

The \$10 Million George Barley Water Prize

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150
YEARS
AND GROWING



OVER
GLADCS
FOUNDATION

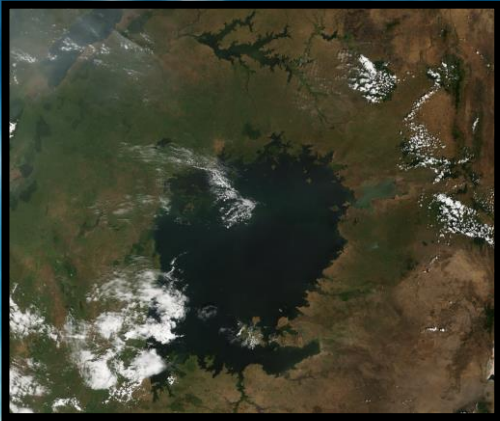
Widespread Water Crisis

Nutrient pollution is impacting lakes and rivers around the globe.



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Around the World

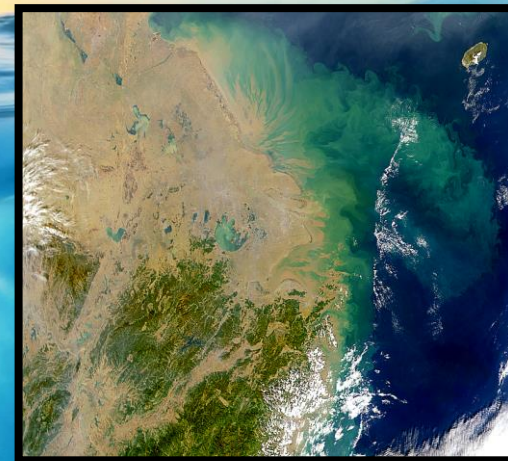


Lake Victoria, 2006

Lake Winnipeg, 2000



Barwon-Darling River, 1992



Lake Taihu, 1998

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Phosphorus is a Nutrient

- **Essential for life, non toxic.**
- **When P is in excess, it becomes a pollutant.**

Health Impacts

Economic Impacts

Ecological Impacts



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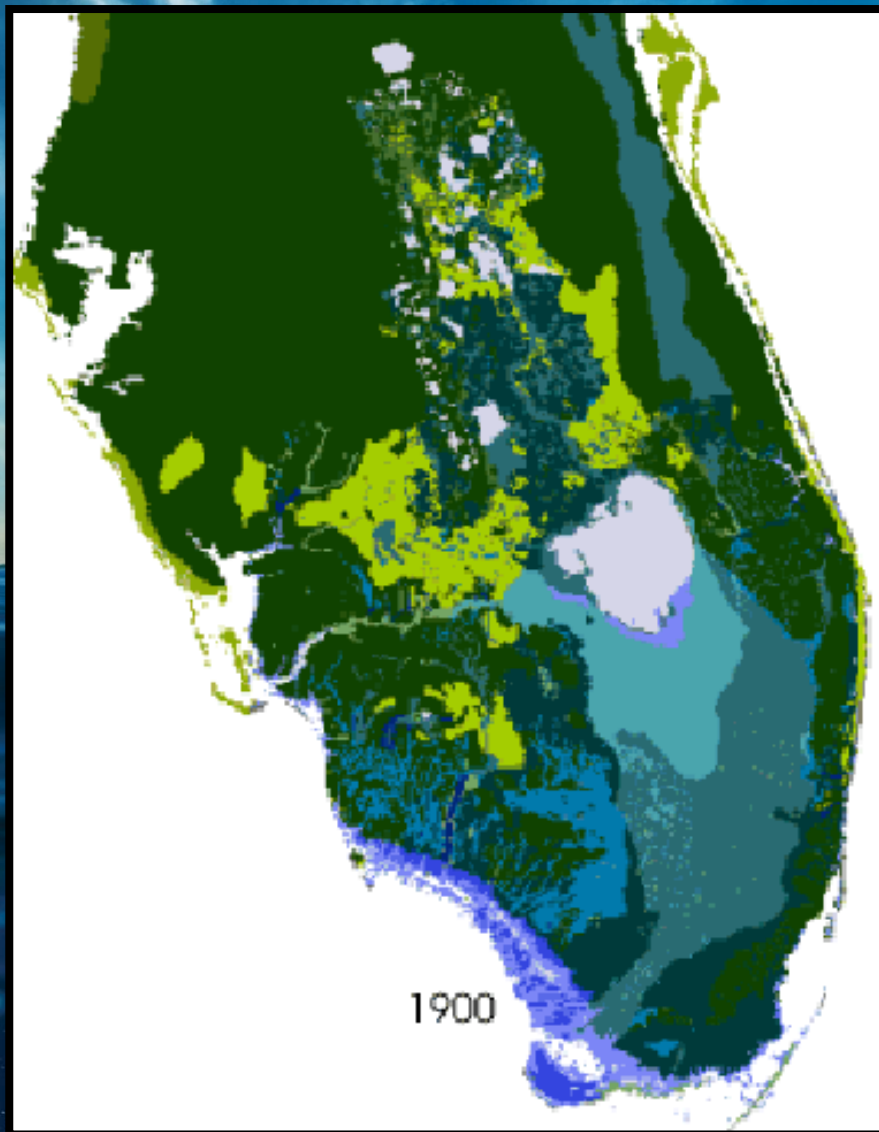
Where is P coming from?

