

Water Quality Information for the Benefit of Society

Earth Observation of inland and coastal water quality: recent developments, priorities & public engagement

29-31 August 2018, University of Stirling, Stirling, UK

a joint meeting co-organised by [GEO AquaWatch](#) & the [NERC GloboLakes](#) project

GEO AquaWatch and GloboLakes invite contributions to a workshop from the developer and user communities of Earth Observation (EO) data in inland and coastal environments.

Inland and near-shore coastal environments deliver multiple ecosystem services that benefit society, including food, water, energy, navigation and recreation resources that contribute to our economies, whilst also being crucial to regional and global-scale biogeochemical cycles. Freshwater availability is ranked among the greatest threat to global economy, and yet only a fraction of global inland water systems are routinely monitored for water quality.

The United Nations development agenda now fully recognises the importance of managing water resources to reach sustainable development goals (SDG 6, and related) and fosters collaboration across countries. Global Climate Observing System (GCOS) also recently deemed satellite-derived lake temperature, ice cover, and water-leaving reflectance as Essential Climate Variables. Data collection by EO satellites is expanding, and its suitability for observing inland and near-coastal water bodies makes remote sensing a valuable source of data on water quality and ecosystem condition at local and global scales. The workshop marks the culmination of the six-year GloboLakes project funded by the UK Natural Environmental Research Council, and featuring the latest applications of EO to inland and near-shore coastal waters at local, regional and global scales and contributions to improved water management, climate studies, and achieving SDGs. We will foster discussions of data and technology challenges, linkages between EO data providers and stakeholders, community-based water monitoring, and future GEO AquaWatch activities. The workshop will have presentations from many international projects and partnerships, providing unique opportunity to engage with the international water quality EO community.

Logistics: When: 29-31 August 2018

Where: Stirling UK (~30 miles from Edinburgh airport)

Registration: Cost of Accommodation and Meals £85 per day

Please Click [HERE](#) to register and book and pay accommodation and meal

Deadline 31st July 2018.

Organising Committee:

Andrew Tyler: University of Stirling, UK
Evangelos Spyarakos: University of Stirling, UK
Steve Greb: GEO AquaWatch, USA
Carsten Brockmann: Brockmann Consult, Germany
Ghada El Serafy: Deltares, Netherlands
Douglas Cripe: GEO Secretariat, USA
Merrie Beth Neely: GEO AquaWatch, USA

DRAFT Programme

28th August 2018 Arrivals

5pm	AquaWatch Pre-Meeting: GEO AquaWatch Participants
7pm	Welcome Dinner and Reception

29th August 2018 Day 1 - GloboLakes

9:00-9:30	Registration and Coffee
Welcome	
9:30-9:35	Welcome: Vice Chancellor
9:35-9:40	Introduction and House Keeping: Andrew Tyler
9:40-9:50	AquaWatch Overview: Steve Greb
Session 1: GloboLakes: The Development Chair: Steve Greb	
9:50-10:00	GloboLakes: The Overview: Andrew Tyler
10:00-10:15	Optical Water Types and LIMNADES: Vagelis Spyarakos
10:15-10:30	Algorithm Development at the Global Scale: Water Quality: Peter Hunter
10:30-10:45	Lake Surface Water Temperature: Chris Merchant
10:45-11:00	Discussion
11:00-11:20	Tea and Coffee
Session 2: GloboLakes: Data Processing and Analysis Chair: Carsten Brockmann	
11:20-11:35	Near Real Time Data Processing and Calimnos: Stefan Simis
11:50-12:05	Estimating Drivers of Change: Mark Cutler
12:05-12:20	Dealing with Data Uncertainty: Claire Miller
12:20-12:35	Clustering Lake Responses to Environmental Change: Mengyi Gong
12:35-13:00	Discussion
13:00-14:00	Lunch
Session 3: GloboLakes: Understanding Change Chair: Paul DiGiacomo	
14:00-14:15	Status and Attribution of lake Water Quality: Laurence Carvalho
14:15-14:30	Global forecast of the sensitivity of lake phytoplankton to environmental change: Alex Elliott
14:30-14:45	Global seasonality of lake phytoplankton: Ellie Mackay
14:45-15:00	Predicting Lake Surface temperature dynamics: Stephen Maberly
15:00-15:20	Discussion
15:20-15:40	Tea and Coffee
Session 4: GloboLakes: Wrap Up Chairs: Andrew Tyler & Steve Greb	
15:40-16:00	Questions and Discussion
16:00-16:20	Summary, next steps and opportunities

