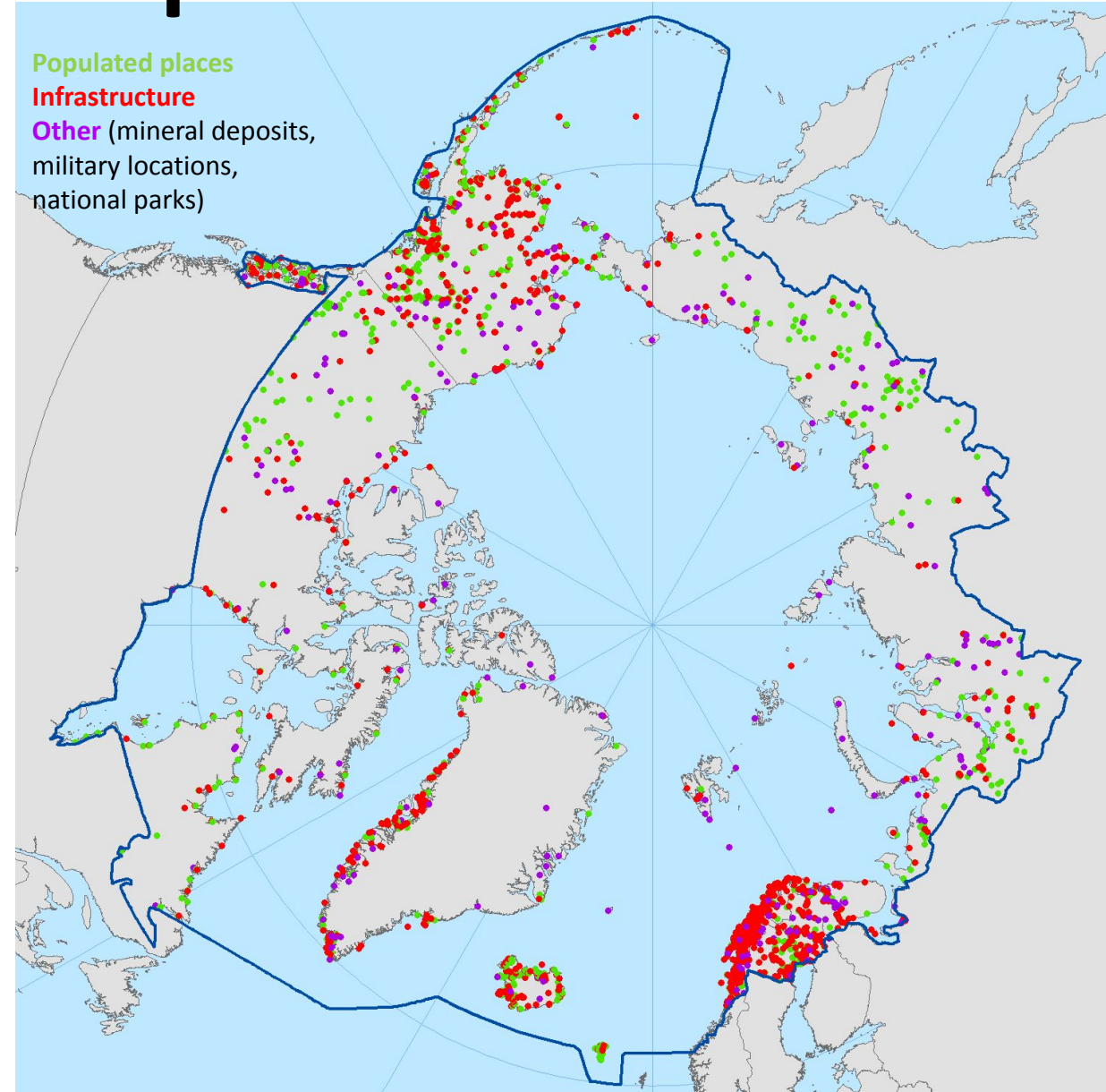
