# 2018 SAV/Water Quality Observations

## Introduction to New Oyster Aquaculture/SAV Interactions Project

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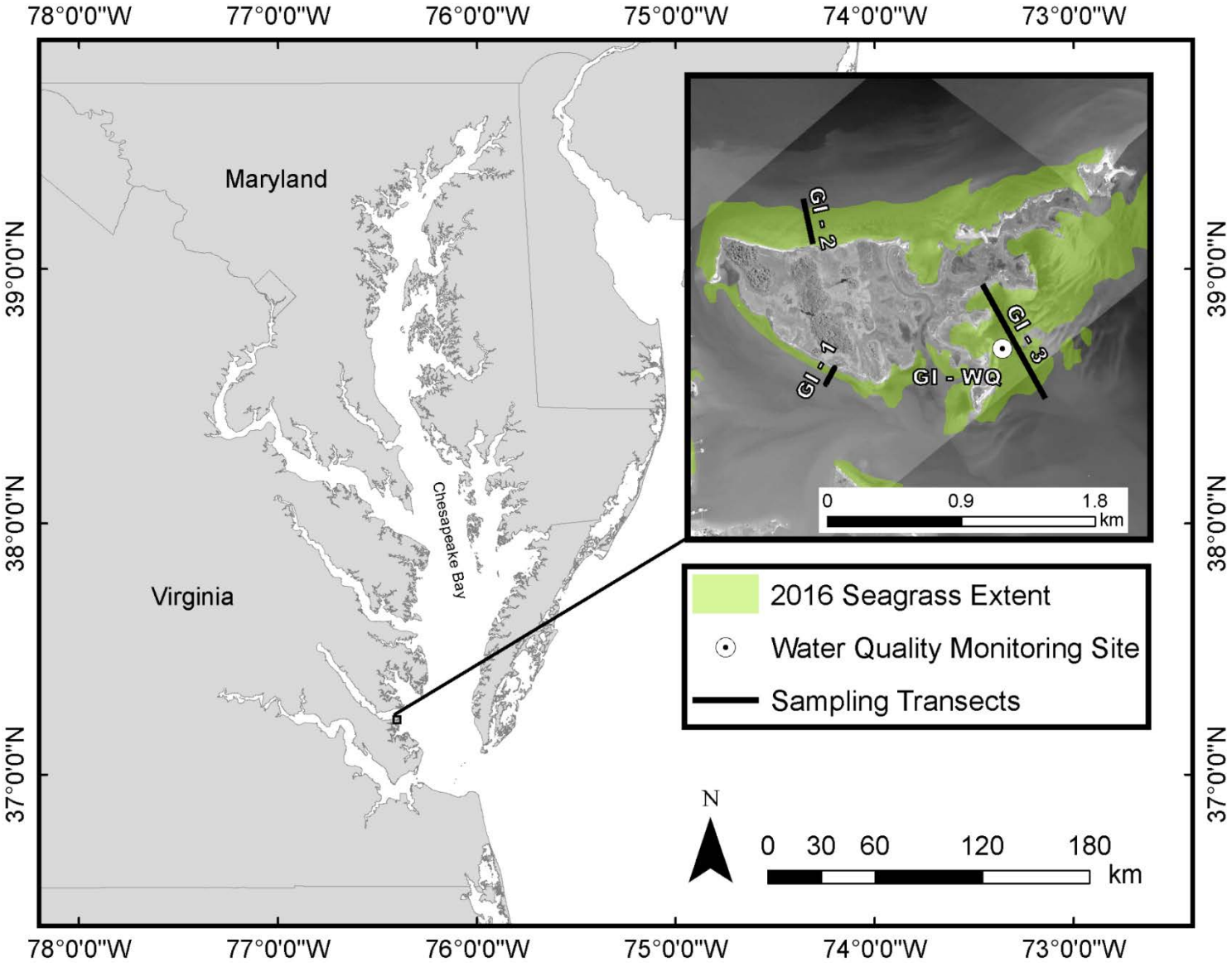
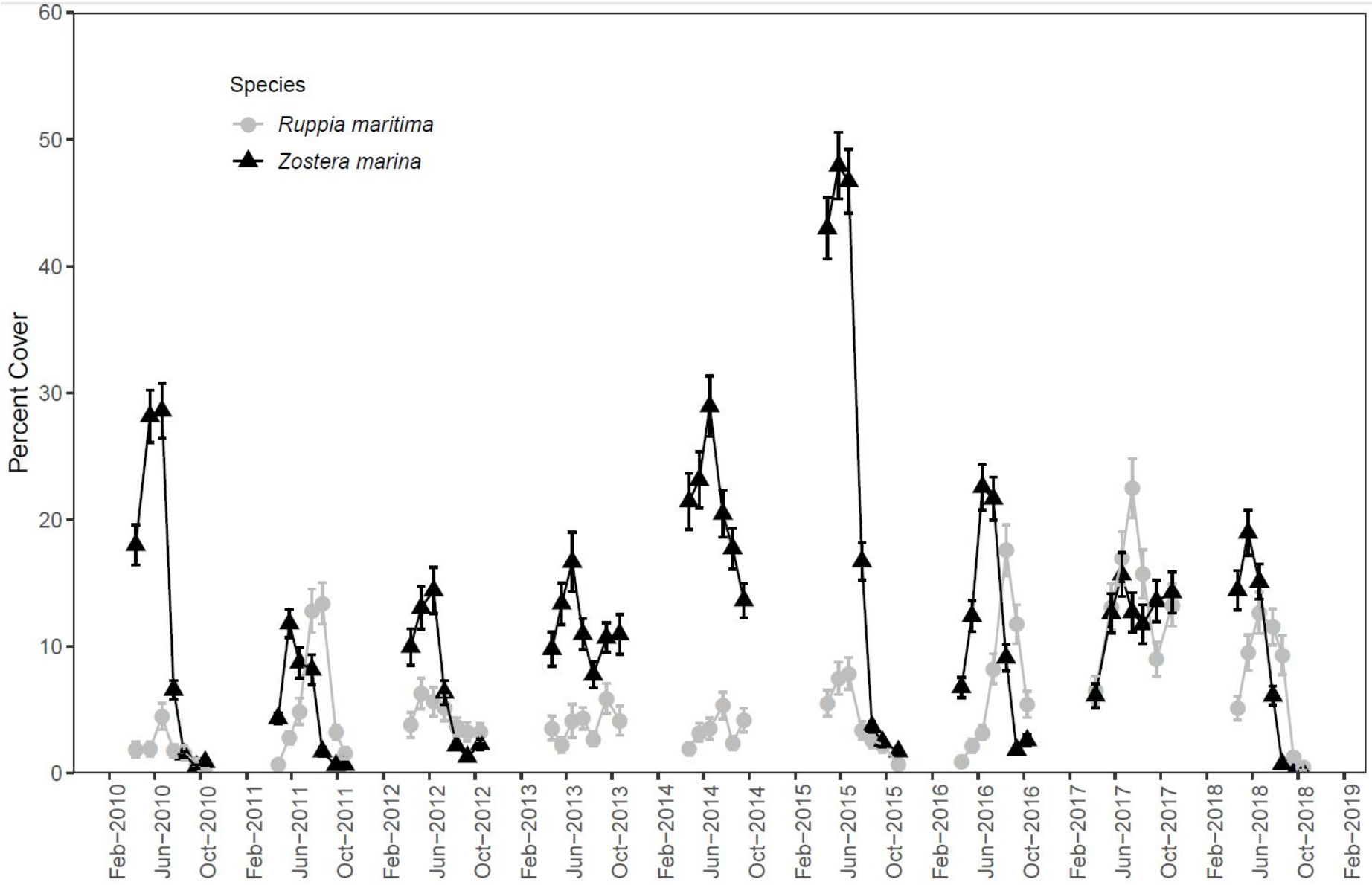
