GLEON 13
Climate Sentinel Working Group
Progress Report

Mission: To explore the use of ***lakes as sensors in the landscape*** in order to interpret and quantify what their ***sentinel responses*** are telling us about the ***biotic consequences*** of climate change.

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Four Climate Sentinel Subgroups:

1) Lakes as Sensors (LaS) MS Subgroup:

    MISSION: Sharpen tools & formalize concepts dealing with lakes as sentinels of climate change and apply to data

    CHAMPION: Craig Williamson & Jasmine Saros

    PROJECT: Write a manuscript on lakes as sentinels of climate change (NOT a review!).

2) NSF Macrosystems Biology Subgroup:

    MISSION: Secure funding for GLEON climate sentinel efforts

    CHAMPION: Craig Williamson & Jasmine Saros

    PROJECT: Submit a proposal to USA National Science Foundation Macrosystems Program

3) Paleo subgroup:

    MISSION: Explore how merging contemporary and paleolimnology can enhance our understanding of climate sentinels.

    CHAMPION: Jasmine Saros

    PROJECT: Deploy sediment traps on thermistor chains of GLEON buoys

4) Modeling subgroup:

    MISSION: Use numerical experiments & simulations to explore, test, predict climate driven sentinel responses.

    CHAMPION: Nihar Samal

    PROJECT: Modeling the most effective sentinel responses of reservoirs

Lakes as Sensors (LaS) MS Subgroup:

MISSION: Sharpen tools & formalize concepts dealing with lakes as sentinels of climate change and apply to data

CHAMPIONS: Craig Williamson & Jasmine Saros

G13 PARTICIPANTS: Taylor Leach, Lesley Knoll, Bill Renwick, Scott Higgins, Bruce Hargreaves, Jennie Brentrup, Nihar Samal, David White, Hilary Smith, Kristin Strock, Lauri Arvola, Liz Ryder, Mary Dillane, Jasmine Saros, others expressed interest and will follow up.

PROJECT: Write a manuscript on lakes as sentinels of climate change (NOT a review!).

PROGRESS: Working on basic terminology, questions, approach, and identifying datasets.

Macrosystems Biology Subgroup

MISSION: Secure funding for GLEON climate sentinel efforts

CHAMPIONS: Craig Williamson & Jasmine Saros

G13 PARTICIPANTS: Taylor Leach, Lesley Knoll, Bill Renwick, Bruce Hargreaves, Scott Higgins, Jennie Brentrup, David White, Hilary Smith, Kristin Strock, Jasmine Saros, Karin Sparber.

PROJECT: Submit a proposal to USA National Science Foundation Macrosystems Program in collaboration with other GLEON investigators who approach funding sources in their countries.

PROGRESS: A subgroup has a well-formulated proposal in close to final form for submission to the NSF MSB program. We are reaching out to people at other GLEON sites worldwide with an interest in pursuing funding for coordinating data collection with DOC and optical sensors to understand long-term changes in DOC and sentinel responses of lakes and reservoirs.

Paleo Subgroup:

MISSION: Explore how merging contemporary and paleolimnology can enhance our understanding of climate sentinels.

CHAMPION: Jasmine Saros

PARTICIPANTS: Lisa Doner, Kristin Strock, Karin Sparber, (Evelyn Gaiser)

PROJECT: Deploy sediment traps on thermistor chains of GLEON buoys.

PROGRESS: We are currently designing the project and will be contacting some sites over the next year to inquire whether this would be possible at various sites.

Modeling Subgroup:

MISSION: Use numerical experiments & simulations to explore, test, and predict climate driven sentinel responses.

CHAMPION: Nihar Samal

PARTICIPANTS: Ken Chiu, Liz Ryder, John Lenters

PROJECT: Modeling the most effective sentinel responses of reservoirs to climate change

PROGRESS: Considering reservoirs in New York state watersheds: Ashokan reservoir, Kensico, Rondout and Schoarie reservoir (4 reservoirs). Buoys are available in these reservoirs (6-hour interval profiles of temperature, conductivity, Turbidity and Dissolved Oxygen).

1.   Application of 1-D model driven by various climate scenarios as well as baseline scenario to predict the reservoir stratification characteristics.

2.   Use of Lake Analyzer to derive the indices and look into the responses of these indicators with respect to climate scenarios

3.   Estimation of production rates from the high frequency buoy data

4.   Comparison of morphometry with reservoir indices

Further Information:

Contact Craig or Jasmine if you want to be involved in any GLEON climate sentinel working group efforts:

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