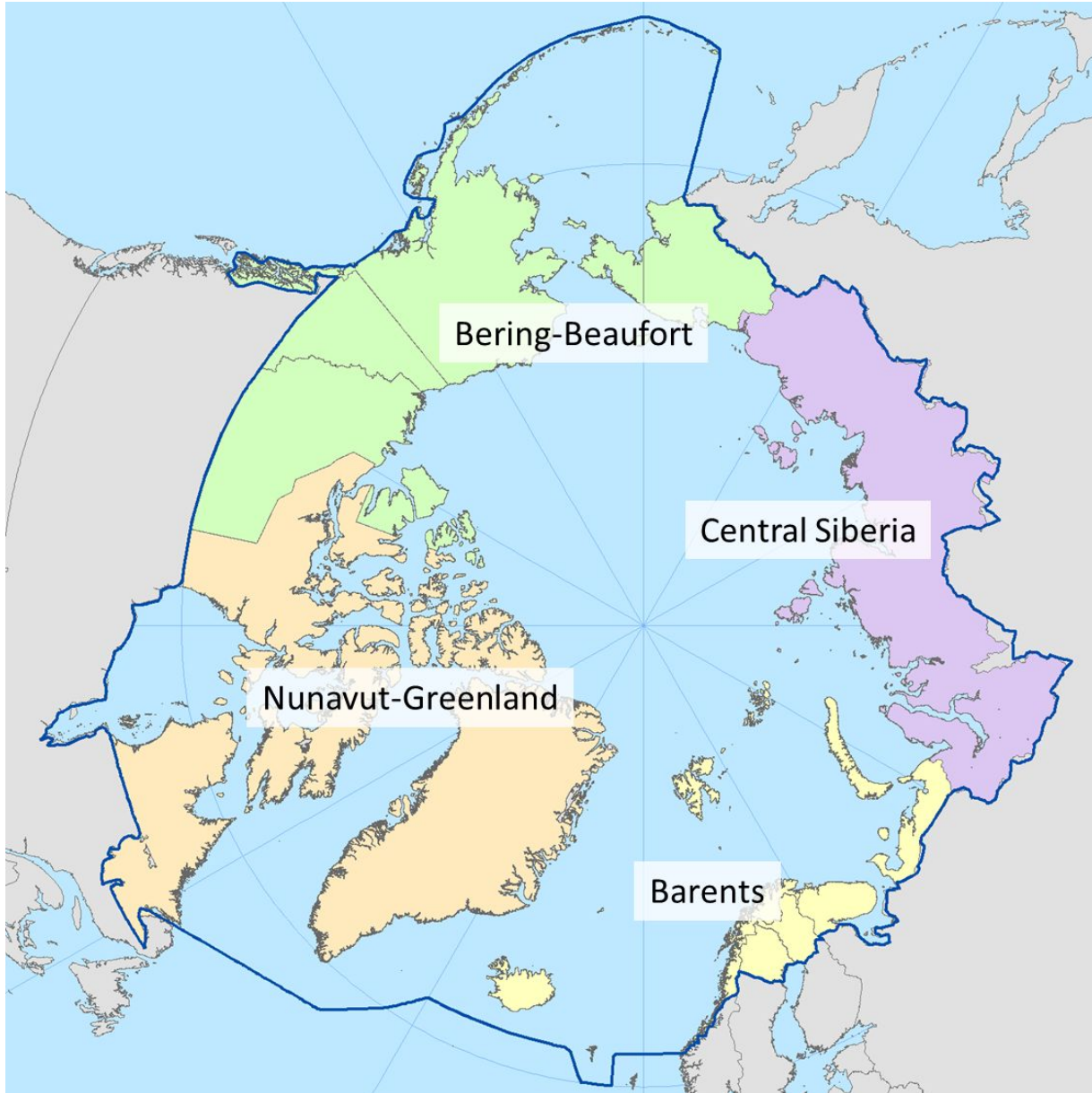
President, Mariadi Ltd, Finland

