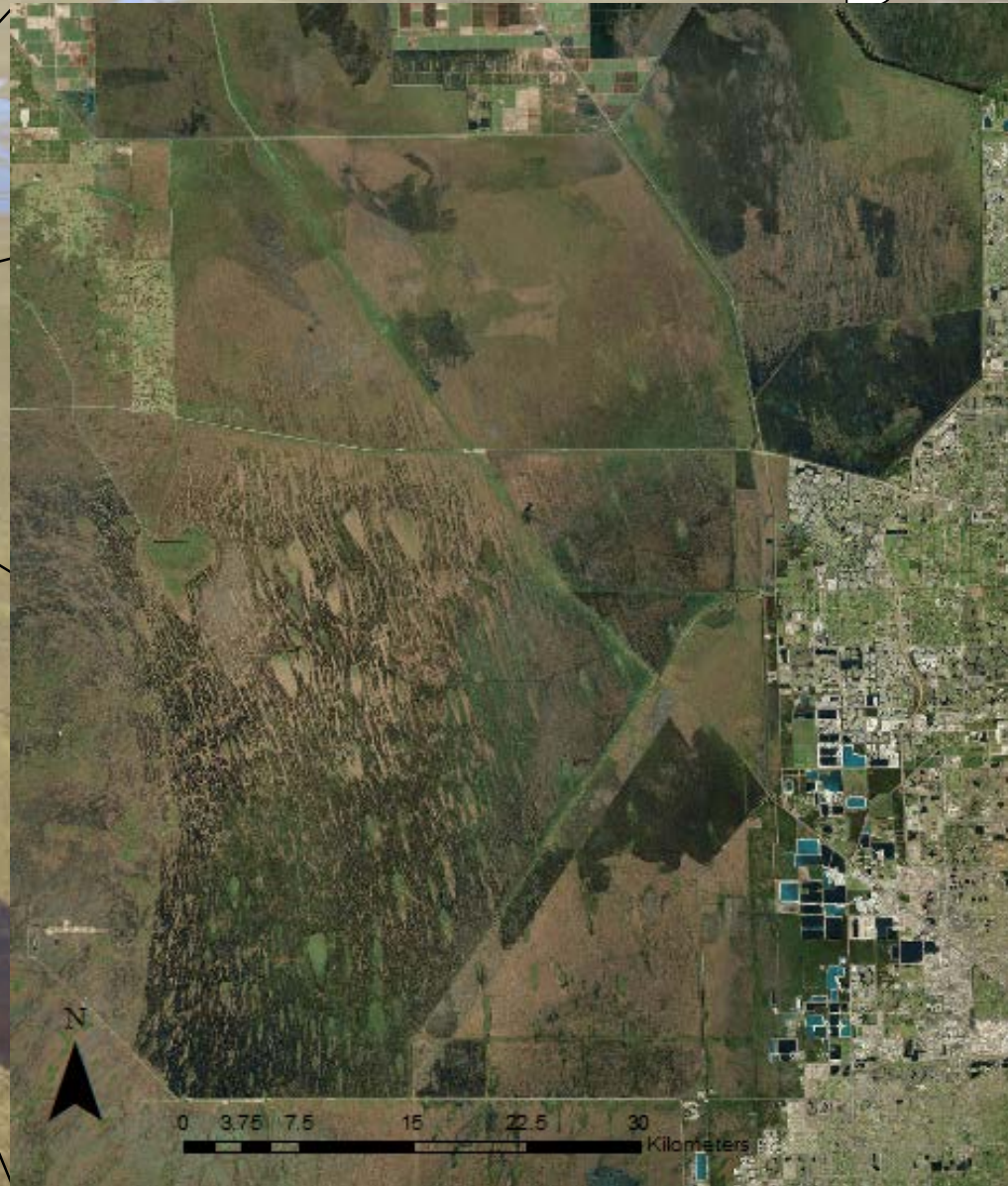
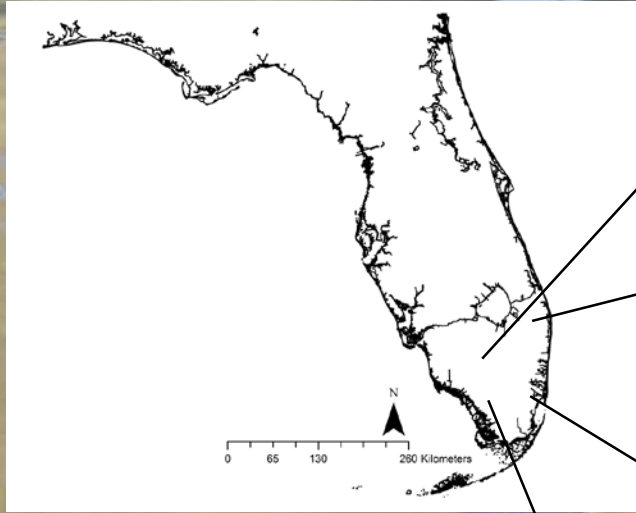