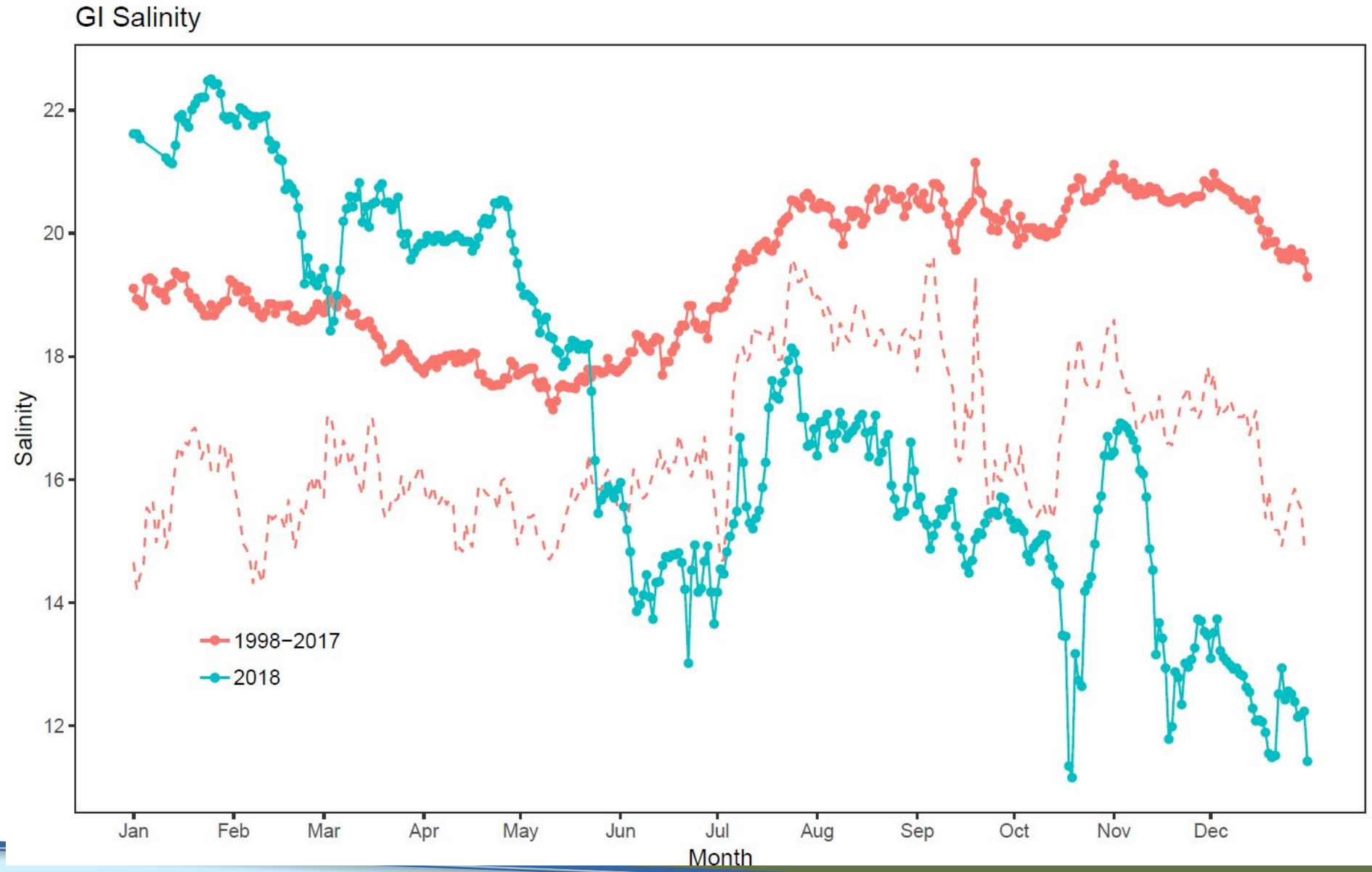