Nadezhda Zamyatina

Moscow State University, Russia



# Loci of Development



Data acknowledgement: Nordregio, RAND, Wilson Center

“Many Arctics”

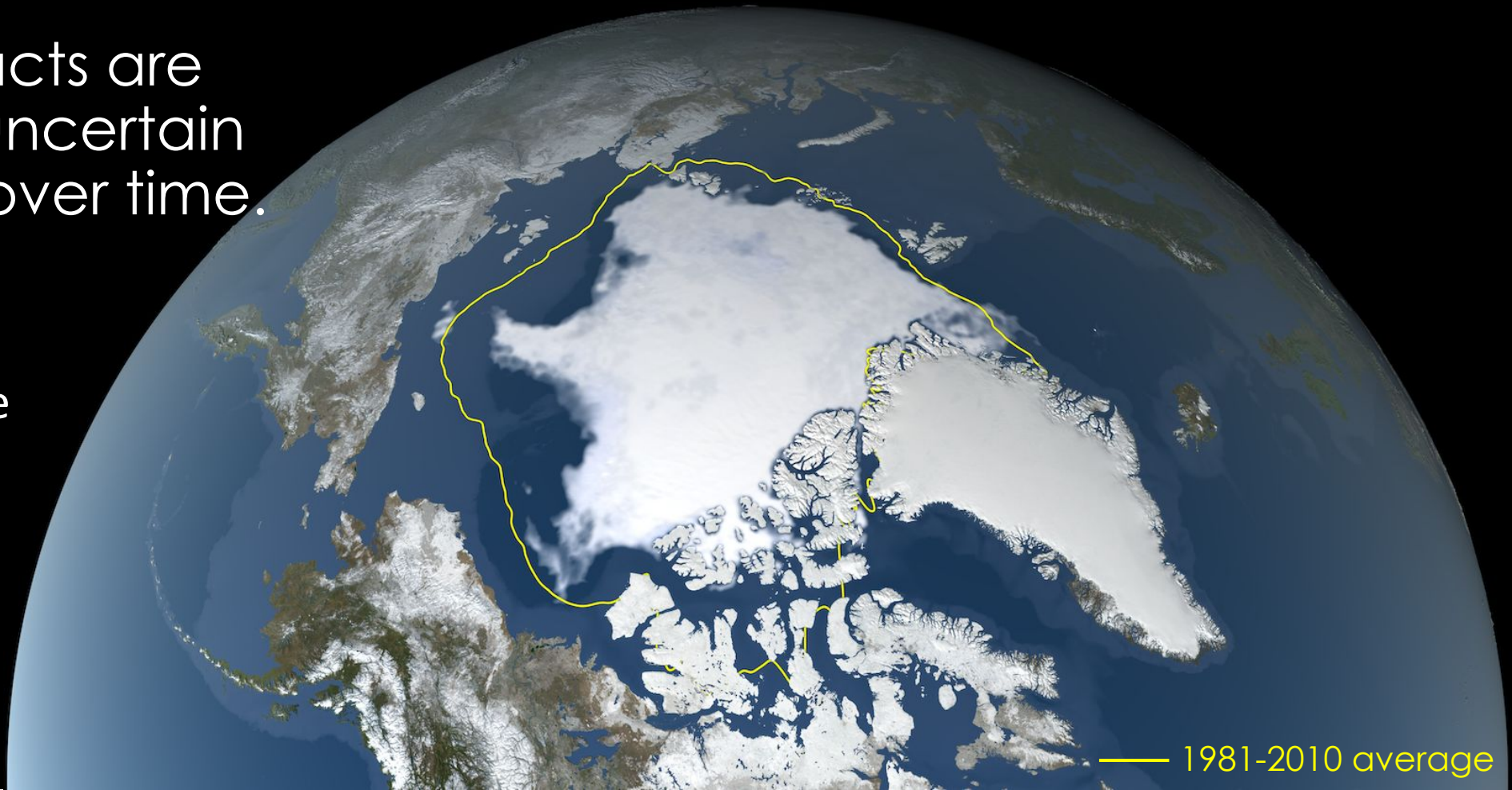
# Climate Scenarios

Expectations for a warming Arctic have sparked wide economic and geopolitical interests; but

Warming impacts are variable and uncertain in space and over time.

Need precipitation, temperature, sea ice concentration and thickness.

