GloboLakes: Overview

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Stephen Thackery

Alex Elliot

Advisory Board Group

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- Geoff Codd (Honorary Professor: Dundee/Stirling)
- Margaret McGuiness (Scottish Water)
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The Aim

GloboLakes will investigate the global status of lakes and their responses to environmental change

- Lakes are sensitive sentinels of change
- Responses of individual lakes or populations of lakes vary in time and space
- **What controls the differential sensitivity of lakes to environmental change?**

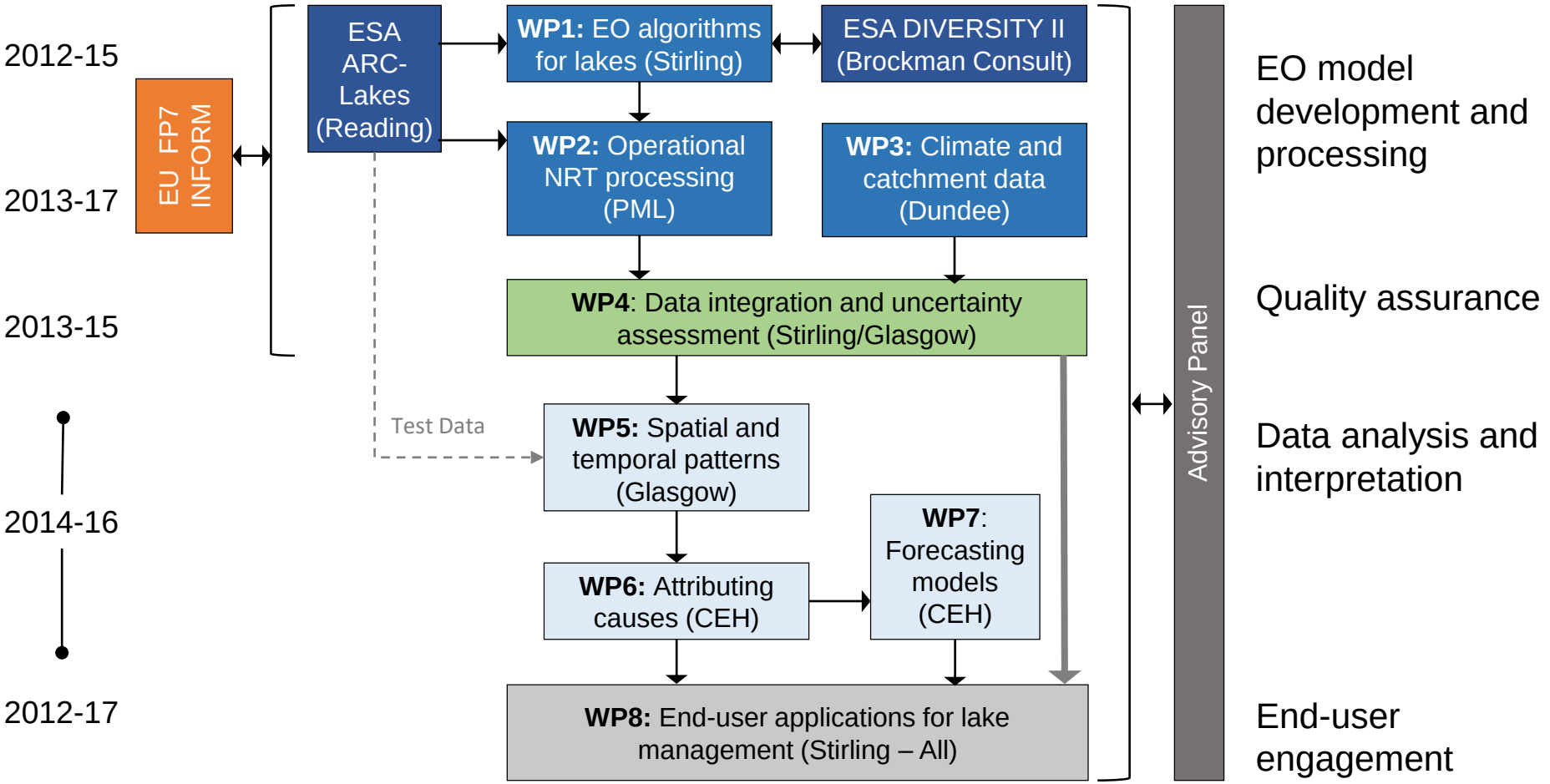
CLIMATE

Blooms Like It Hot

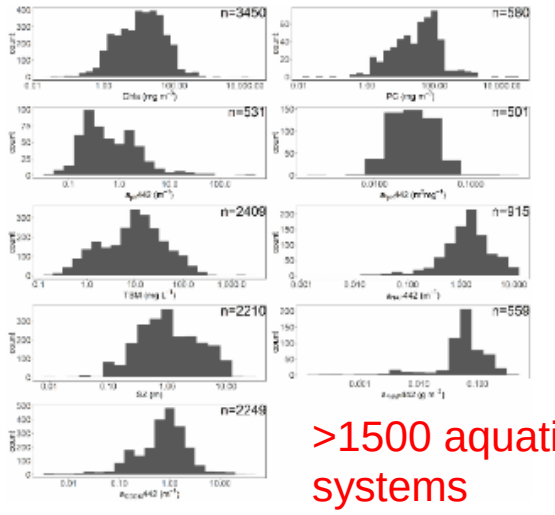
Lakes and reservoirs as sentinels, integrators, and regulators of climate change

