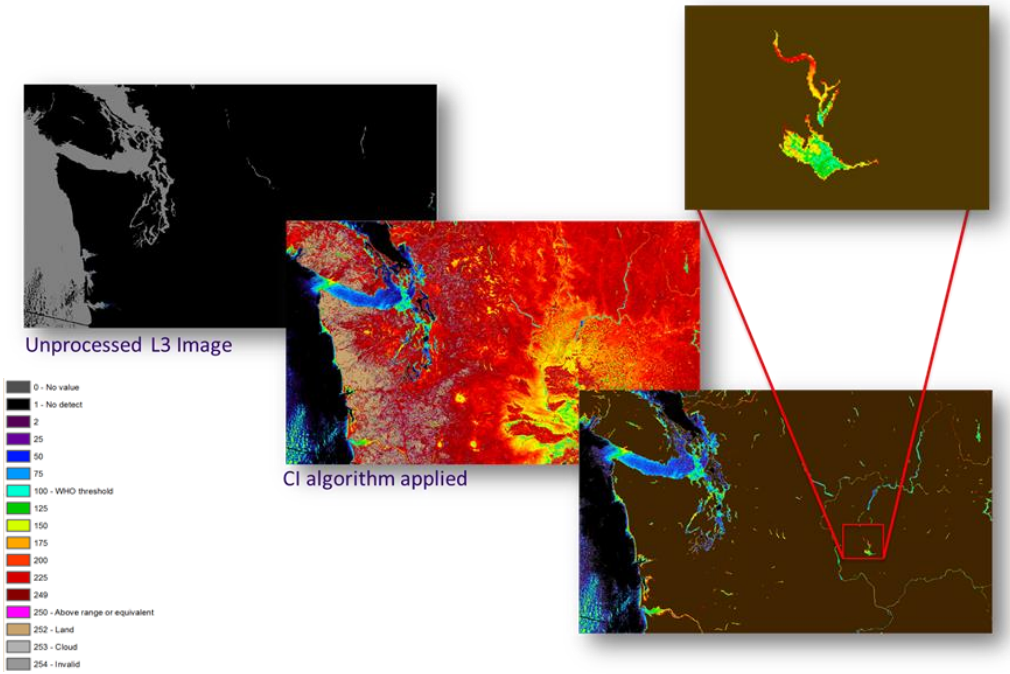
Satellite Imaging of HABs in Freshwater Lakes

Objective: to improve the understanding of the extent and occurrence of harmful algal blooms (HABs) in lakes using multispectral image analysis.

Approach: Use satellite imagery to perform retrospective analysis of selected areas.



MERIS satellite image data from NOAA/NASA

Cyanobacteria contain photo pigments that absorb differently than chlorophyll. This difference can be captured by some multispectral cameras and satellite images.

Cyanobacterial Index CI (Stumpf, Wynne,2011)

- identifies high concentrations of chlorophyll
- able to distinguish cyanobacterial blooms from other blooms

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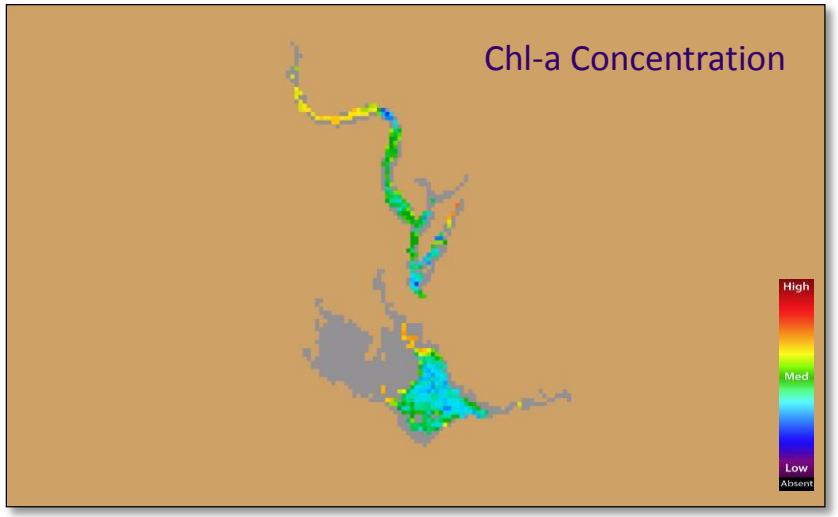
Study Area: Moses Lake/Potholes Reservoir

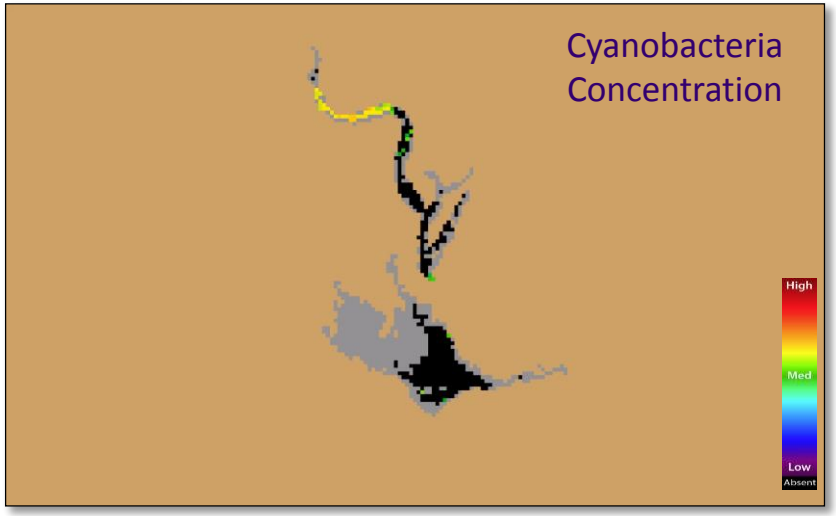
Values Extracted from MERIS Satellite Products

Timeframe: May – September 2009

Month: May



Month: August



Observations:

- **Cloud cover is problematic for imagery in Western Washington**
- **Includes all cyanobacteria; not just toxic types**
- **Validation relies on published studies.**

Next Steps:

- **Complete evaluation using available data for Washington Lakes (with a focus on Lake Spokane and Vancouver Lake)**
- **Updated satellite data is becoming available for new analysis (OLCI)**

Questions/Comments:

Contacts:

Dr. Andy James
jamesca@uw.edu

Melanie Rogers
mrogers5@uw.edu