- **Urban areas** – wastewater and stormwater (**P** and N)
- **Farms** – over fertilization (**P** and N)
- **Dairies** – Manure (**P** and N)

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In Florida

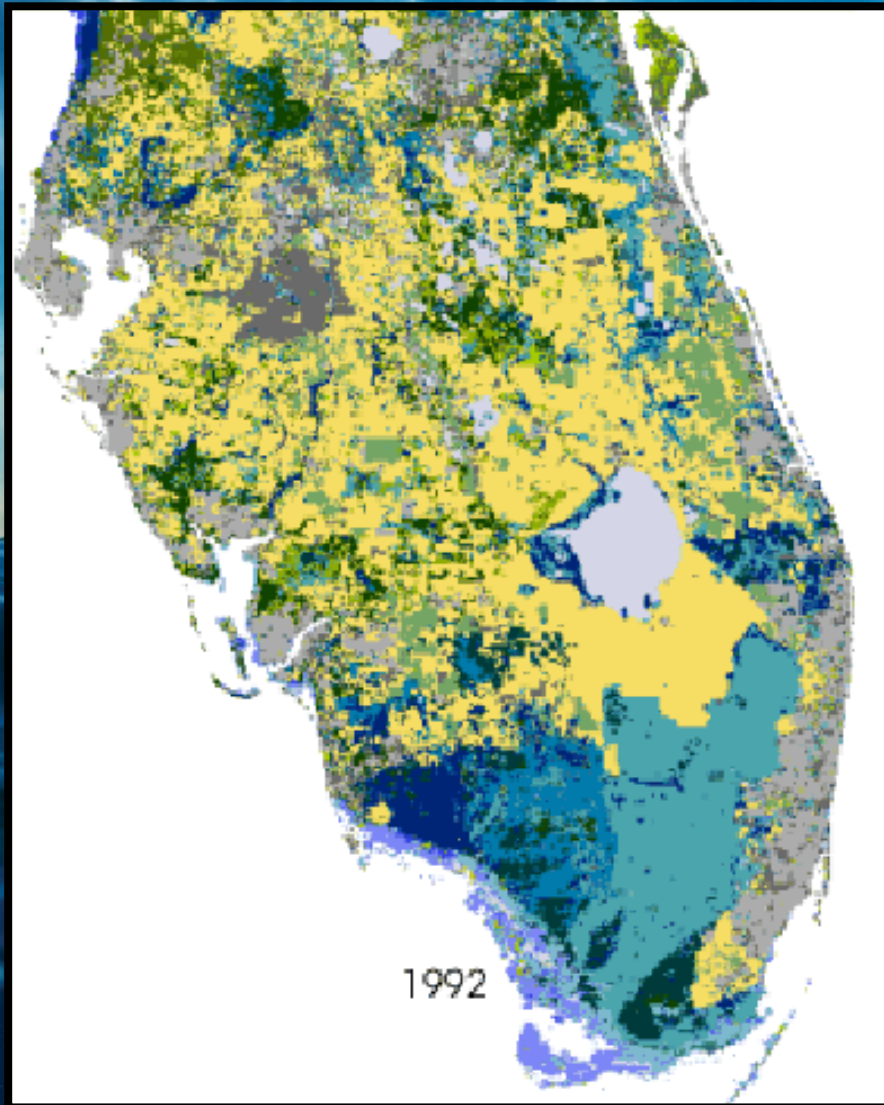


landcover types

- open water
- mangroves
- saltwater marsh
- woody wetlands
- deciduous needleleaf/swamp (cypress)
- evergreen shrub wetland
- saw grasses/other marshes
- slough, bog, or marsh
- wet prairie, marsh
- evergreen needleleaf trees
- deciduous broadleaf trees
- evergreen broadleaf trees
- mixed woodland
- shrubs
- grasses
- crops/mixed farming
- mixed residential
- urban/roads, rock, sand

