

Impacts of Climate Change and Rising Sea Level on Gulf Coast Ecosystems

Bottomland hardwood forest

Salt marsh





Imagery Date: Mar 2006

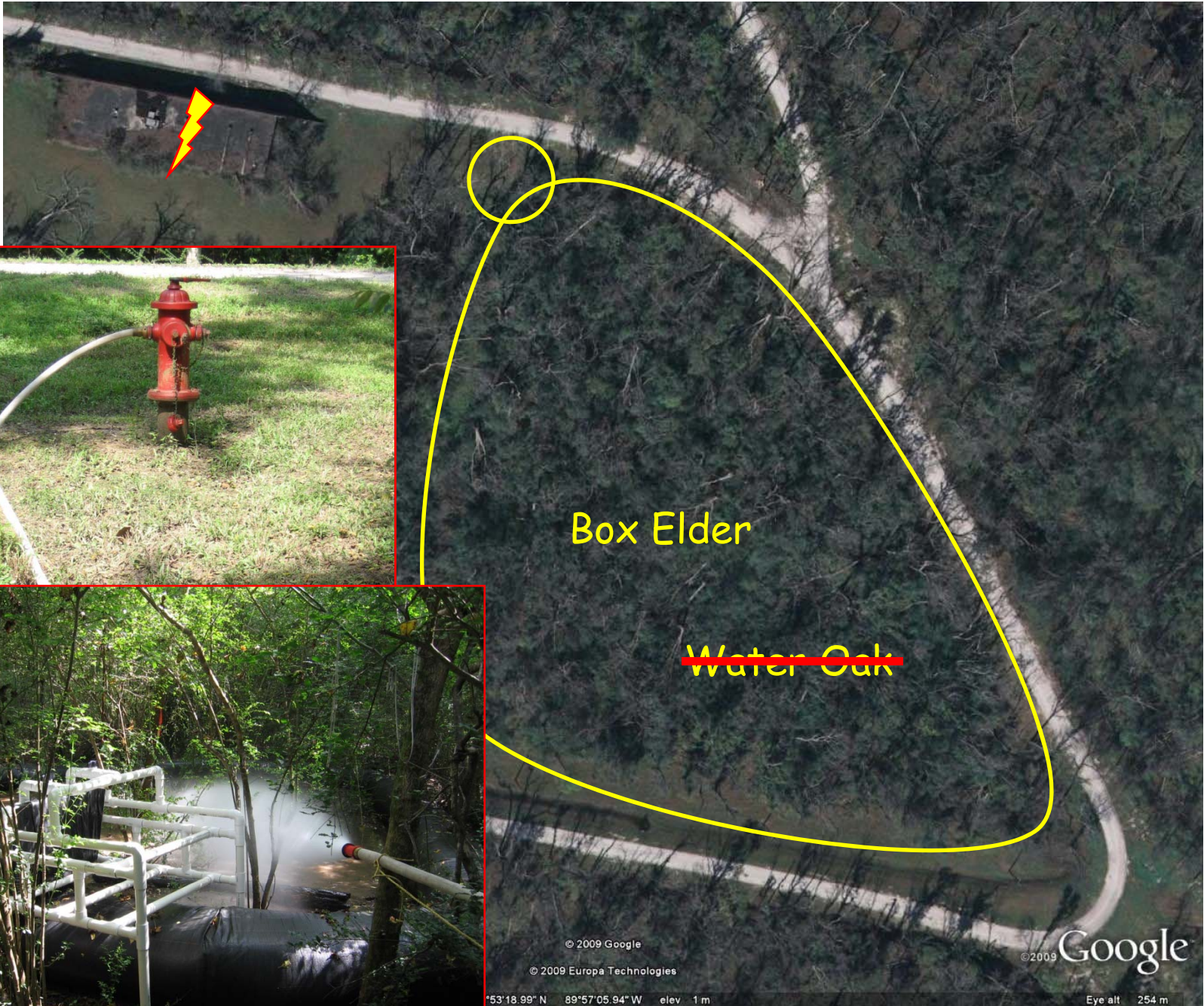
29°53'22.19" N 89°57'40.66" W elev 0 m

Eye alt 1.98 km

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Image U.S. Geological Survey
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Box Elder