Lakes as sentinels of climate change

The Approach Flow Diag

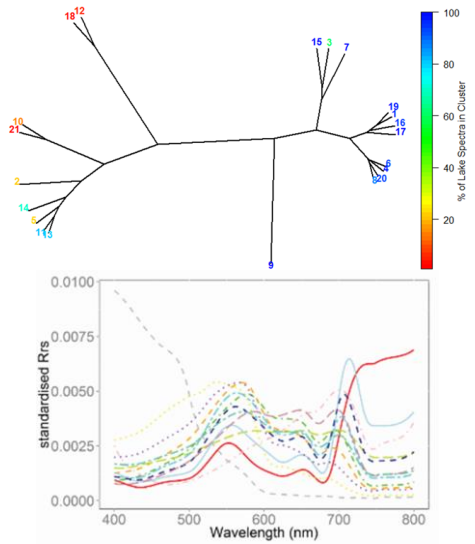


The Approach - flow

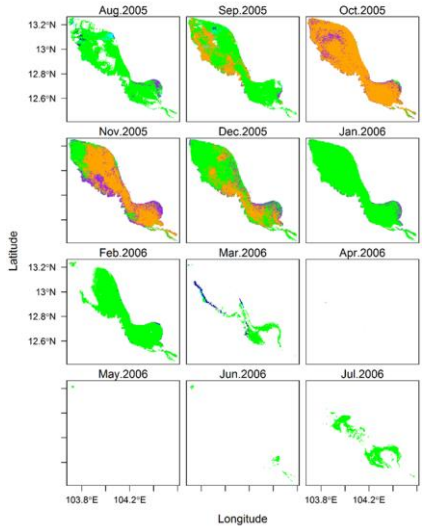


>1500 aquatic systems