17:00 DISTILLARY and Dinner

30th August 2018 Day 2- The Water Quality Community Forum

9:00-9:15	Introduction - Chair Paul DiGiacomo <i>10 minute lightning round talks, followed by topical posters & booth interaction and panel discussion with attendees</i>
Session 5: Partner Projects and Developments	
9:15-9:25	NERC Knowledge Exchange: EO in Industry and Regulation - Claire Neil/Andrew Tyler
9:25-9:35	H2020 EOMORES – TBD
9:35-9:45	H2020 Copernicus Global Land – TBD
9:45-9:55	H2020 MONOCLE – TBD
9:55-10:05	H2020 CoastObs – TBD
10:05-10:15	H2020 Coastal Water Data Cube – Carsten Brockmann
10:15-10:25	H2020 DANUBIUS-PP – Andrew Tyler
10:25-10:35	H2020 CyanoAlert – TBD
10:35-11:35	Tea and Coffee with posters and booth interaction
Session 6: H2020 Community Discussion Facilitator: Dekker and TBD	
11:35-12:30	Presenter Panel Discussion and Q&A.
12:30-13:30	Lunch
Session 7: Agency and International Program Lightning Talks	
13:30-13:40	GEMS Water – TBD
13:40-13:50	Water-related SDGs – Hoque/Cripe/Neely
13:50-14:00	UNESCO World Water Quality Portal - TBD
14:00-14:10	US CyAN project - Schaeffer
14:10-14:20	US CoastWatch – Paul DiGiacomo
14:20-14:30	CEOS EO for Aquatic Ecosystems Study - Dekker
14:30-14:40	Trophic state assessment of global inland waters using a MODIS-derived Forel-Ule index. - Shenglei Wang
14:40-14:50	Relevance of thermal forcing for optical remote sensing of stratified lakes - Daniel Odermatt
14:50-15:00	Spatial and Temporal Perspectives on Multiple Stressor Impacts Spanning Inland to Coastal Ecosystems - John Schalles
15:00-15:45	Tea and Coffee with poster and booth interaction
Session 8: Community Discussion Facilitator: Blake Schaeffer and Nicki Villars	
15:45-16:30	Presenter Panel Discussion and Q&A. Discuss challenge/opportunity
Session 9: GEO AquaWatch Setting the Scene for Day 3 Co-chairs: Steve Greb, Paul DiGiacomo, Arnold Dekker	
16:30-17:20	Introductions, Review of the GEO model, GEO AquaWatch Progress
19:00	Dinner
20:30	CEILIDH

31st August 2018 Day 3- GEO AquaWatch

This day is a working session to engage the Steering Committee and Community in review, discussion and planning activities for the coming year. The day is split into two parts. The first session will focus on building GEO AquaWatch's flagship water quality information service and discuss an action plan to fund and complete work packages 3-7. The second session will identify new issues/activities and further discuss the action plan to fund and address both the WQIS and new activities. The final session, chaired by the entire Steering Committee, will assign tasks for the GEO AquaWatch Annual Workplan.

9:00-9:10	Recap challenges and opportunities from previous 2 days. How can the community activities presented over the past two days help GEO AquaWatch reach its goals? How can GEO AquaWatch help the community reach their goals?
Session 9: Water Quality Information Service (WQIS) Plenary Group Discussion	
9:10-10:30	Review of Work Packages 3-7. Detailed group discussion of the WQIS and tasks to completion for a global product. (Facilitators: Ghada El Serafy and Carsten Brockmann)
10:30-11:00	Tea and Coffee
Session 10: Working Group Breakouts – Working Group Co-Chairs	
11:00-11:50	How can GEO AquaWatch address the identified action & knowledge gaps? What new issues can/should GEO AquaWatch address in next 12-18 months and how do we do it?
11:50-12:00	Break
12:00-13:00	Working lunch (continuation of Working Group Breakouts)
13:00-13:15	Break
Session 11: Annual Work Plan & Assignments Plenary Chairs: Entire Steering Committee	
13:15-13:40	Work Group Co-Leads Report Out – 5 mins each
13:40-15:00	Steering Committee Feedback and Plenary Discussion: How will identified knowledge/action gaps shape GEO AquaWatch Annual Workplan? Build a Framework to implement agreed upon tasks, schedule next 12-18 months, and assign people to tasks.
15:00-15:10	Farewell Thoughts