ACTIVE MANAGEMENT INFLUENCES ON BIOGEOCHEMISTRY IN A NUTRIENT POOR WETLAND

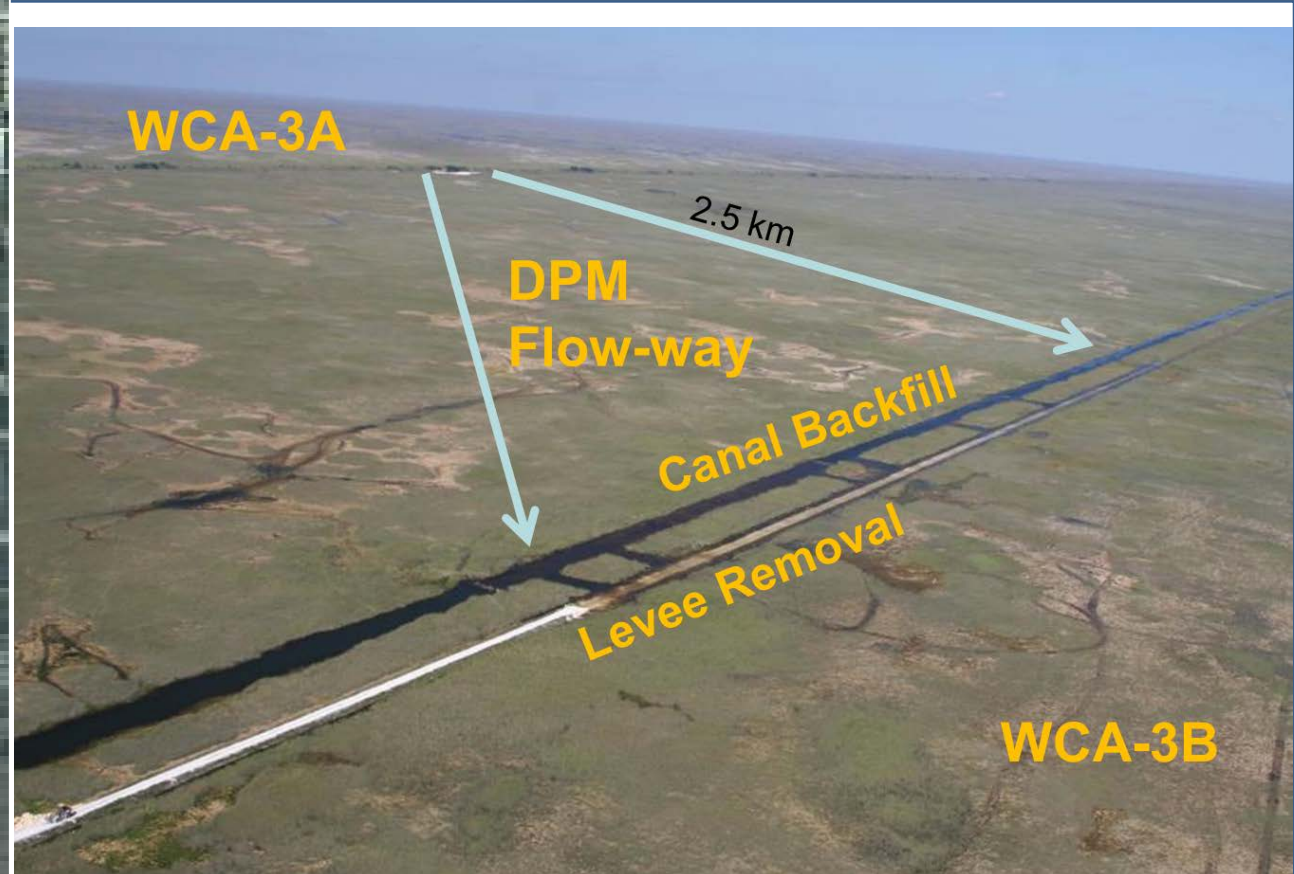
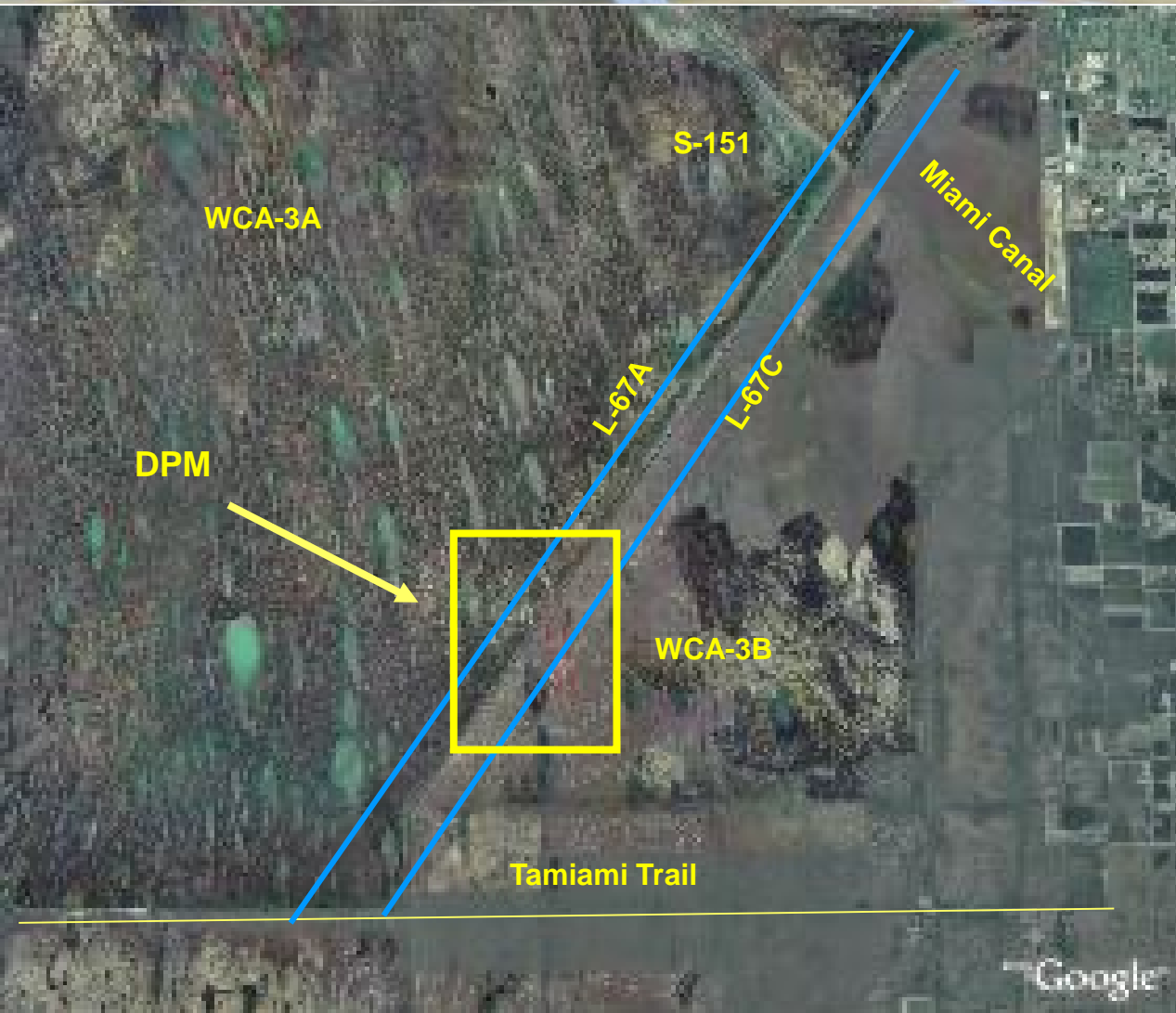
Christa Zweig
Senior Scientist