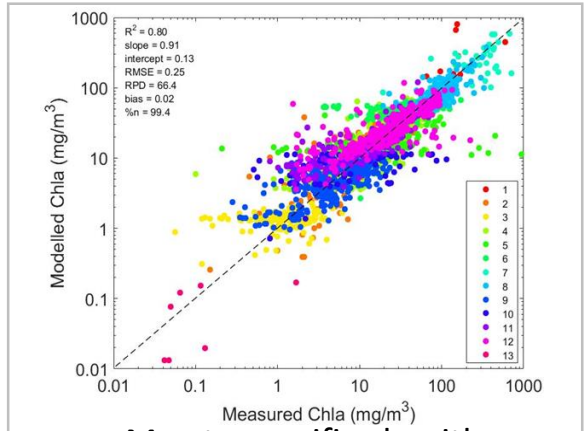
LIMNADES database limnades.org



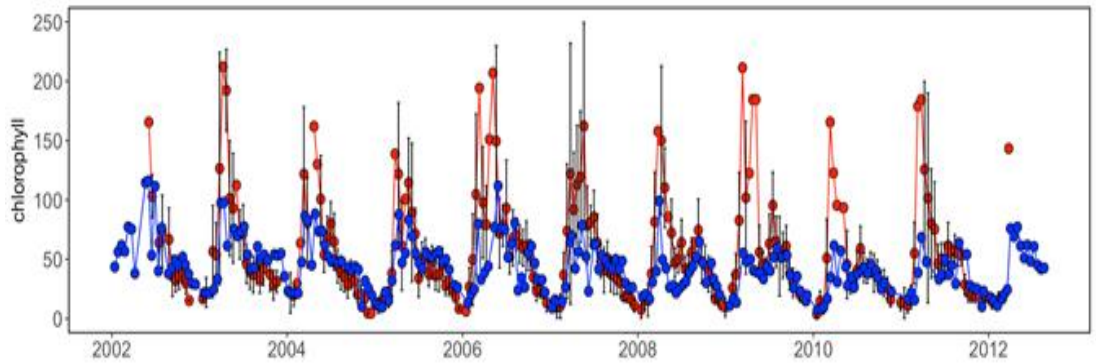
Optical diversity - OWT



Map to MERIS time series

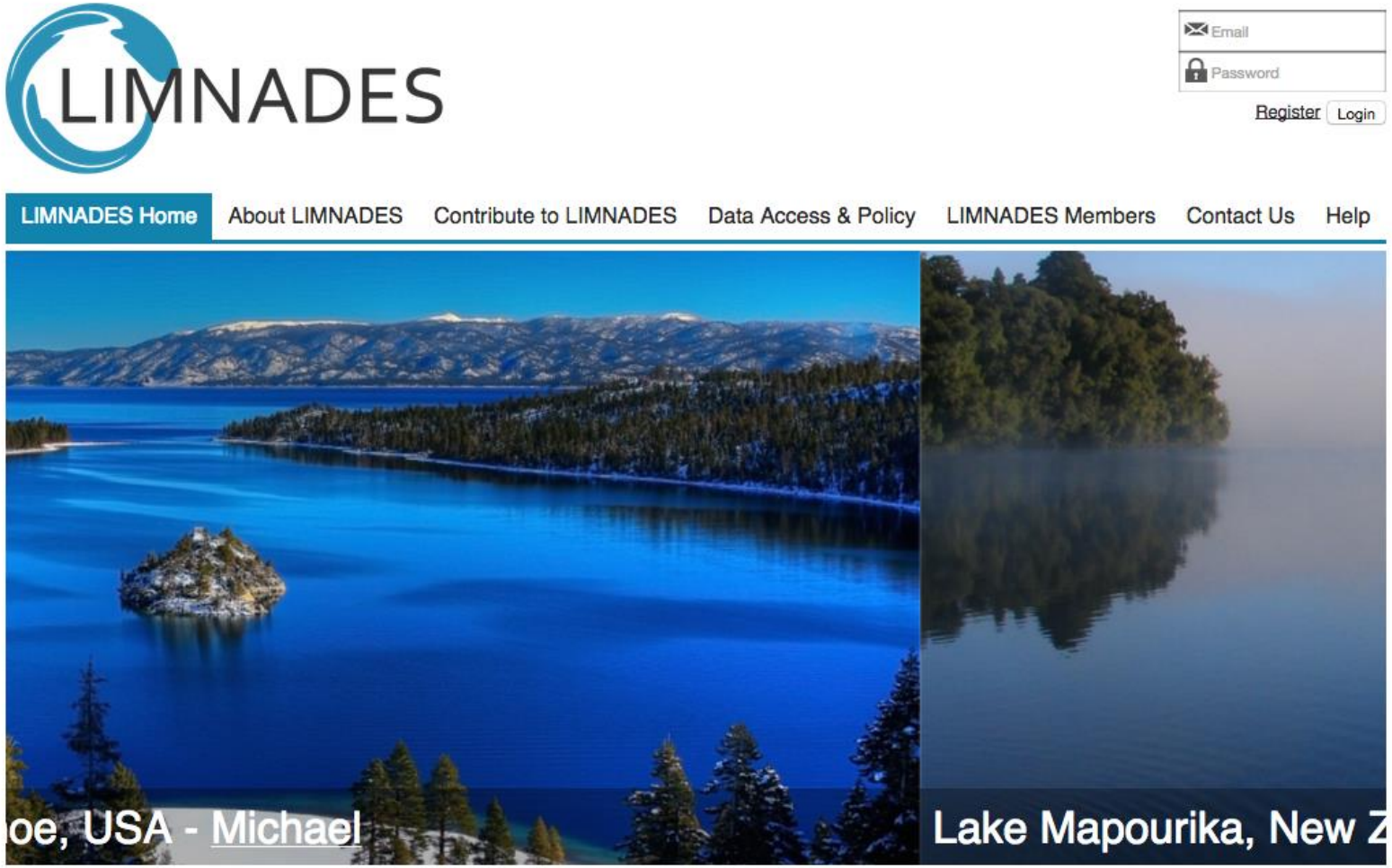


