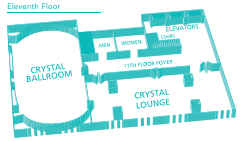

TOOLS TO HARNESS THE POTENTIAL OF EARTH OBSERVATIONS FOR WATER QUALITY REPORTING AND MANAGEMENT

Co-Chairs: Blake Schaeffer (EPA/Office of Research and Development) and Vittorio Brando (Italian National Research Council, CNR)

Earth observation technology has the potential to accelerate the engagement of communities and managers in the implementation and performance of best management practices. Satellite technology has proven useful in coastal waters, estuaries, lakes, and reservoirs, which are relevant to water quality managers. There is the potential to provide water quality assessments, thus providing new decision analysis methodologies and temporal/spatial diagnostics. Earth observation data provides an opportunity to assess current conditions and trends of these environments in response to key environmental and climatic impacts. However, delivery and communication of management relevant water quality information from earth observation data is typically limited between the scientific community and water quality managers. Water quality managers are identified as anyone who is responsible for protecting the beneficial uses of water and are assumed the primary decision maker in this session. Water quality includes the biological, physical, and chemical characteristics required to maintain beneficial uses. Discussions will range from new decision analysis methodologies, to improved temporal/spatial diagnostics, and environmental reporting tools that may improve the delivery and communication of earth observation data to water quality managers and the public.

Proposed questions:
1. How can we overcome barriers to sharing in situ calibration and validation data?
2. How do we see the field of water quality earth observation advancing in the next 5 years?
3. What level of accuracy is needed for the monitoring of lake water quality?
4. How mature are the current in-water and atmospheric correction algorithms over inland and near-shore waters?
5. How to build and maintain user confidence in and encourage uptake of EO data?
6. How can resource scarce monitoring programs leverage the onslaught of new data and assessment methods?
7. What are potential policy barriers and or ways policy can encourage the adoption of new methods that leverage sensor data?
8. What are some opportunities to better leverage citizen science with regards to leveraging remote sensing data for water quality and what should the states and federal roles be?
9. Remote sensing derived products and indicators required for reporting are different. Can we develop a strategy to foster communication between EO scientists and users? How can we technically support this dialogue?

9:30-9:40	**Introduction and overview** Blake Schaeffer (EPA) and Vittorio Brando (CNR)
9:40-9:50	**Uses and challenges of earth observation data for inland water quality: a GloboLakes perspective.** Evangelos Spyrakos (U. Stirling)
9:50-10:00	**Earth observation in support of reporting to European legislation on surface water quality; technical offers and uptake by users.** Carsten Brockmann (Brockmann Consult GmbH)
10:00-10:30	**Moderated Community Discussion**
10:30-10:50	**Break**
10:50-11:00	**Water quality assessment frameworks for the 21st Century. Connecting the dots and adapting to change.** Tod Dabolt (EPA/Office of Water)
10:50-11:00	**Development of a GEO global water quality monitoring and forecasting service.** Steve Greb (Wisconsin Dept. Natural Resources)
11:00-11:10	**Water quality assessment frameworks for the 21st Century. Connecting the dots and adapting to change.** Tod Dabolt (EPA/Office of Water)
11:10-11:20	**Changing the global water quality conversation: from Earth observation to action.** Francis Gassert (World Resources Institute)
11:20 - 12:15	**Moderated community discussion & formulation of recommendations**