September 18<sup>th</sup> 2022  
4.67 million km<sup>2</sup>





# Transportation Accessibility

2021 Northern Sea Route Ship Traffic



Arctic Ocean

Atlantic Ocean

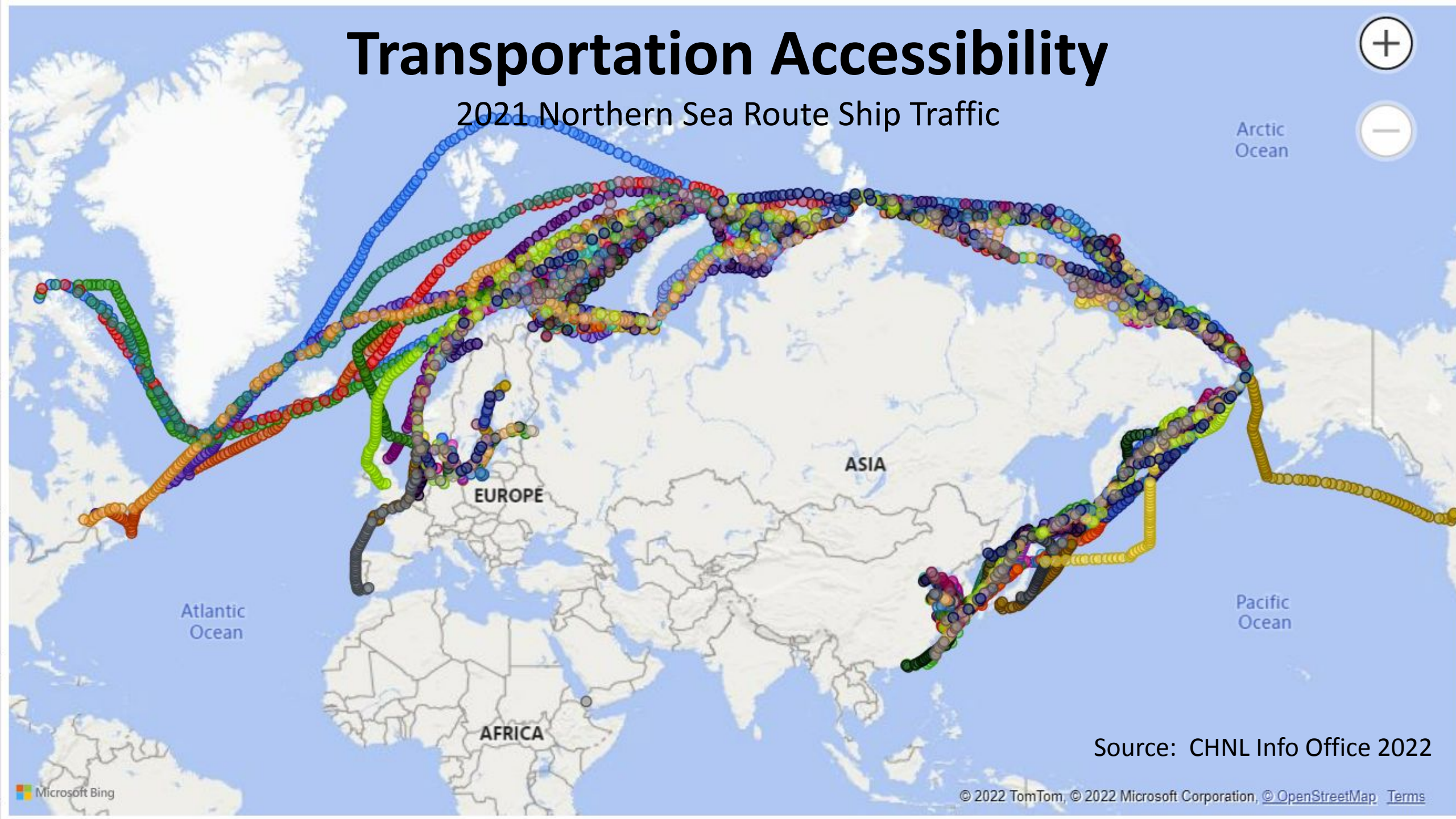
Pacific Ocean

EUROPE

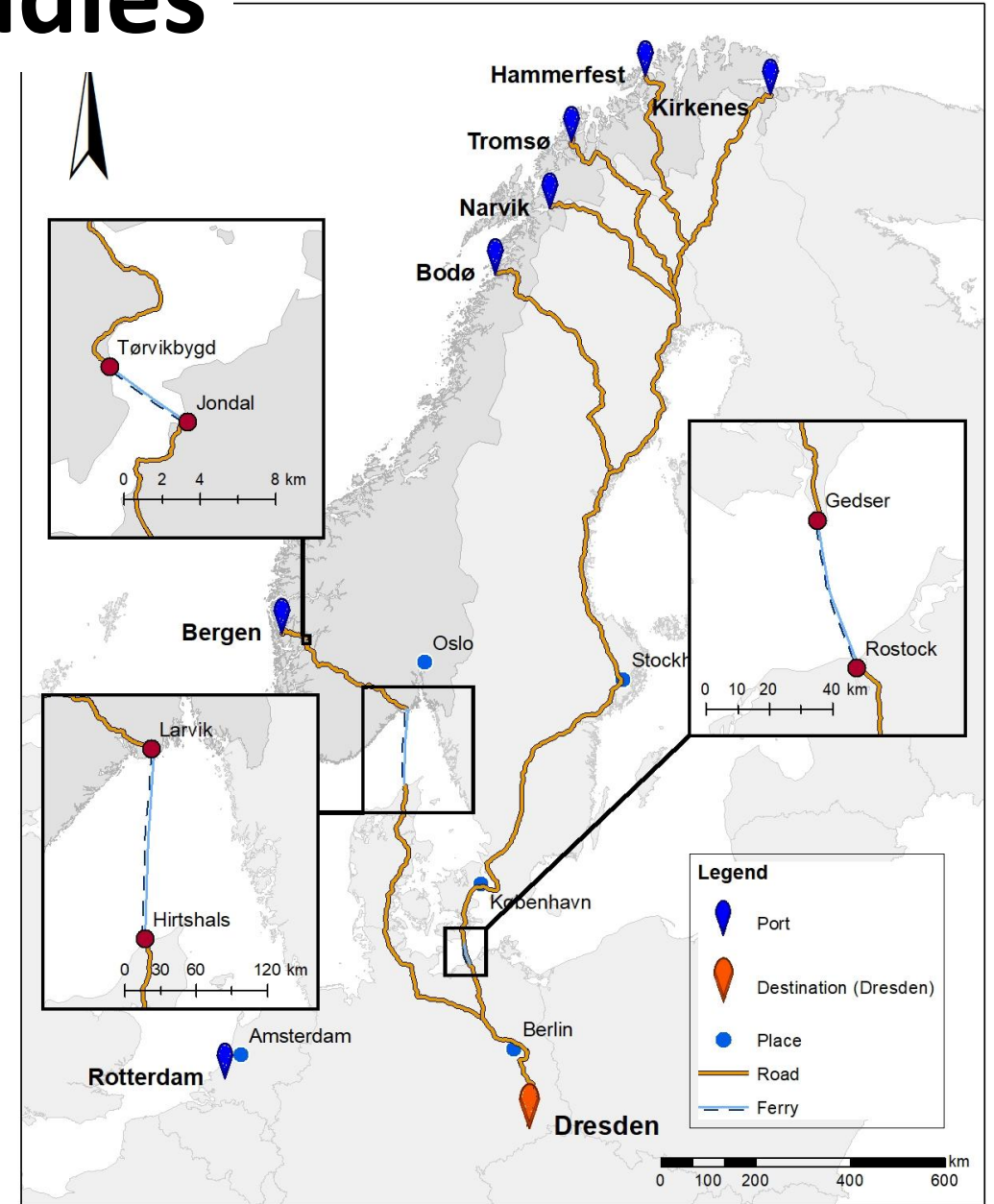
