## Harmful Algal Blooms After Wildfires: Monitoring and Remote Sensing Strategies

Wildfire Impacts and Opportunities in Rogue Basin Drinking Water Supplies Jan. 13, 2021 Presenters: Dan Sobota, Yuan Grund, Erin Costello, and Brian Fulfrost



#### Cyanobacterial Harmful Algal Blooms in Oregon

- Excessive growth of specific algae capable of producing toxins
- Increasingly public and ecosystem health concerns across the state
- Impacts drinking water, recreational opportunities, agricultural production, fisheries, local economies, and aquatic habitats











State of Oregon DEQ Department of Environmental Quality

### Harmful Algal Blooms and Wildfire

- How might the wildfires affect freshwater harmful algal blooms in burned areas?
- What should DEQ and other agencies do to address wildfire impacts on harmful algal blooms?
- What are some tools and resources available to help predict and track harmful algal blooms?



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#### What causes Harmful Algal Blooms?

- High nutrient inputs
- Warm temperatures
- Slow-moving, stagnant, or stratified water
- Alteration of aquatic food webs





#### Potential wildfire impacts

- Increased sediment erosion and ash runoff
- Runoff of urban and wildland fire fighting chemicals
- Loss of riparian shade
- Runoff and decomposition of organic debris
- As vegetation regrows, decreases in stream flow and water levels in lakes and reservoirs
- Exacerbate effects of climate change



# What should DEQ and other agencies do to address wildfire impacts on harmful algal blooms?



## Mitigation and Restoration Tools

- Implement stormwater BMPs to reduce nutrient loading
- Implement BMPs to stabilize streambanks and shorelines
- Technical assistance and/or grants:
  - SWCDs
  - OSU Extension for agricultural and family forestlands
  - Watershed councils
  - NRCS
  - OHA and DWPP for drinking water source areas
- Implement water quality monitoring to measure sediment, nutrients, and temperature based on prioritization



What are some tools and resources available to help predict and track harmful algal blooms?



#### Available and forthcoming resources

- Oregon DEQ Drinking Water Protection
  - <u>https://www.oregon.gov/deq/wq/programs/Pages/DWPAssessments.aspx</u>
- US EPA cyanoHABs resources:
  - <u>https://www.epa.gov/cyanohabs</u>
- Oregon DEQ harmful algal bloom mapping project (to be released in 2021



#### Questions?

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