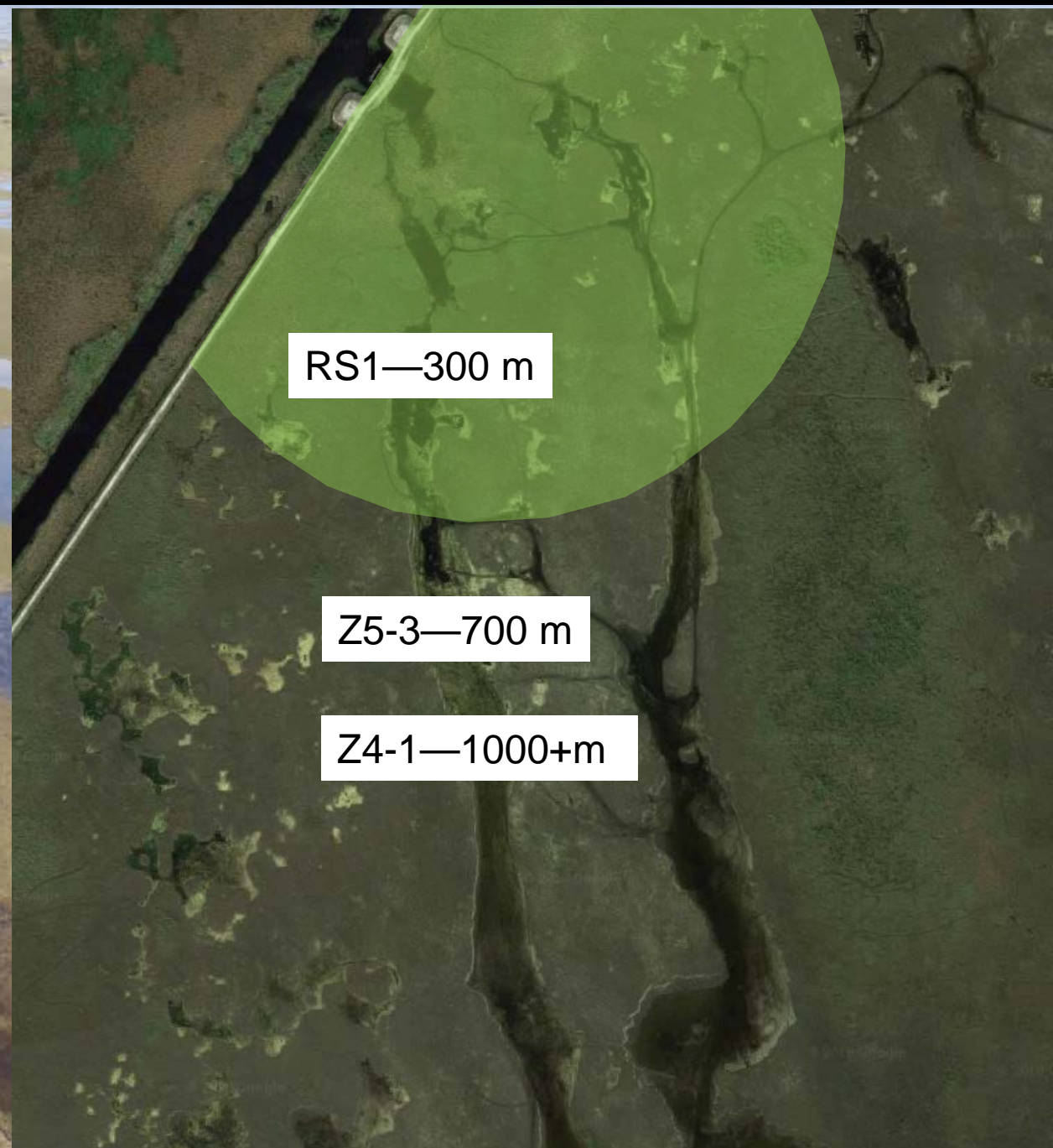
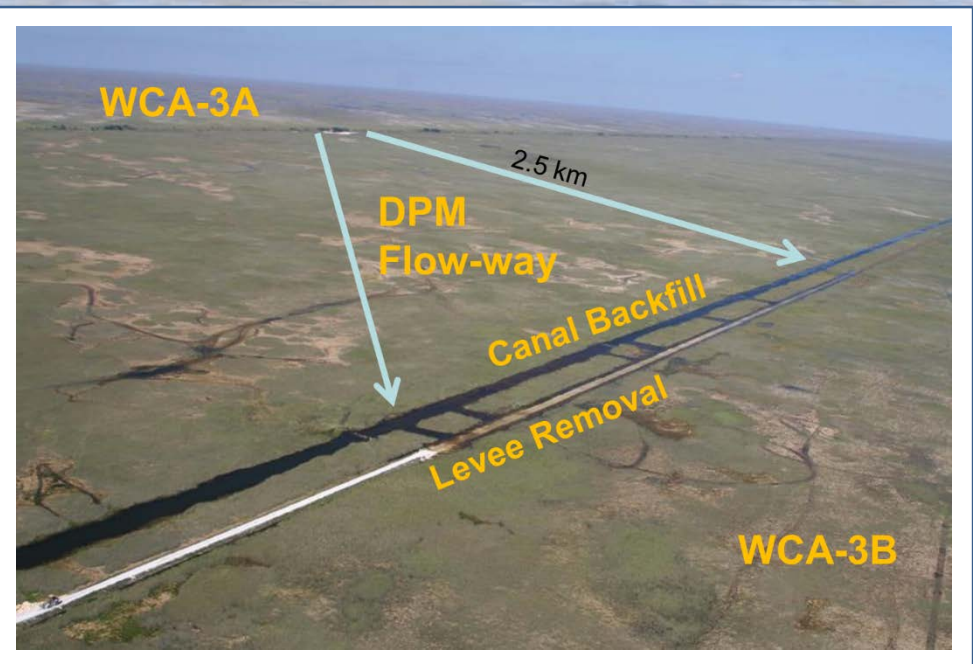
12th International Symposium on
Biogeochemistry of Wetlands
April 25, 2018