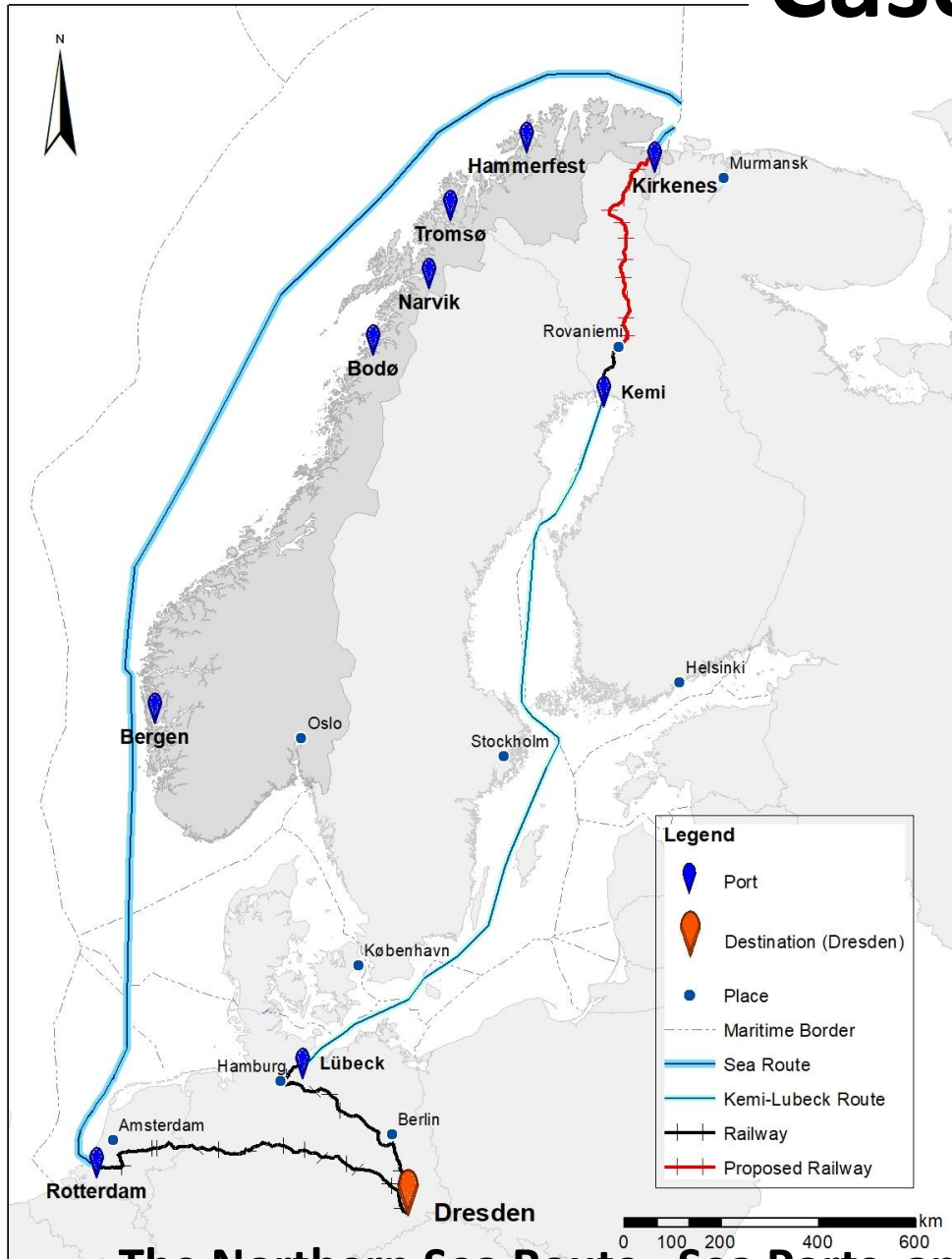
ASIA

AFRICA

Source: CHNL Info Office 2022



# Case Studies



The Northern Sea Route, Sea Ports, and economically viable paths to Central Europe



# Summary

- Loci of Development: Interviews, Delphi Surveys, compilation of data.
- Climate Scenarios: Analysis of climate model simulations and comparison to observations. Lake and river ice models.
- Transportation Accessibility: Shipping and ice road assessments.
- Case Studies: Kirkenes contacts.
- Make use of International Reference Group.
- The final year will be focused on integration (WP5).