Map to specific algorithm



Produce time series without discontinuities

LIMNADES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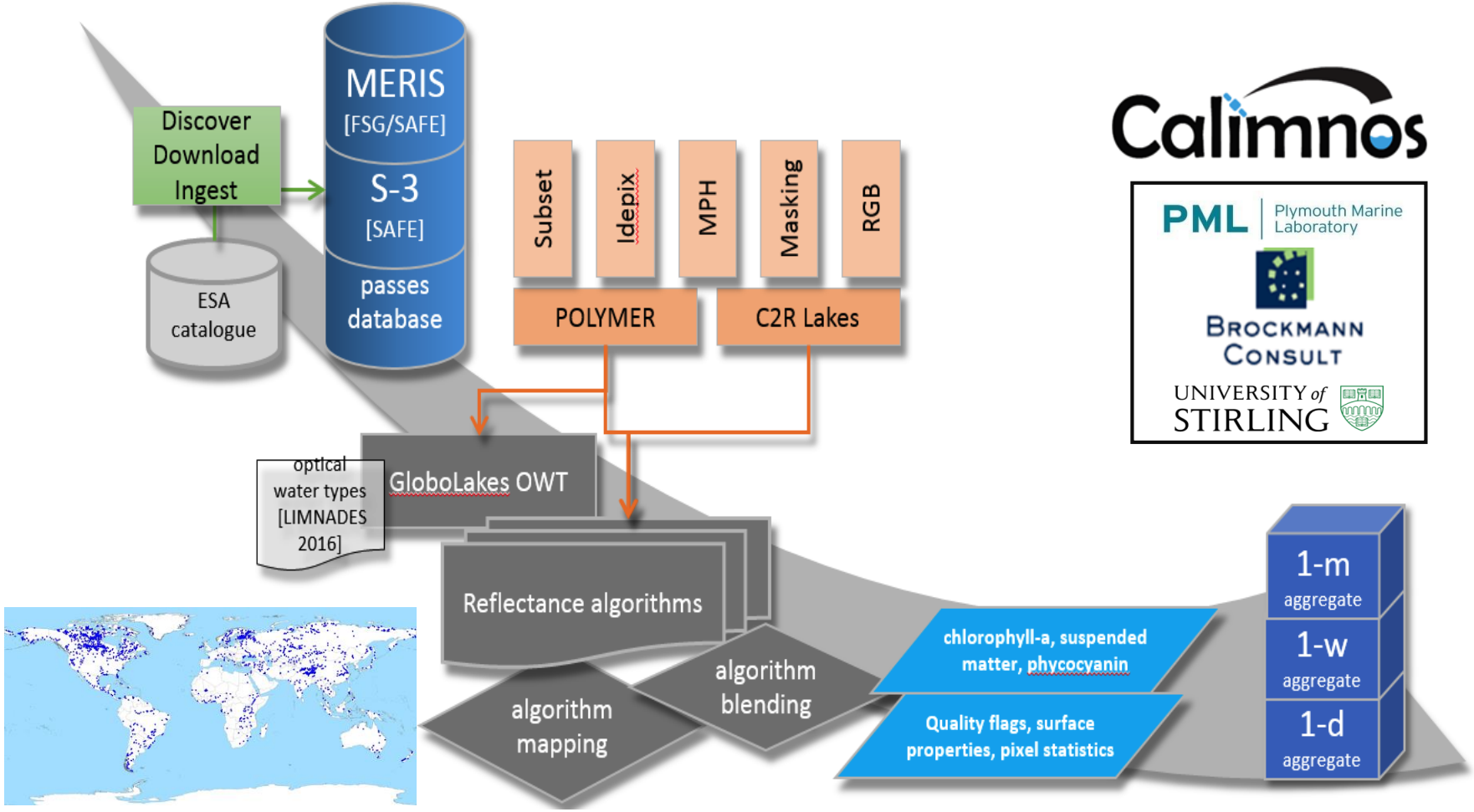
The Calimnos processing chain