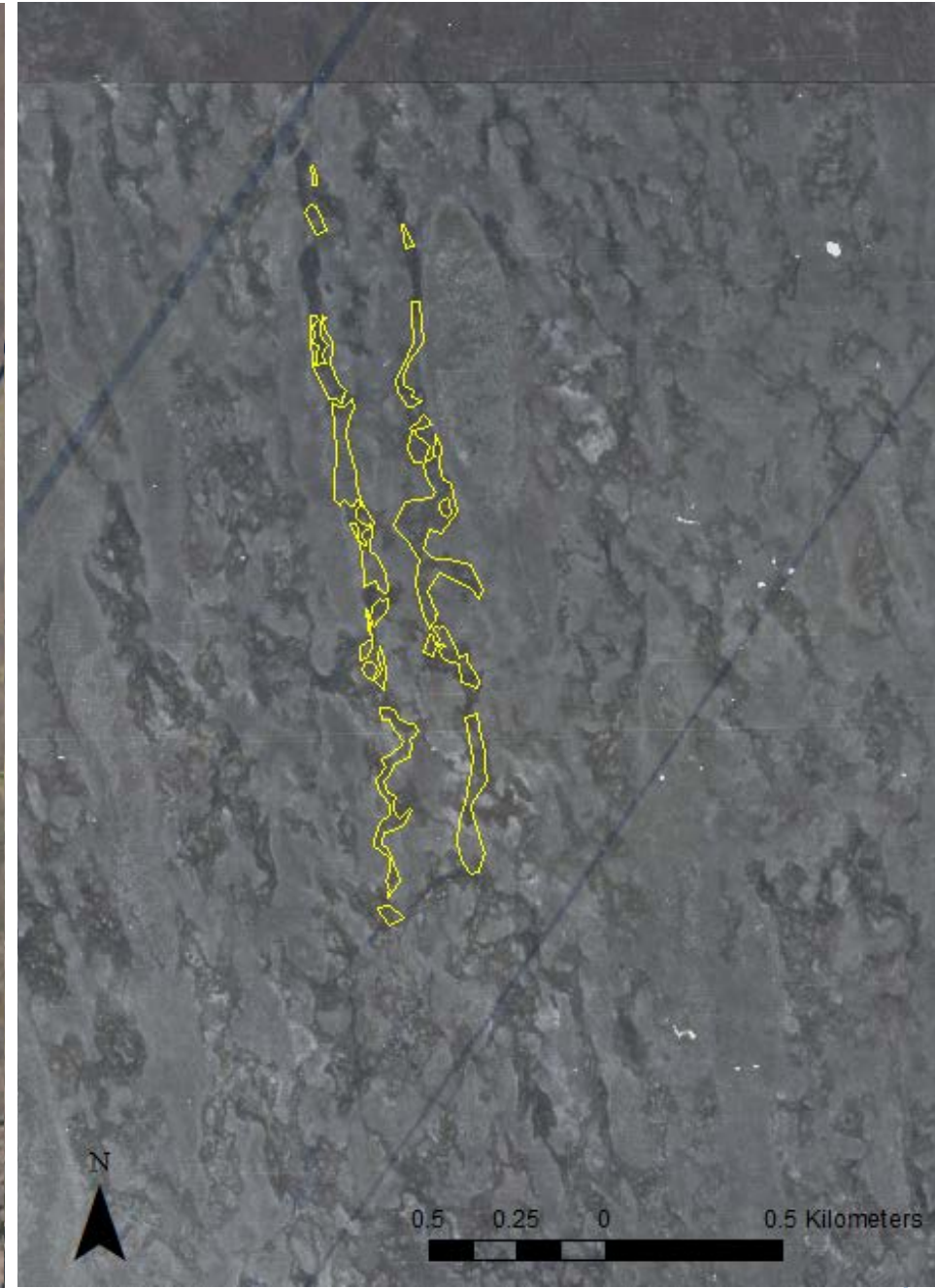
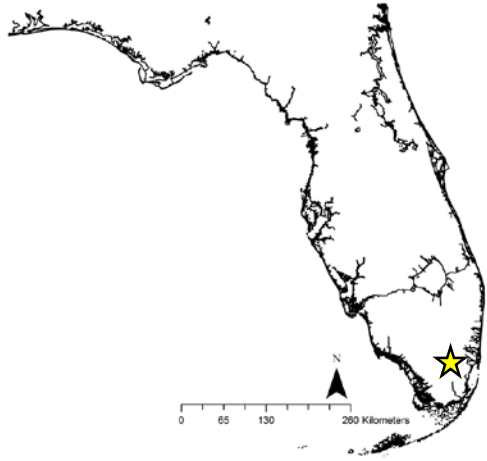
Restoration Challenges