~~Water Oak~~

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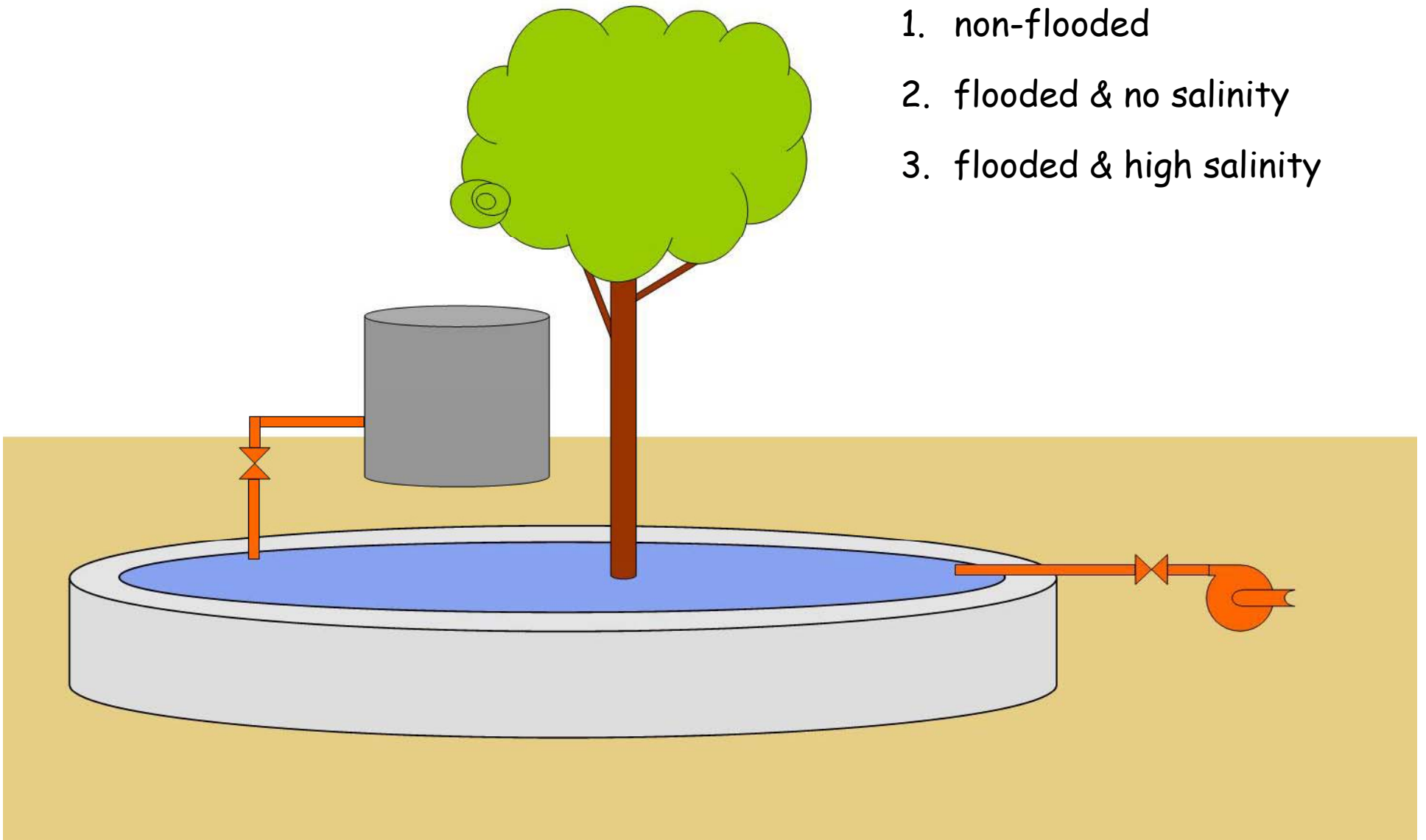
53°18.99' N 89°57'05.94" W elev 1 m