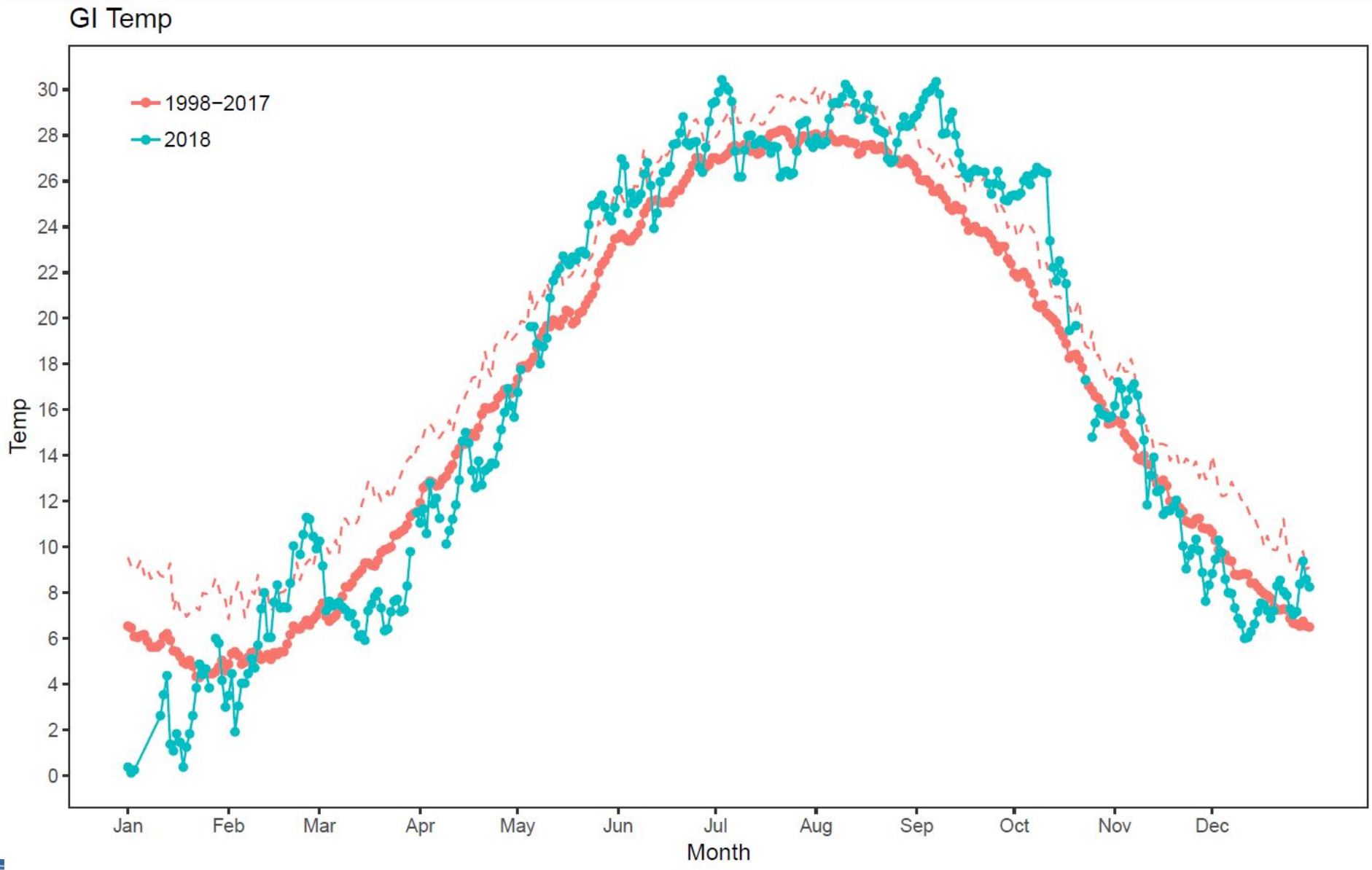
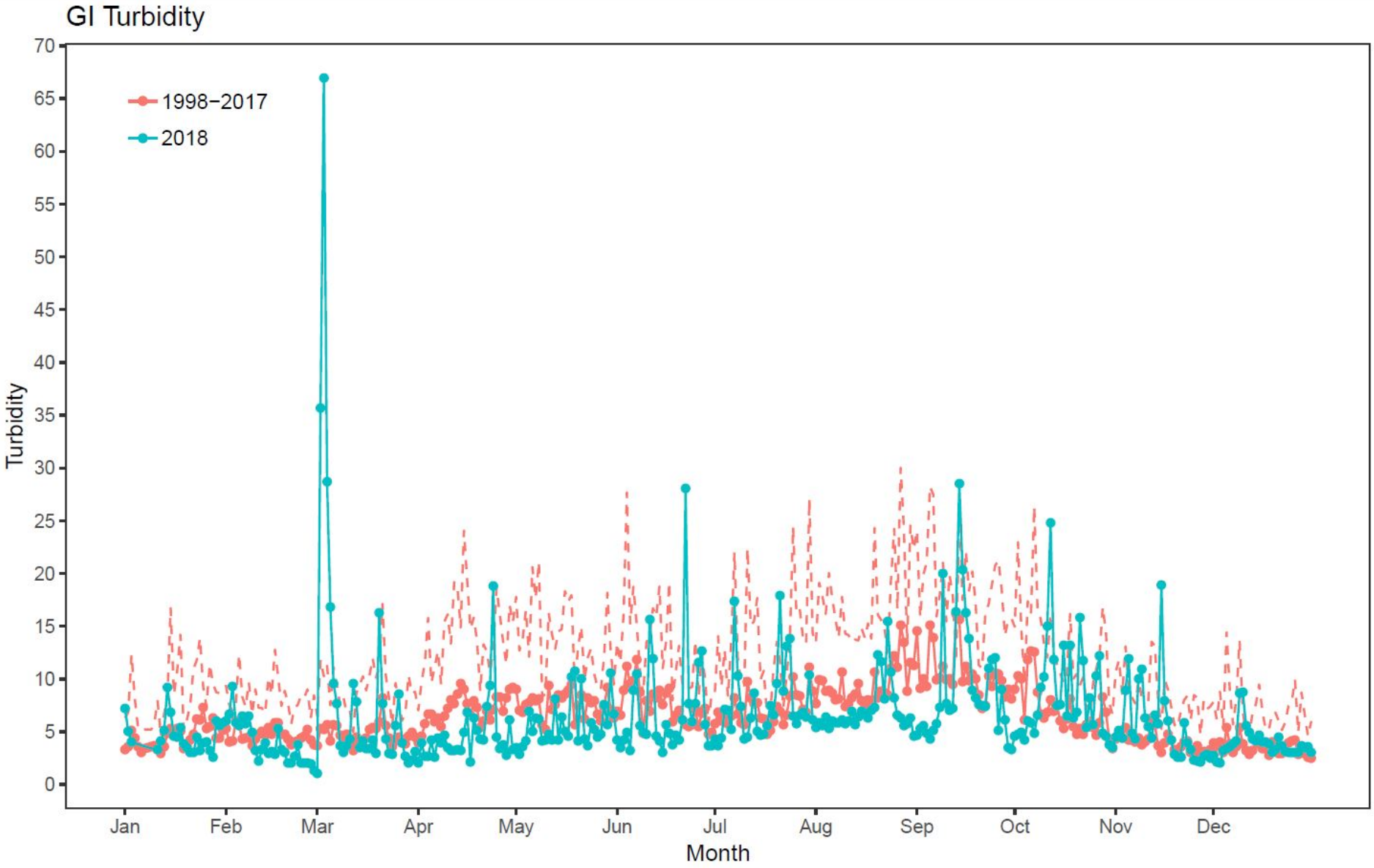
VIMS