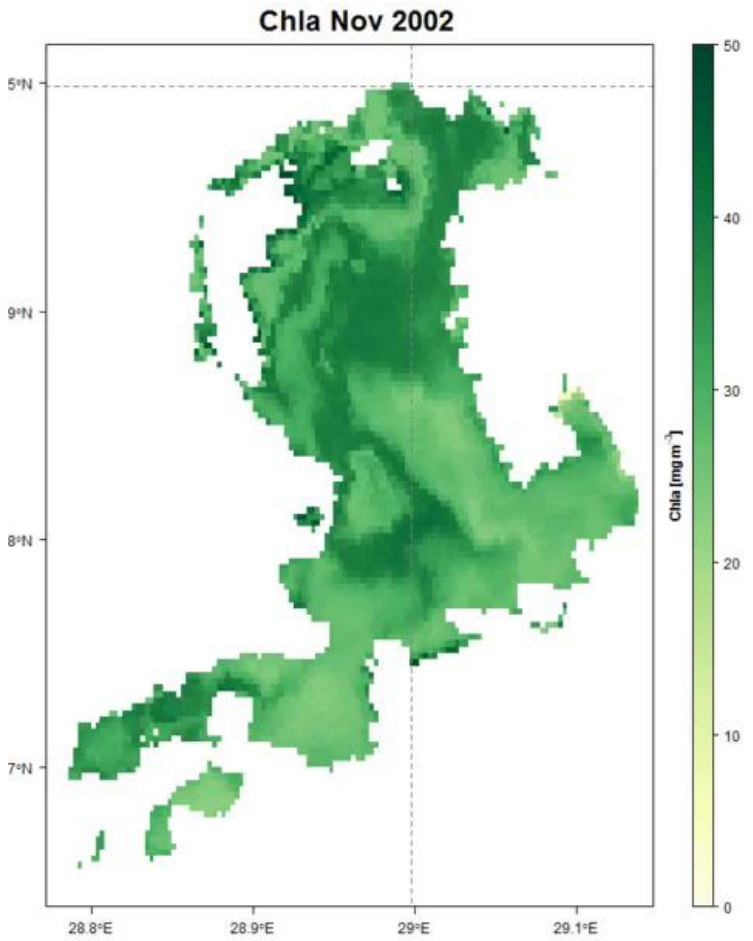


Calimnos

PML Plymouth Marine Laboratory

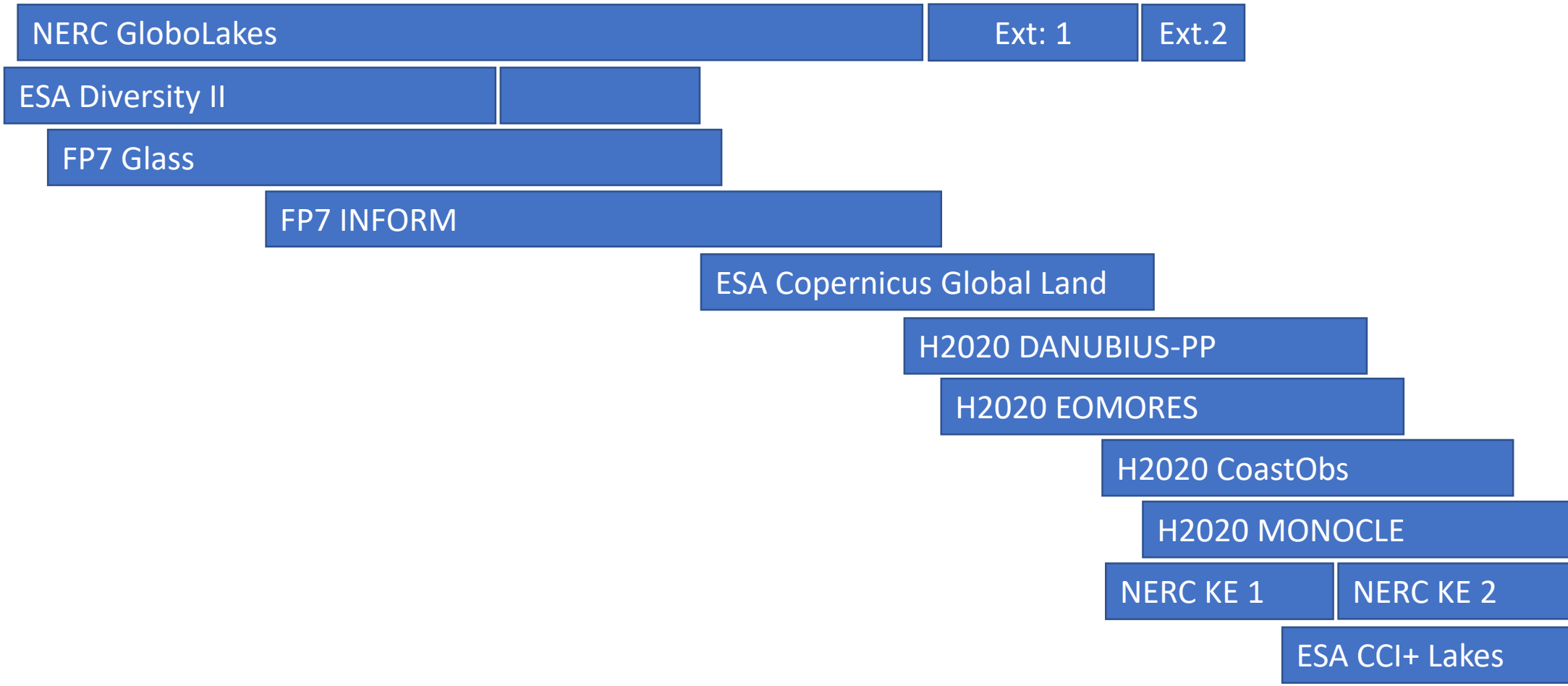
Brockmann Consult

University of Stirling



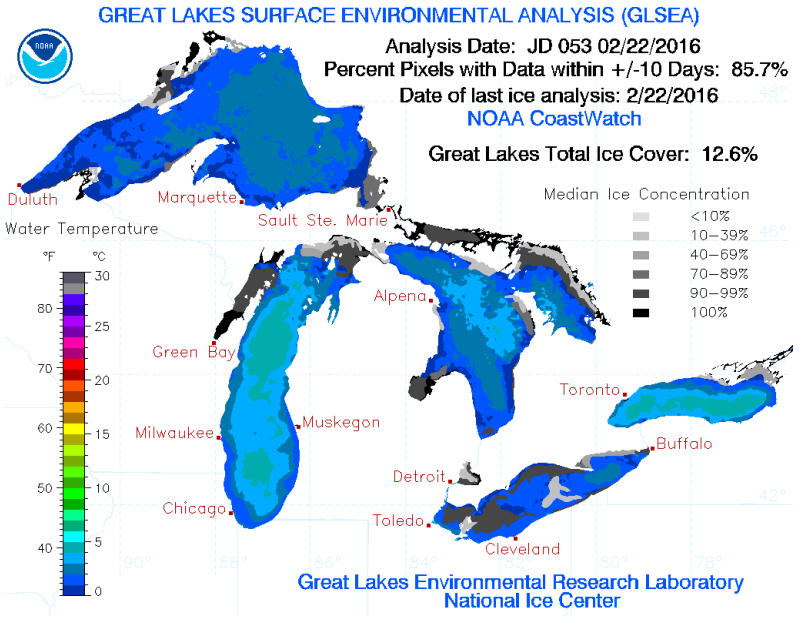
Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL | University of Dundee | University of Glasgow | PML Plymouth Marine Laboratory | University of Reading | University of Stirling