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Eye alt 254 m

Forest Flooding

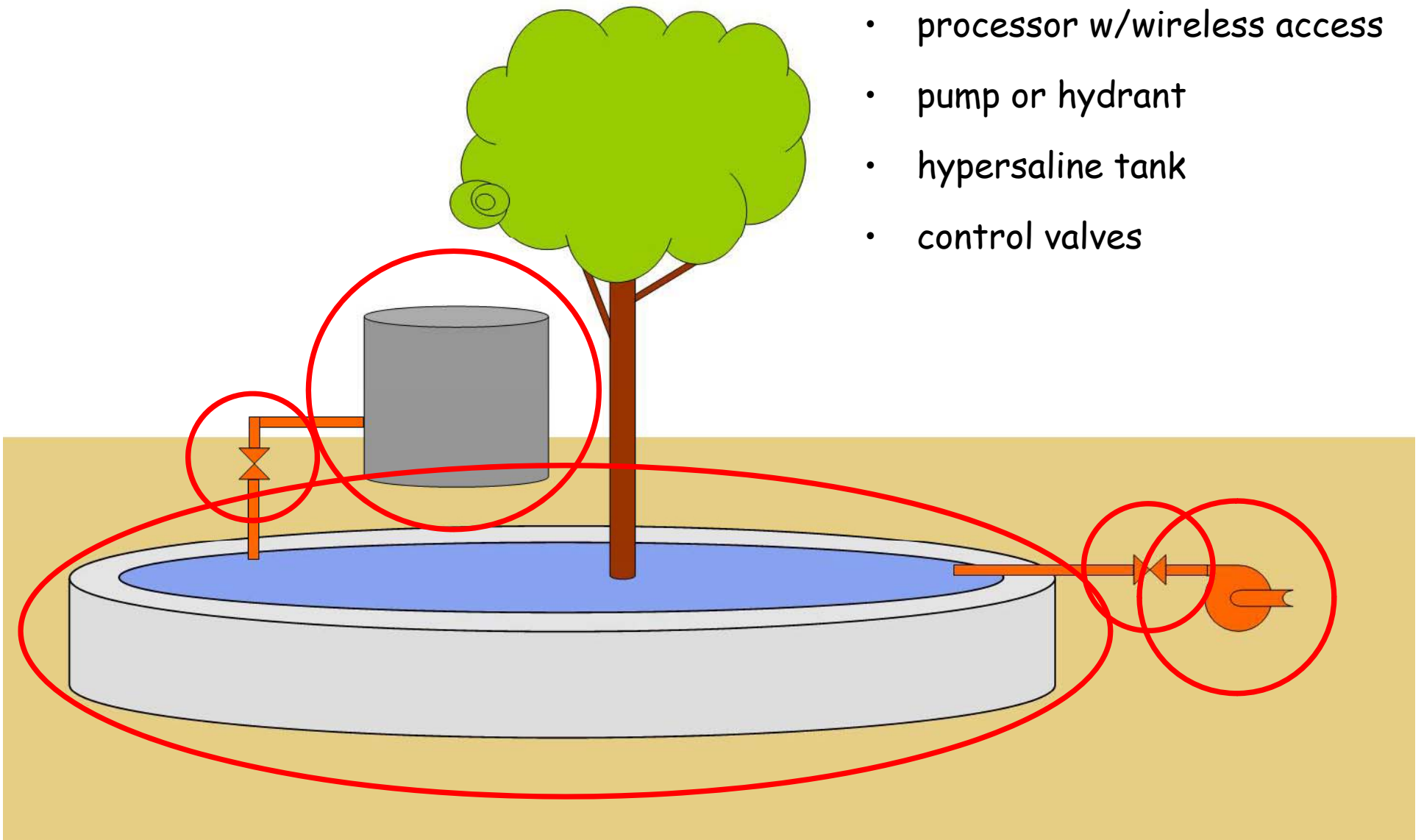
- Nine plots
- Three treatments
 1. non-flooded
 2. flooded & no salinity