Restoration and Active Management





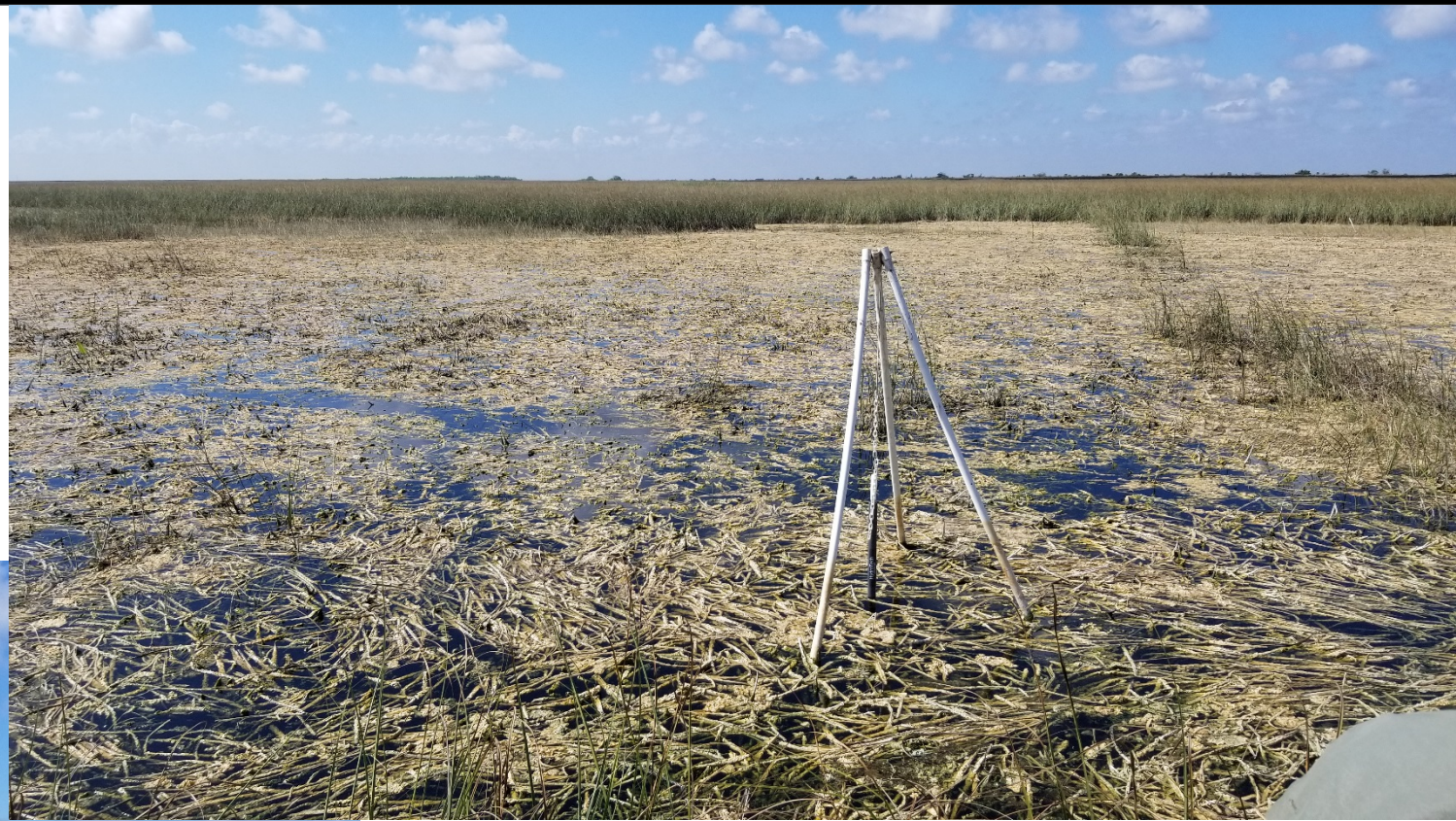




Ground view after ↑
treatment

←
Aerial view after





Z5-3 AMI

Z5-3 Original

Hypotheses

Flow

Dissolved Oxygen

Floc dynamics

Species dynamics

Flow

- Flow will increase further into the footprint
- Increased light penetration will increase algal growth and O₂ production.
- Increased decomposition from dead material will decrease O₂ production
- Floc production will increase
- Floc transport would increase with decreased frontal area
- Floc chemistry will change (pending analysis)
- Plant species will transition to more slough-like species

E250: 12.3

RS1: 4.6

Z5-3: 2.0

Z4-1: 1.0

Pre-AMI

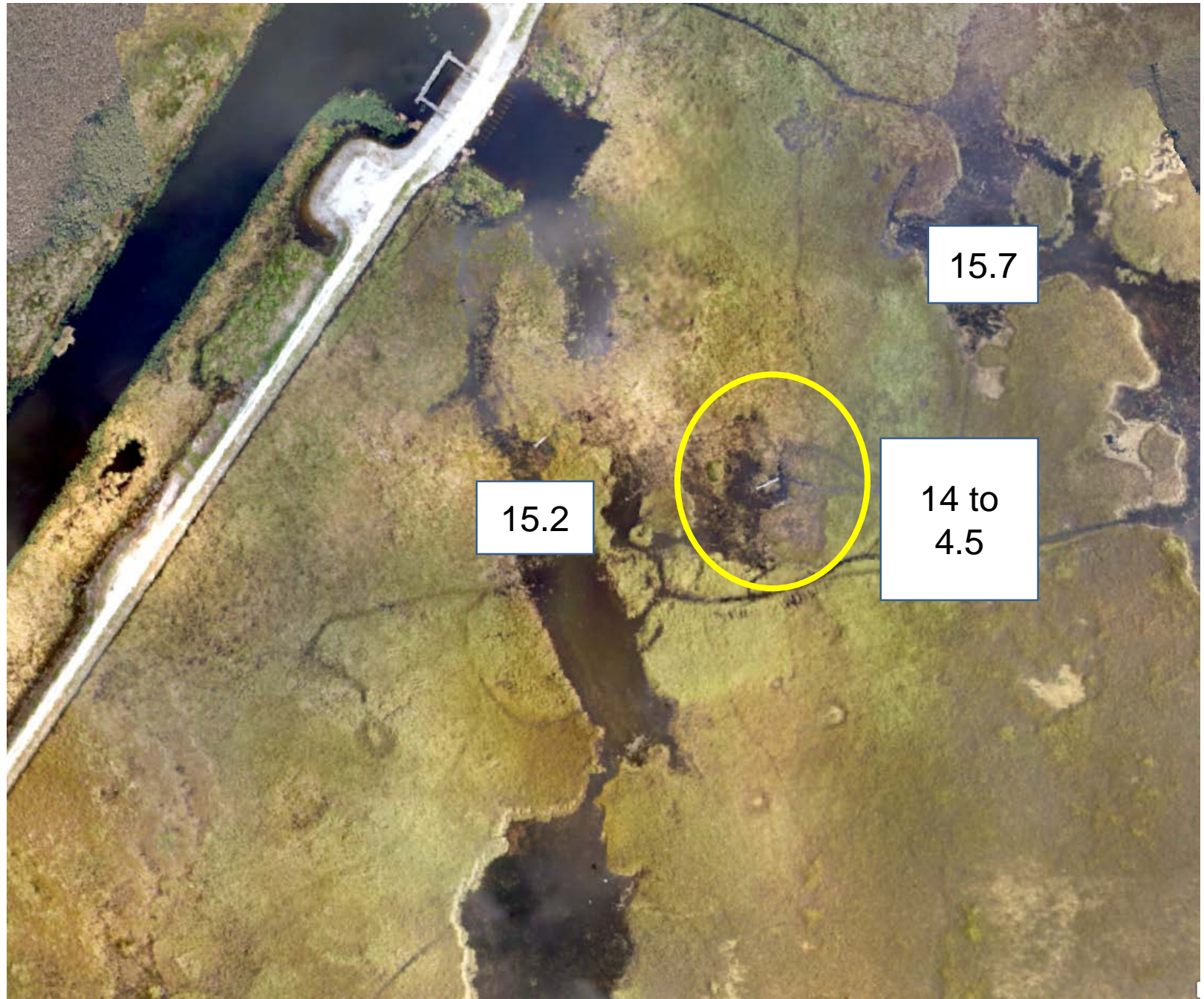
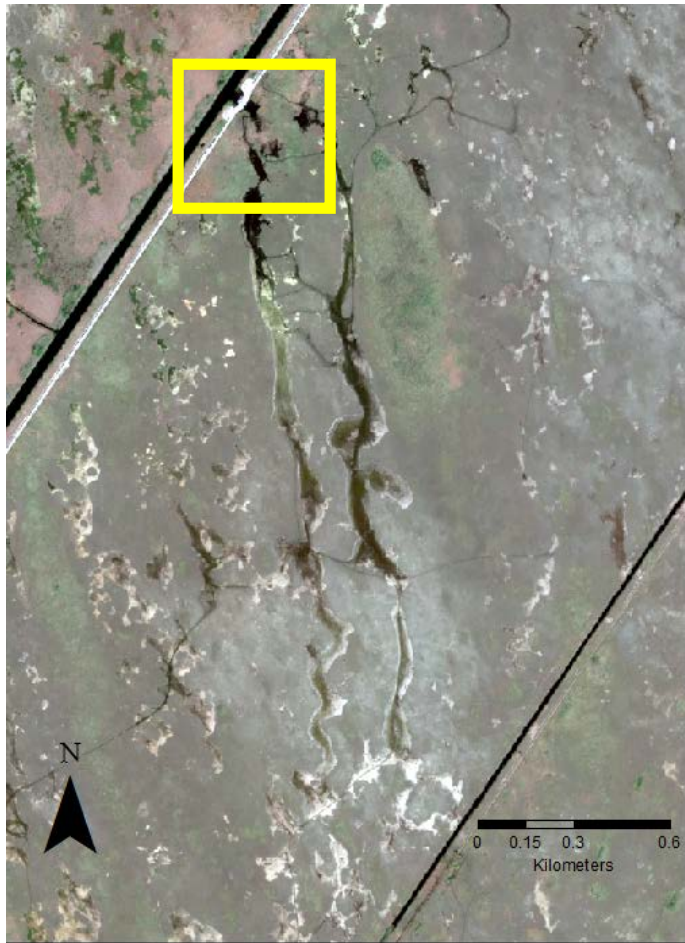
E250: 15.2