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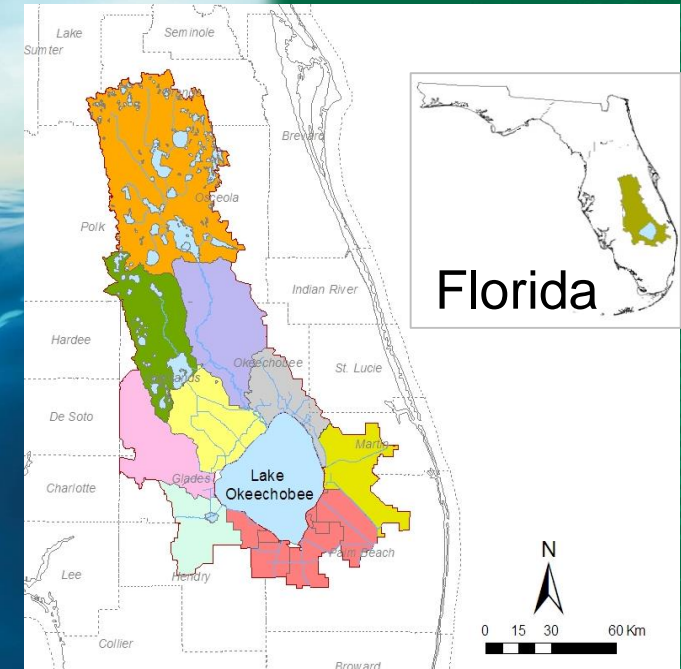
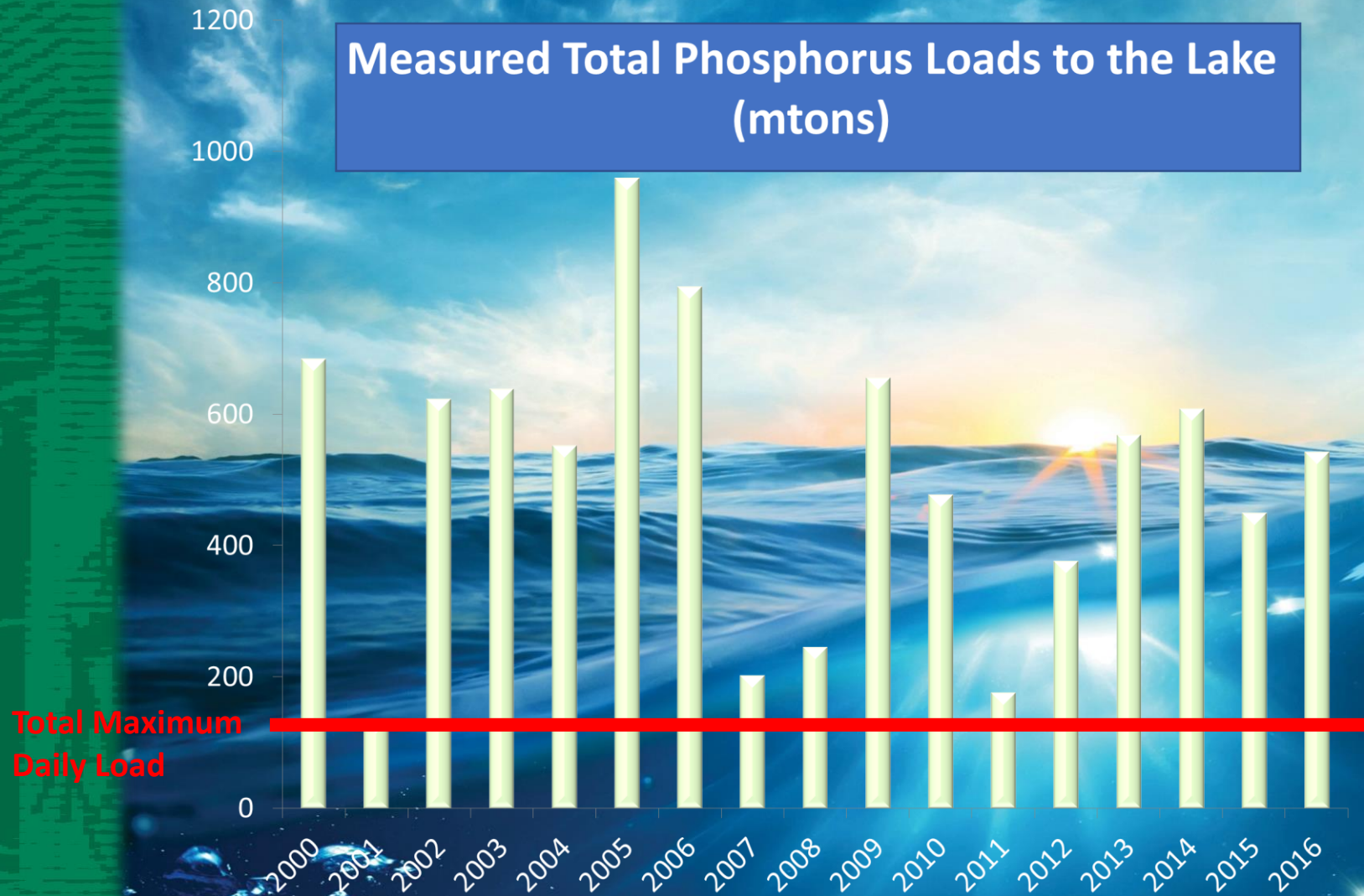
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Lake Okeechobee

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Measured Total Phosphorus Loads to the Lake
(mtons)