 3. flooded & high salinity



Forest Flooding

Components

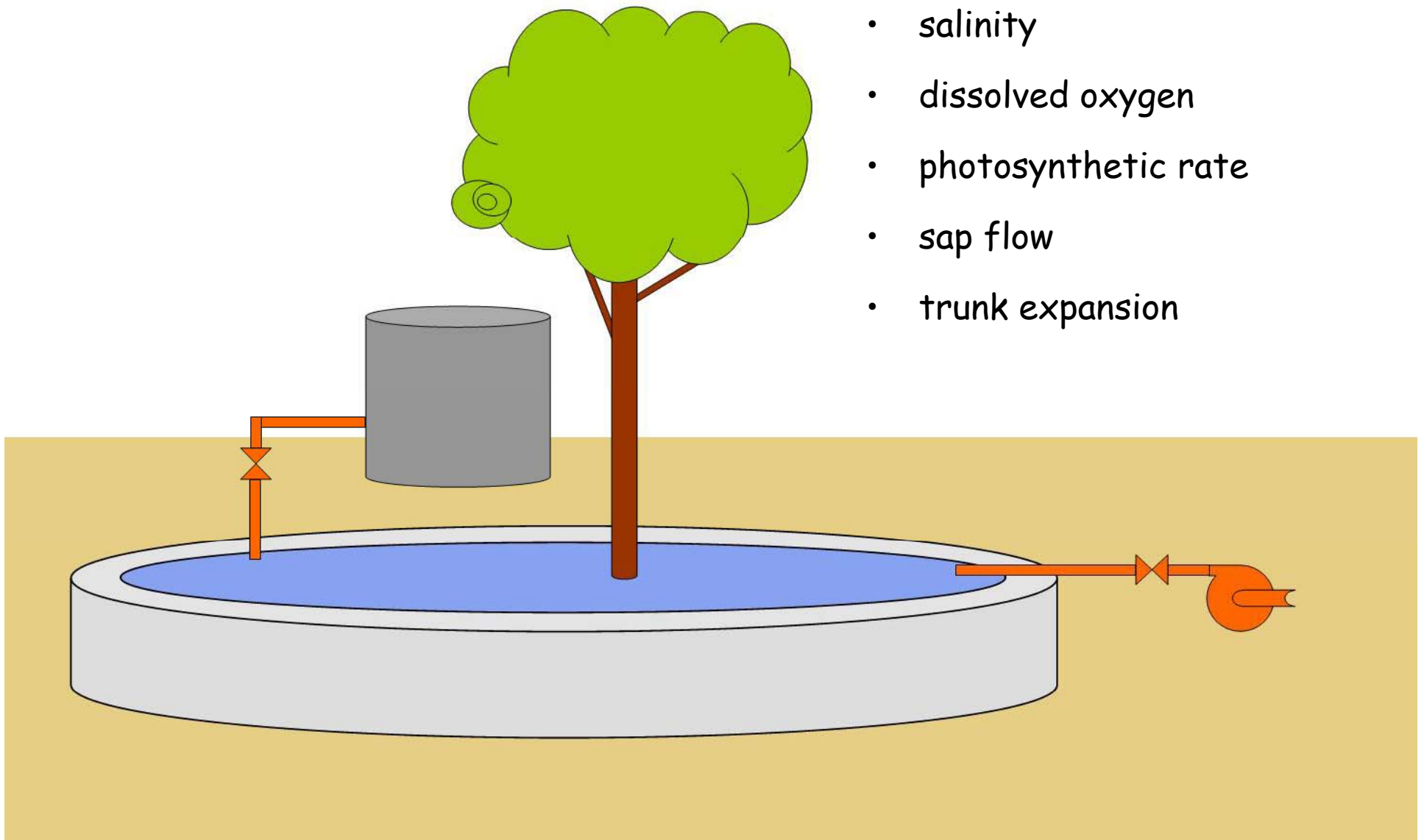
- enclosure - 10 m diameter
- processor w/wireless access
- pump or hydrant
- hypersaline tank
- control valves