RS1: 15.7

Z5-3: 4.3

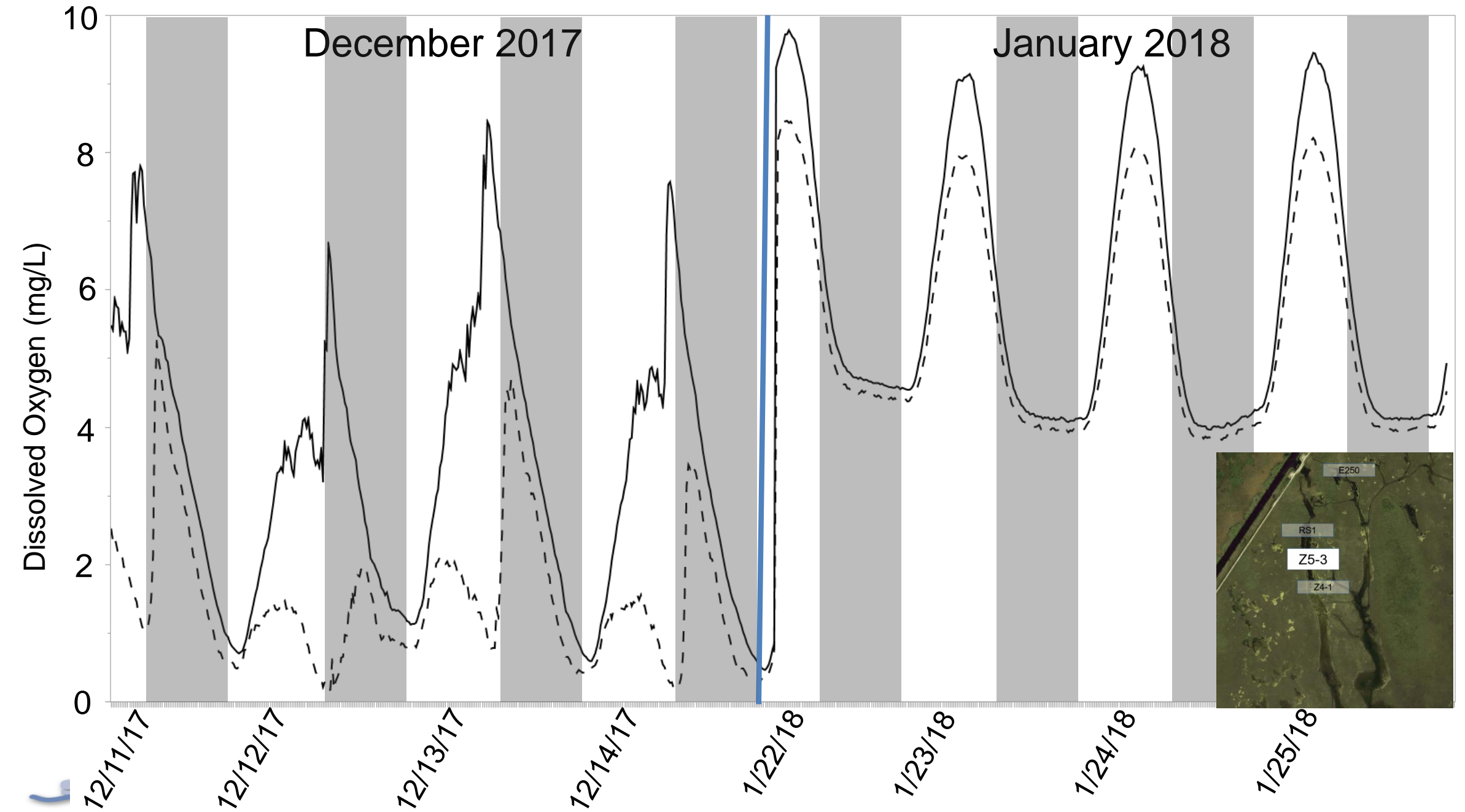
Z4-1: 2.0

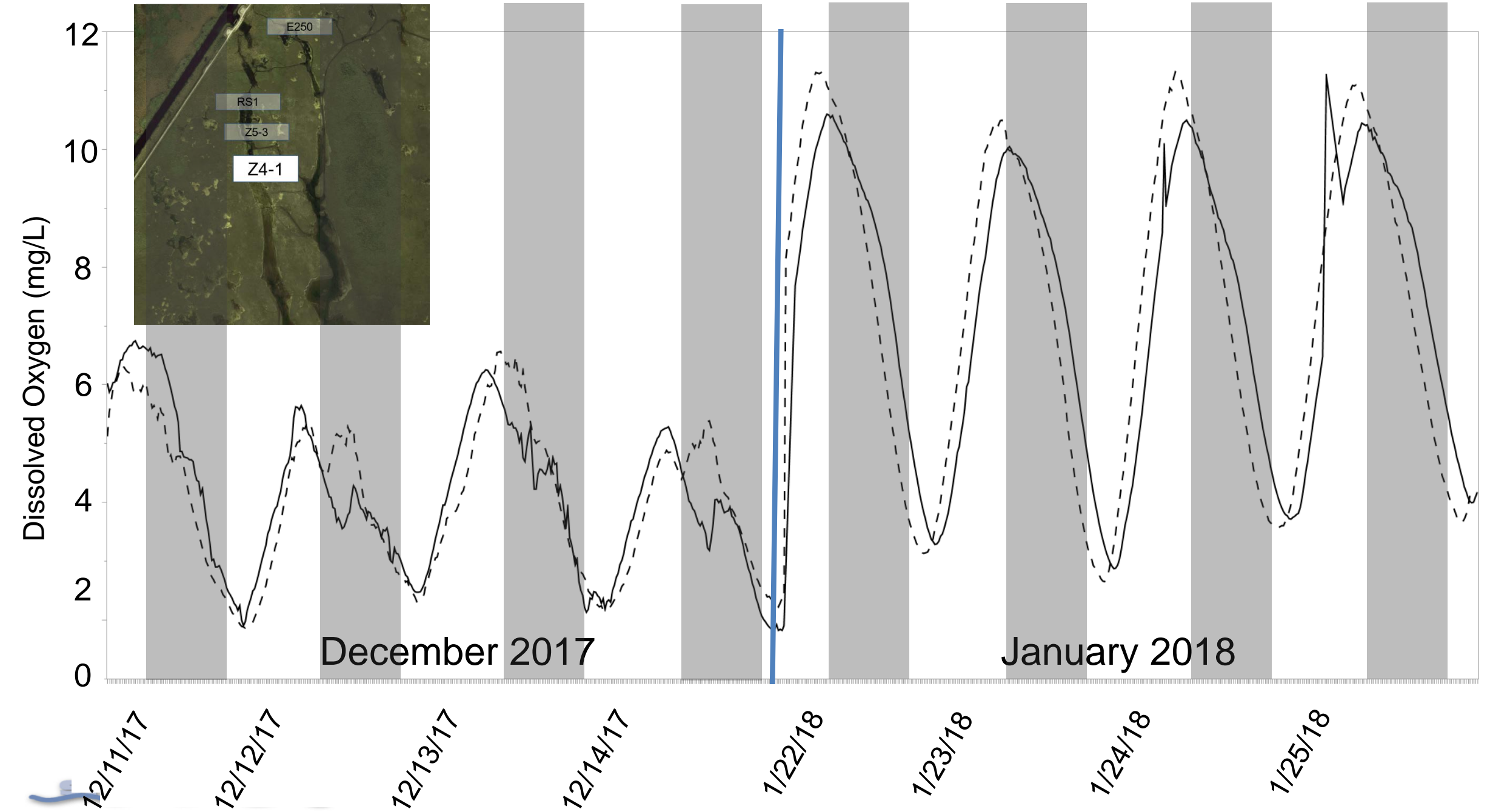
Post-AMI



Dissolved Oxygen

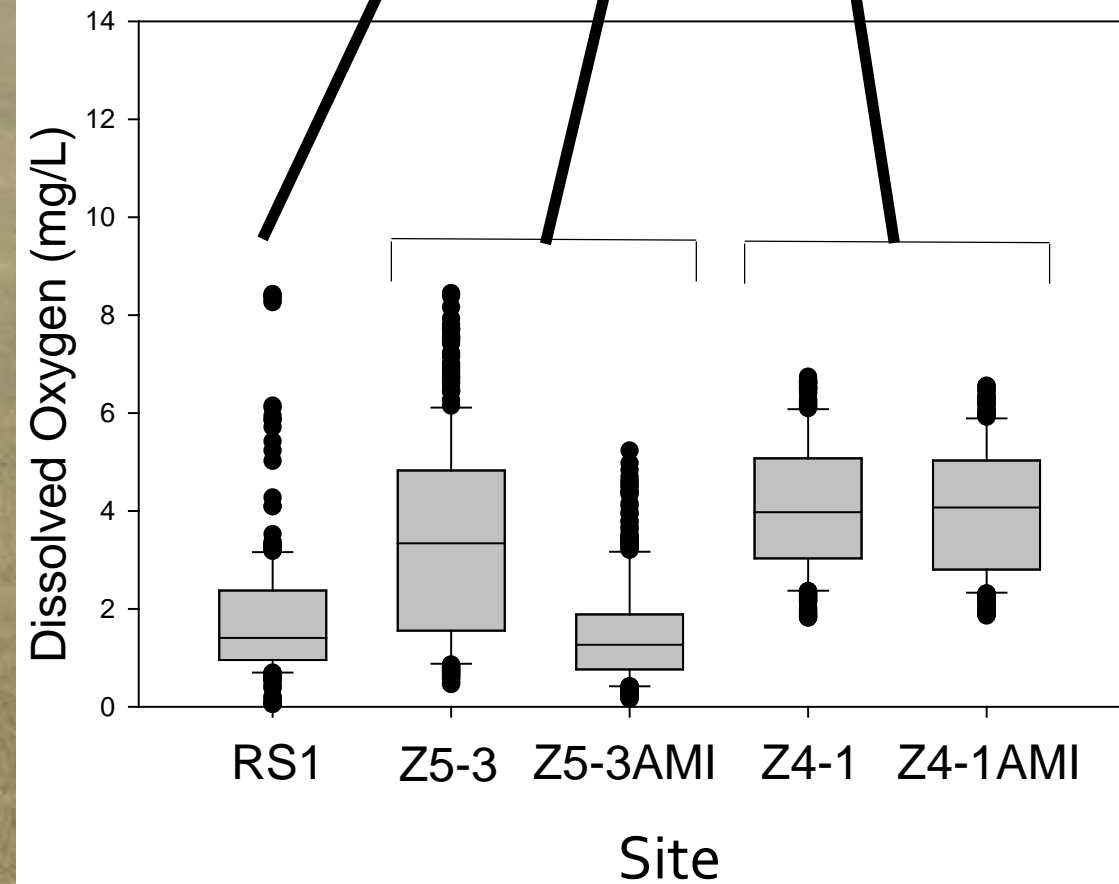
- Flow will increase further into the footprint
- Increased light penetration will increase algal growth and O₂ production.
- Increased decomposition from dead material will decrease O₂ production
- Floc production will increase
- Floc transport would increase with decreased frontal area
- Floc chemistry will change (pending analysis)
- Plant species will transition to more slough-like species