Ecological Impacts



- Imbalance in the food web
- Oxygen depletion
- Flora and fauna changes

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Current Solutions



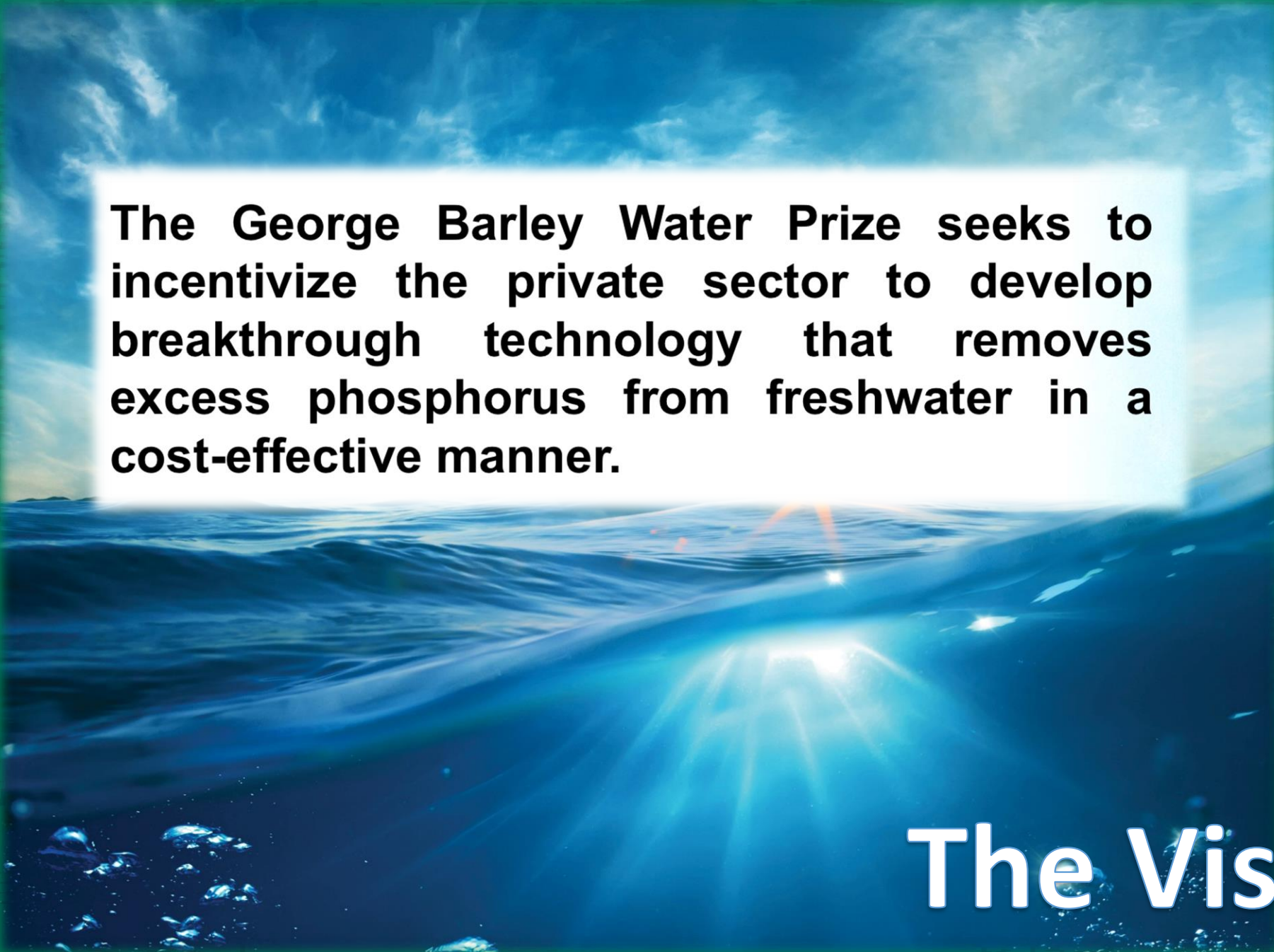
- ☐ Cost prohibitive
- ☐ Land intensive
- ☐ Legislative Challenges

GBWP Solutions



- ☐ Radically cost-effective
- ☐ Tested through size requirements
- ☐ Technological breakthrough

The Vision



The George Barley Water Prize seeks to incentivize the private sector to develop breakthrough technology that removes excess phosphorus from freshwater in a cost-effective manner.