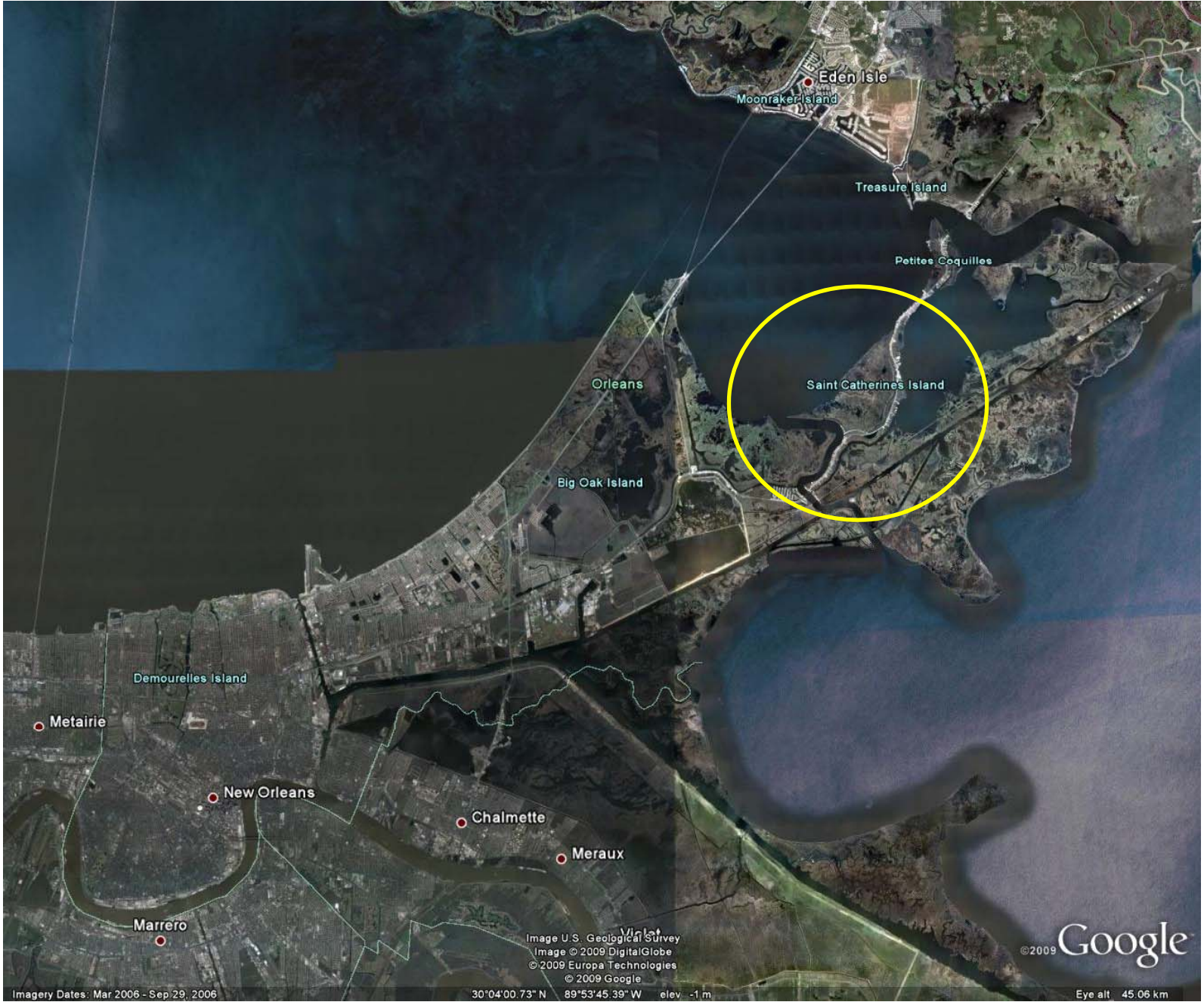


Forest Flooding

Inputs/Controls

- water level
- salinity
- dissolved oxygen
- photosynthetic rate
- sap flow
- trunk expansion