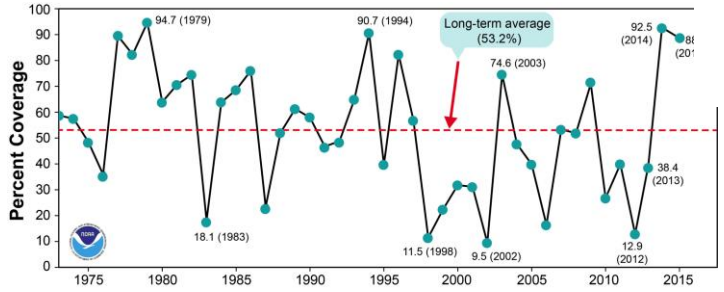
Related and ongoing projects and programmes



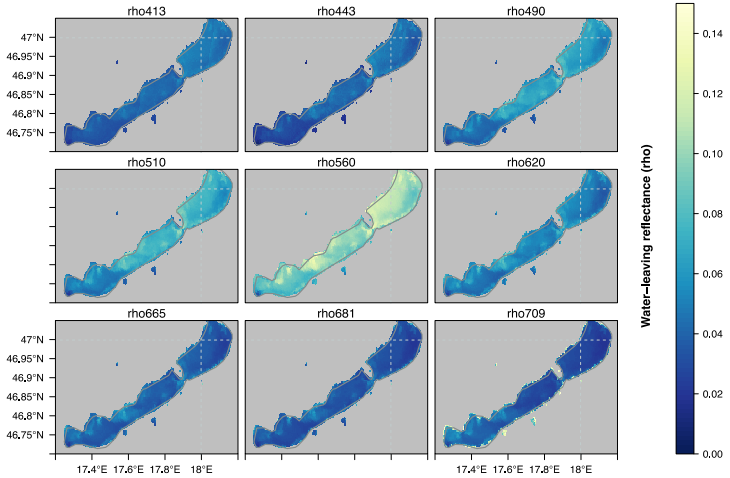
The Lake ECV: Redefined for GCOS

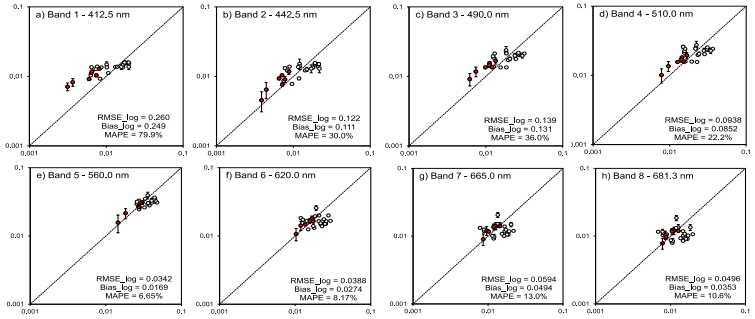
i) Lake Ice Cover (LIC)