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The Vision



\$10 million award to incentivize innovation on a grand scale



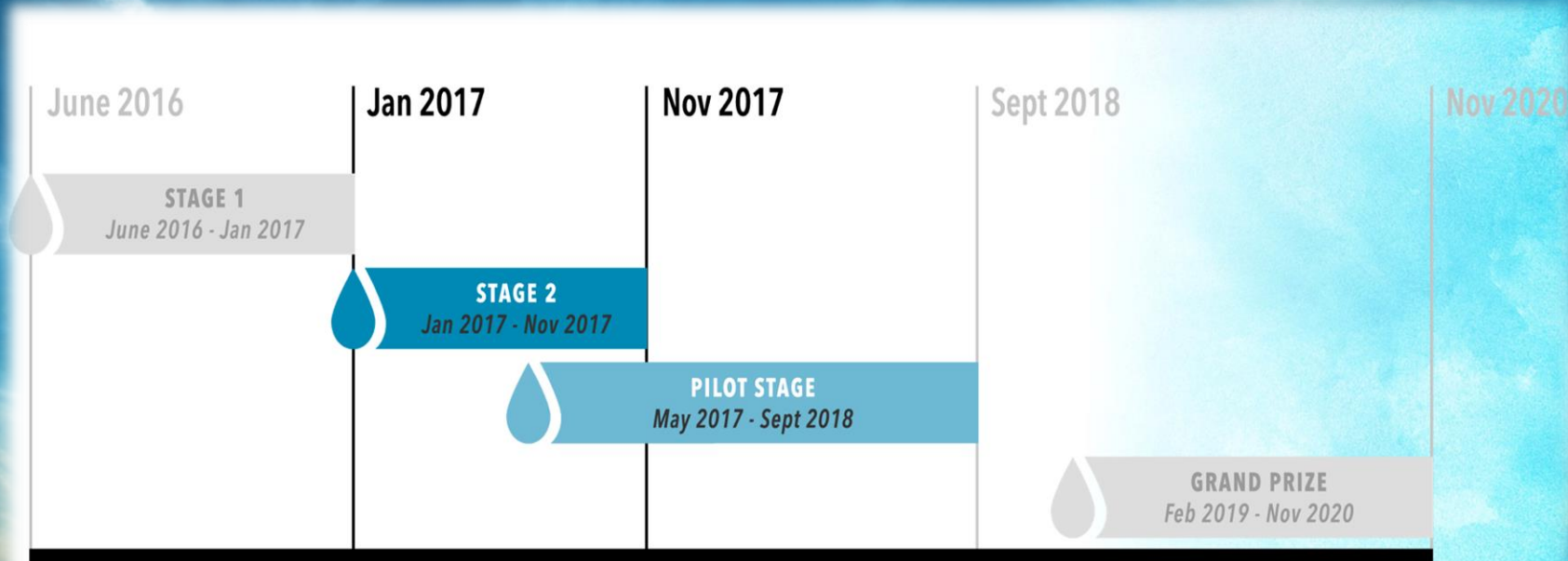
\$915,000 in awards for pilot technologies that solve the early problems and build toward the George Barley Prize



Sponsored awards to incentivize novel technologies, practices, and methodologies

- Winning technology has to be resilient and work under variable conditions – in different freshwater bodies and in different climates.
- To win the \$10 million grand prize, the technology must reduce water phosphorus level to 10 micrograms per liter, and the applied technology must be cost-effective.
- A 4-year competition, concluding in Fall 2020 with Grand Challenge Award.
- 3 stages where technologies will be tested in a lab environment and at a pilot scale. These phases mimic the natural stages of technology development. At the end of each stage, there will be an event to highlight the work, with sub-prizes awarded ranging from \$5,000 to \$200,000 to the most successful ideas by a panel of esteemed judges. A total of \$1.2 million in sub-prizes.
- An independent and highly respected group of partners, judges and experts have been engaged to design, advise, and operate the competition.