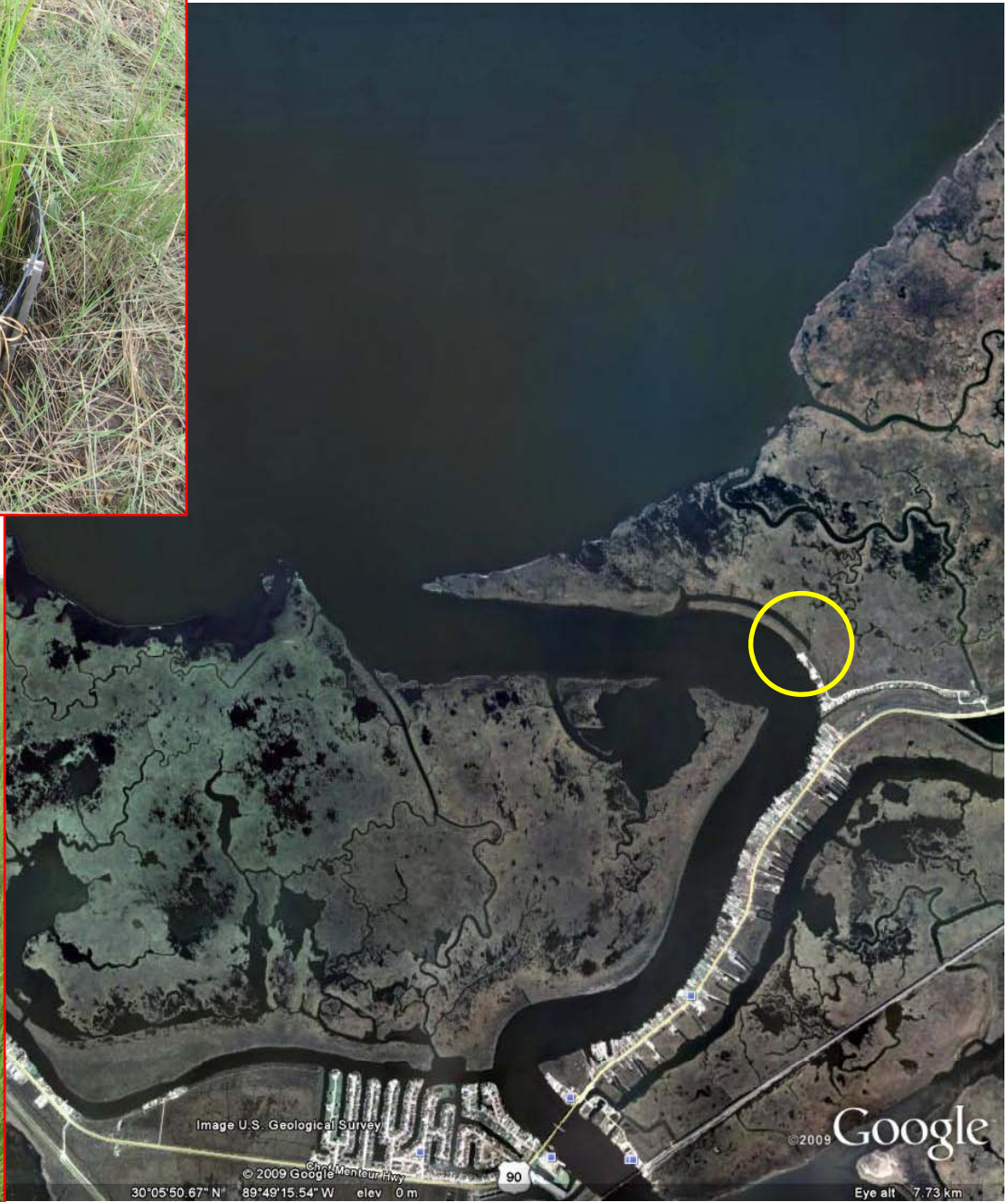
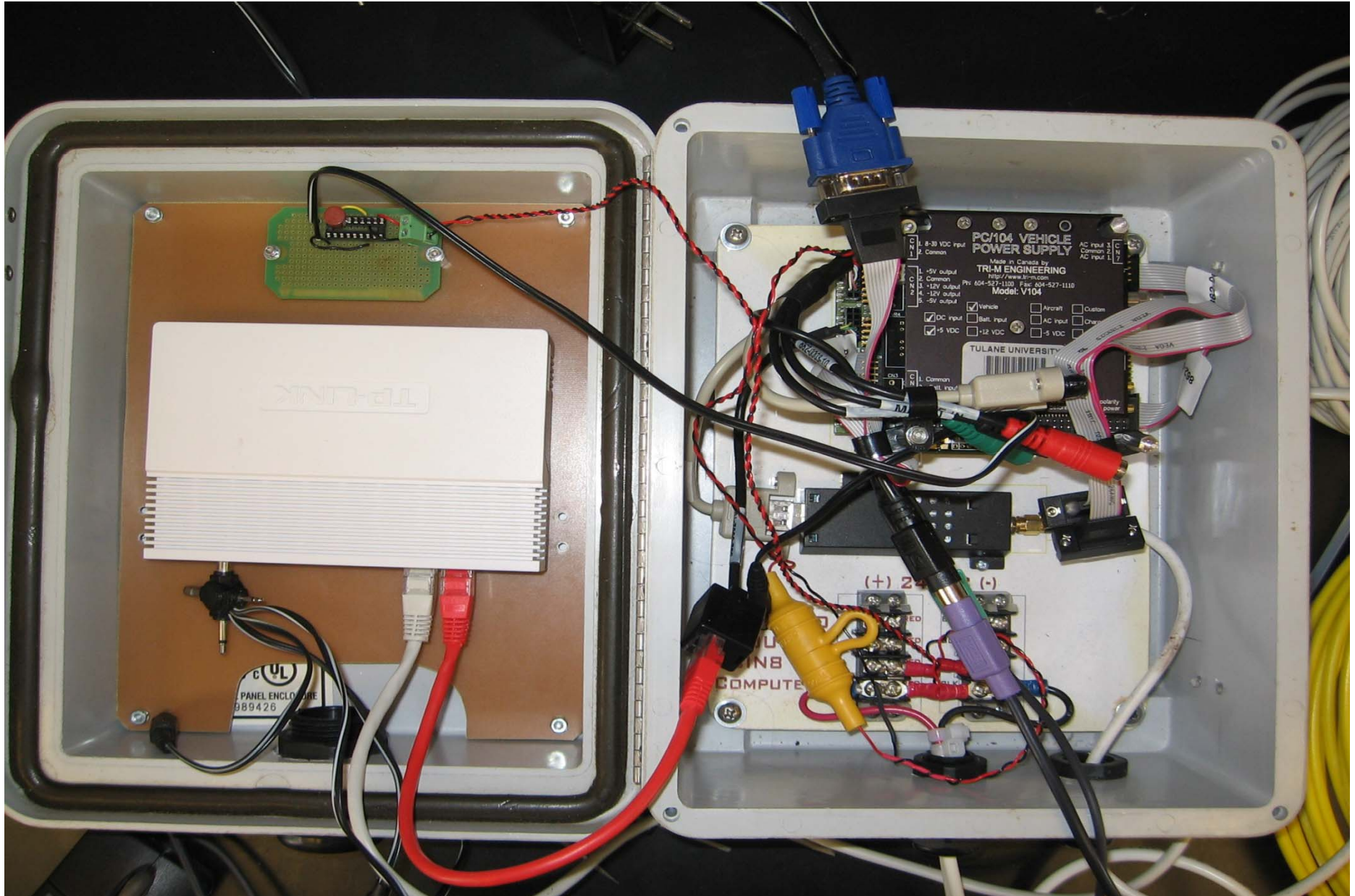