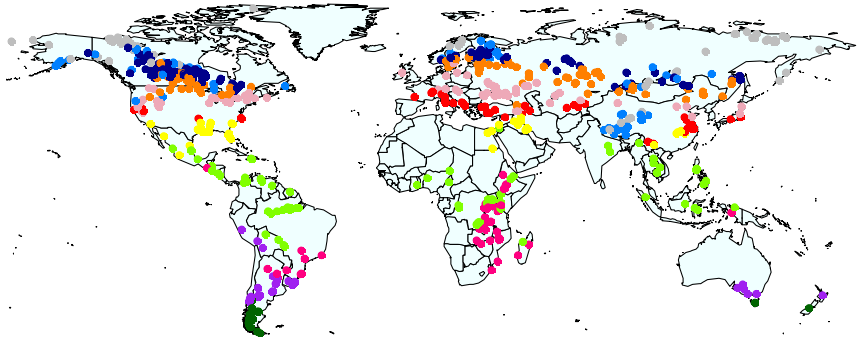


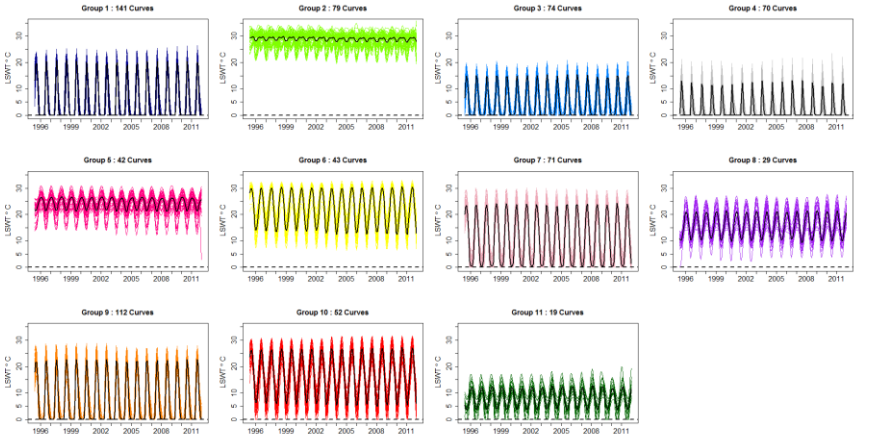
ii) Lake Water Leaving Reflectance (LWLR)





iii) Lake Surface Water Temperature (LSWT)

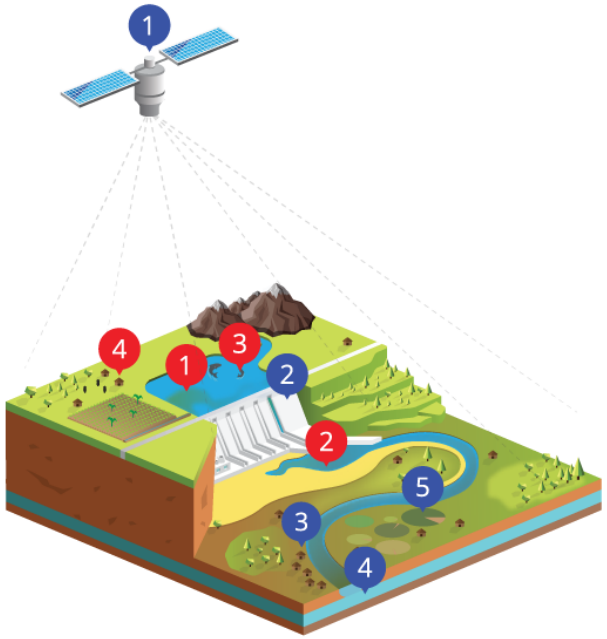




Global Challenges

The Intractable Challenge: *Water for all in an uncertain world: Managing conflicts in water use and enhancing sanitation to alleviate poverty and to enable resilient and sustainable communities*

6 CLEAN WATER AND SANITATION

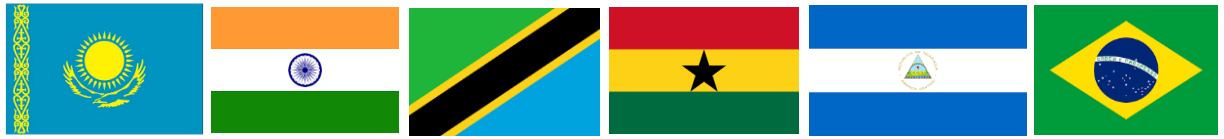


Challenges

1. Water Quality & Sanitation
2. Water Quantity & Transboundary Supply
3. Diversity of Food
4. Water and Health

G-WOSH approach

1. Exploiting World Leading Observation Capability
2. Implementing Smart Sensors & citizen science
3. Developing Knowledge Partnerships
4. Challenge led modelling
5. Implementing Solutions (behavioural to engineering)



Thank you

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