How it works



Prize Timeline & Structure

78 Applicants from the US

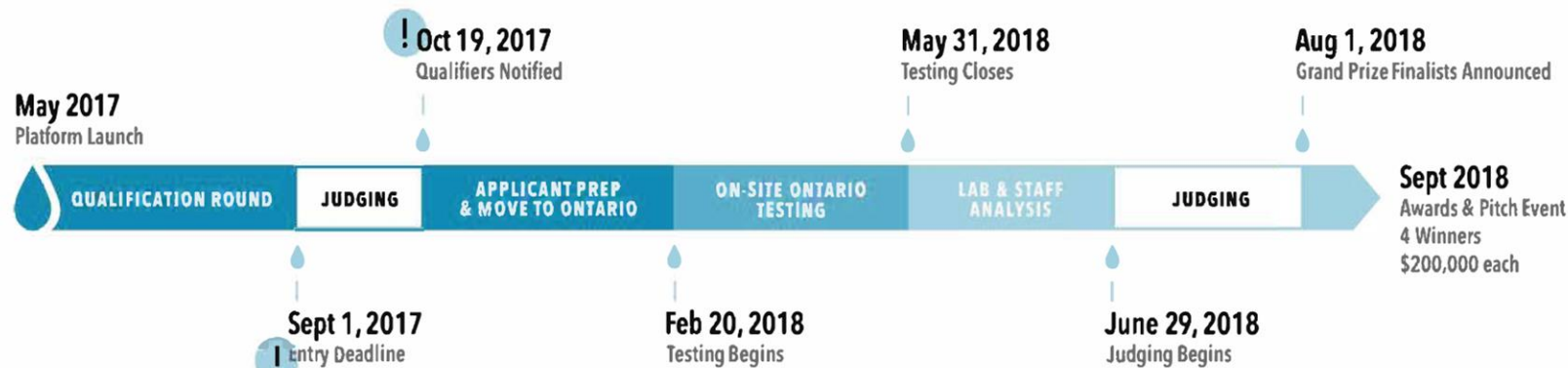
8 Applicants from Canada

12 Applicants from Asia & Oceania
*China, Japan, Indonesia, India,
Australia, Israel*

6 Applicants from Europe
*Germany, Belgium, Netherlands,
Ireland, Sweden*

104 total applicants

Competitor Geography



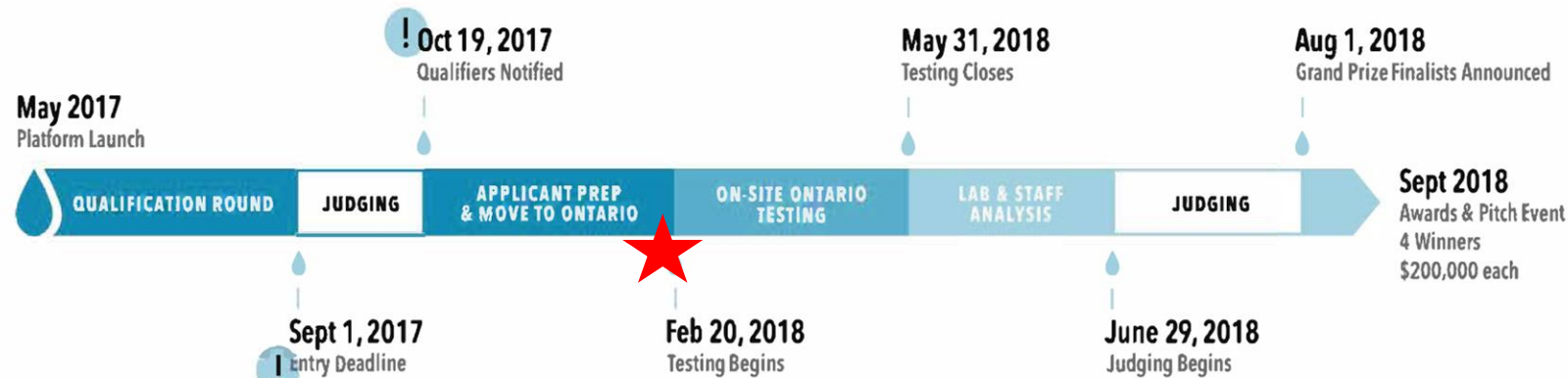
Where We Are Now

Stage 3 (Pilot Phase)

The Pilot Phase will be hosted from February 20th through May 2018 in Bradford West Gwillimbury, Ontario. The Top 10 teams from Stage 2 will compete in this field test.

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Where We Are Now



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Art Janse Pumping Station

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