Image U.S. Geological Survey
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30°04'47.88" N 89°50'32.23" W elev 0,m

©2009 Google
Eye alt 2.17 km

NICCR 01 Computer and data logger



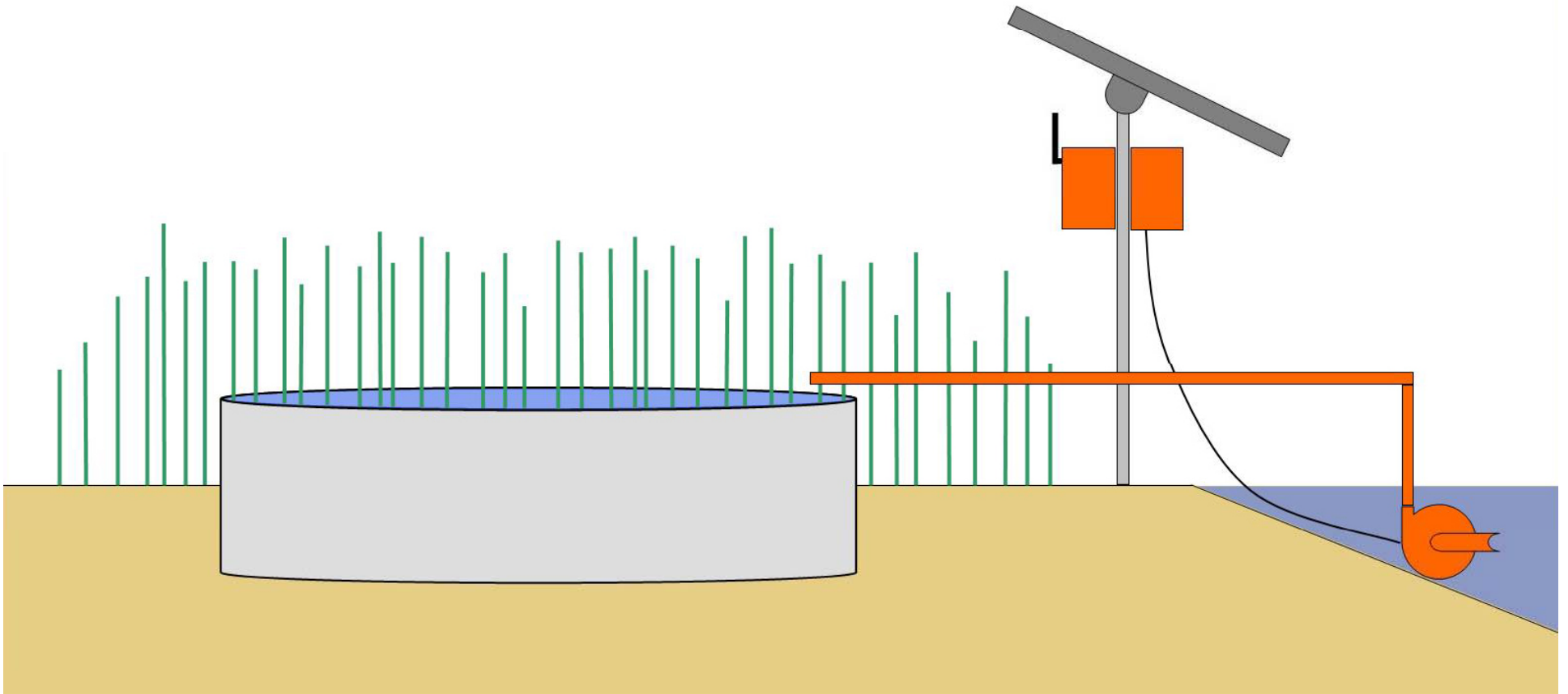
Impacts of Climate Change and Rising sea level on Gulf coast Ecosystem

Sensors



Salt Marsh Flooding

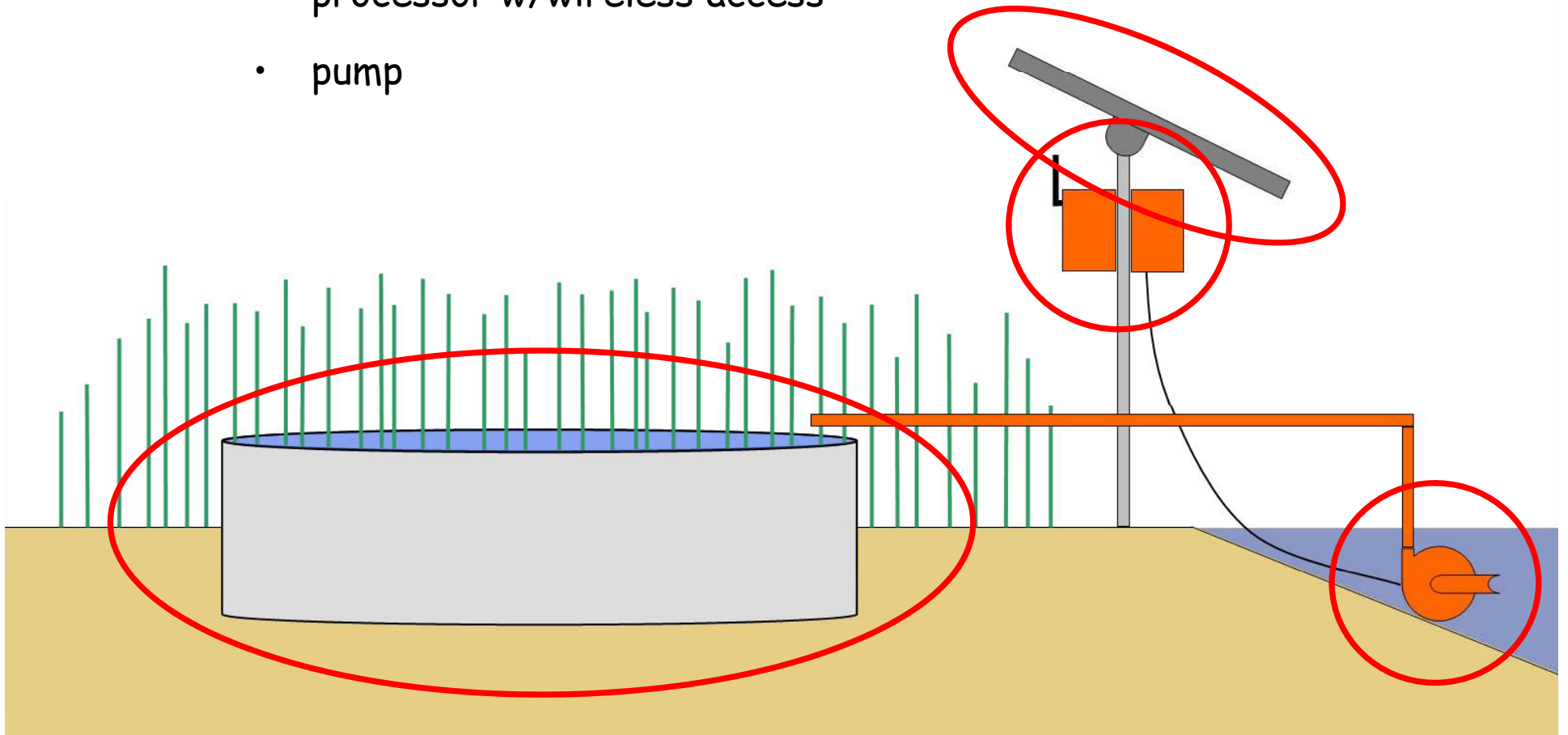
- Nine plots
- Three treatments
 1. non-flooded
 2. flooded & low salinity
 3. flooded & high salinity