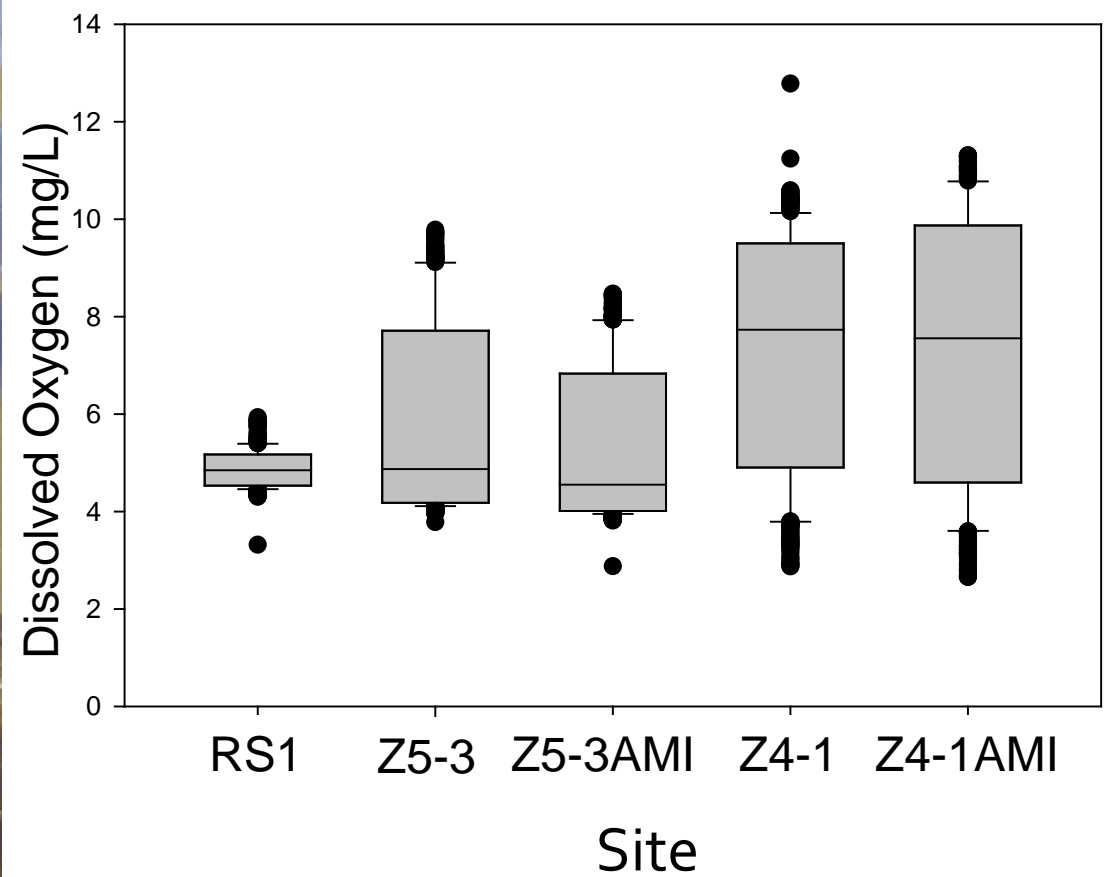


Dissolved Oxygen

Pre-flow

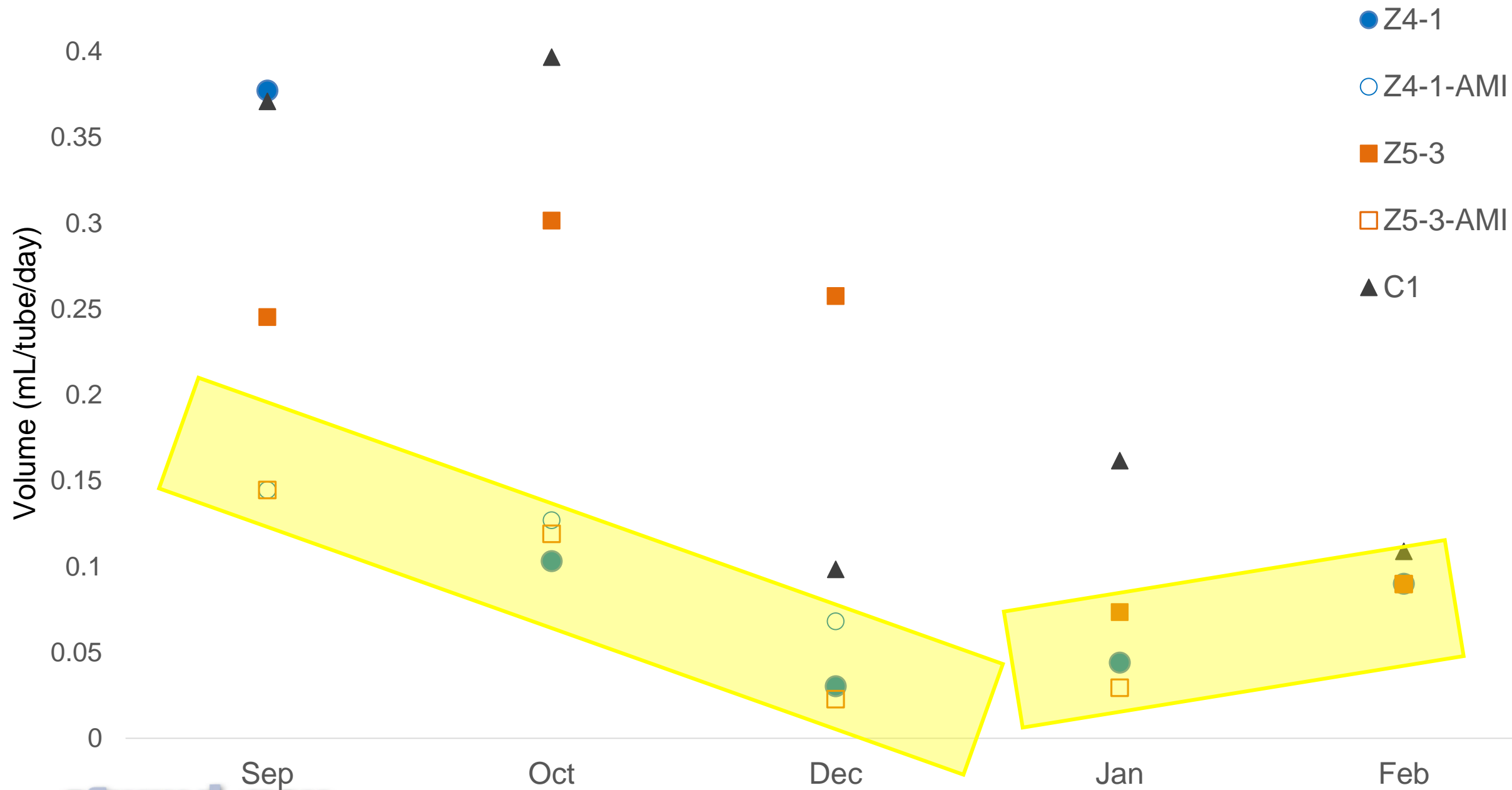


Flow



Floc dynamics

- Flow will increase further into the footprint
- Increased light penetration will increase algal growth and O₂ production.
- Increased decomposition from dead material will decrease O₂ production
- Floc production will increase
- Floc transport would increase with decreased frontal area
- Floc chemistry will change (pending analysis)
- Plant species will transition to more slough-like species







Species dynamics

- Flow will increase further into the footprint
- Increased light penetration will increase algal growth and O₂ production.
- Increased decomposition from dead material will decrease O₂ production
- Floc production will increase
- Floc transport would increase with decreased frontal area
- Floc chemistry will change (pending analysis)
- Plant species will transition to more slough-like species





Ridge-
like

Slough-
like

Dissolved O₂

Floc production

Floc transport

Species

Decomposition

Ridge-
like

Slough-
like



Dissolved O₂

Floc production

Floc transport

Species

Decomposition



Ridge-
like

Slough-
like

Dissolved O₂

Floc production

Floc transport

Species

Decomposition



Co-Authors: Susan Newman, Colin Saunders, Michael Manna, Erik Tate-Boldt, Chris Hansen, Fred Sklar

Acknowledgements: Kelsey Pollack, Ellen Allen, Lisa Jackson, Garen Mezza