Salt Marsh Flooding

Components

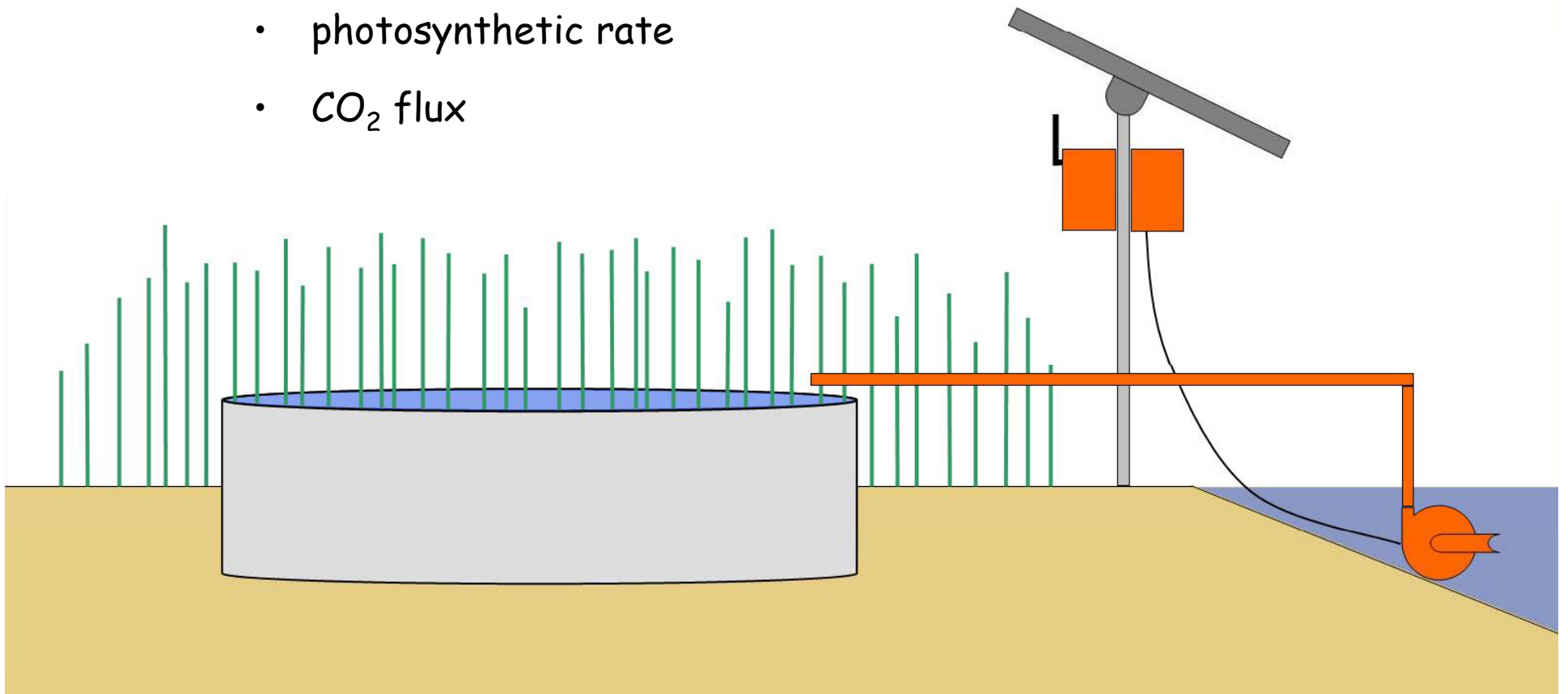
- enclosure - 1.5 m diameter
- photovoltaic panel
- processor w/wireless access
- pump



Salt Marsh Flooding

Inputs/Controls

- water level
- salinity
- dissolved oxygen
- photosynthetic rate
- CO_2 flux



Time line for project

- Forest salinity experiment at Hebert Center begins May 2010.
- Invasive and Hardwood greenhouse salinity experiment May 2010 – Oct 2010.
- Marsh salinity site establishment, early growing season 2011.