78°0'0"W
77°0'0"W
76°0'0"W
75°0'0"W
74°0'0"W
73°0'0"W
39°0'0"N
38°0'0"N
37°0'0"N
Maryland
Virginia
Chesapeake Bay
GI - 2
GI - 3
GI - 1
GI - WQ
0
0.9
1.8
km
2016 Seagrass Extent
Water Quality Monitoring Site
Sampling Transects
N
0 30 60 120 180
km


Species
Ruppia maritima
Zostera marina
Percent Cover
60
50
40
30
20
10
0
Feb–2010
Jun–2010
Oct–2010
Feb–2011
Jun–2011
Oct–2011
Feb–2012
Jun–2012
Oct–2012
Feb–2013
Jun–2013
Oct–2013
Feb–2014
Jun–2014
Oct–2014
Feb–2015
Jun–2015
Oct–2015
Feb–2016
Jun–2016
Oct–2016
Feb–2017
Jun–2017
Oct–2017
Feb–2018
Jun–2018
Oct–2018
Feb–2019


GI Salinity
Salinity
22
20
18
16
14
12
1998−2017
2018
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month


GI Temp
1998−2017
2018
Temp
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month


GI Turbidity
1998–2017
2018
Turbidity
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month

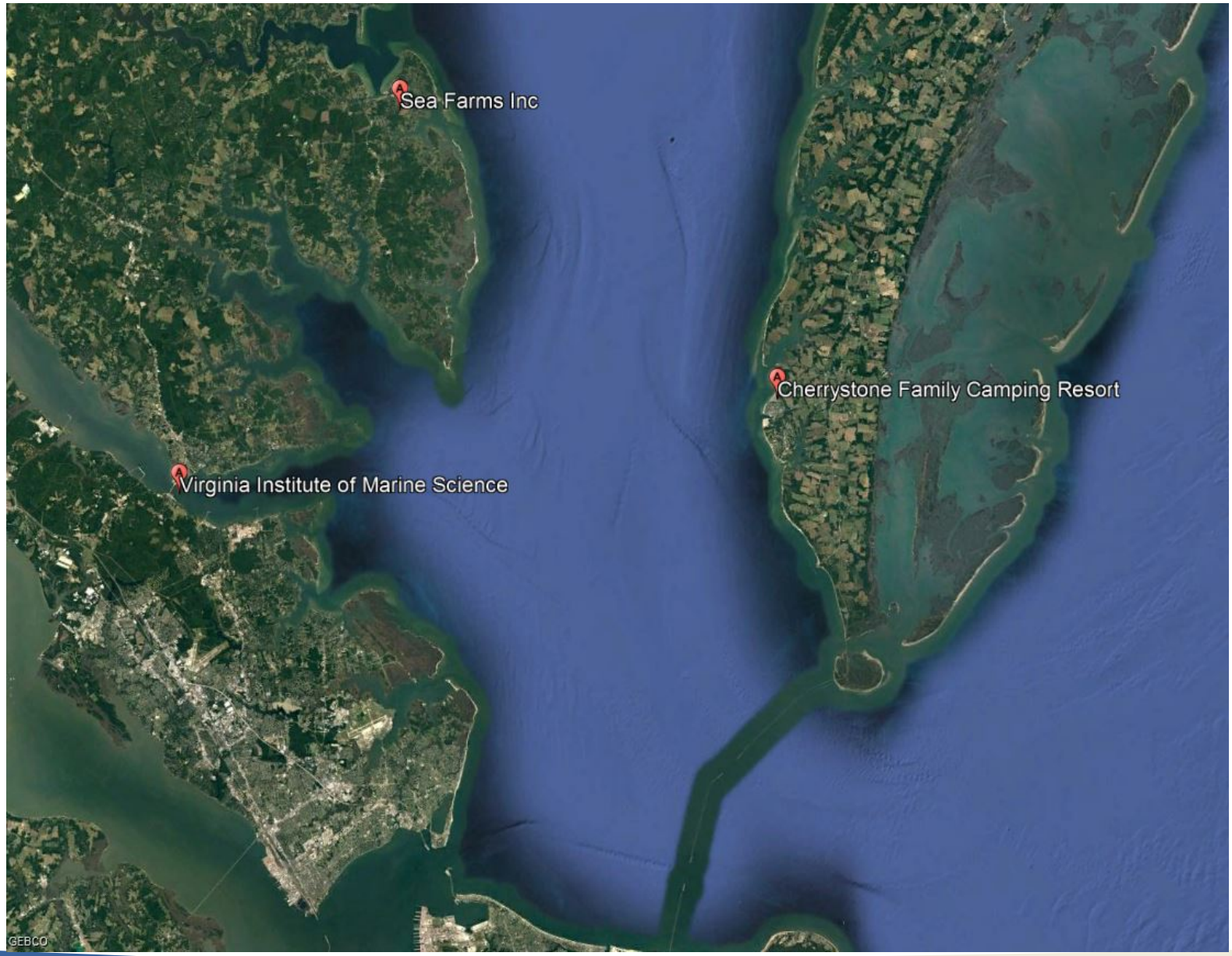
# Oyster Aquaculture/SAV Interactions

- Quantify the effects (positive or negative) of commercial-scale floating oyster aquaculture on SAV health and distribution, water quality, and benthic communities within SAV beds.

- Develop, if possible, approaches to reduce or eliminate any observed negative impacts.

- Provide sound science in support of management decisions when grasses spread into areas with existing aquaculture.

# Oyster Aquaculture/SAV Interactions


Sea Farms Inc
Cherrystone Family Camping Resort
Virginia Institute of Marine Science
GEBCO

# Cherrystone

# Milford Haven

# Sampling Plan

- Before/After Design
- 3 control areas and 2 within farm sampling areas (1 directly beneath floats and 1 in between rows)
- 4 spots per area haphazardly chosen for sampling
- 4 spots X 5 areas = 20 samples/cores per farm per sampling visit
- Before sampling completed in June – First after sampling will be either late July or early August – final sampling for the season will occur in mid-September to early October

# Sampling Plan

- SAV Biomass
- Infauna
- Epifauna
- Epiphytes
- Sediment nutrients/grain size/organic content
- Aerial coverage using drone
- Water Quality – Run transects towing a YSI through the farm and through control areas
- Light: During the next sampling, take LICOR readings throughout the day directly under cages, in rows in between cages, and in control areas – deploy HOBO light loggers
- Deploy HOBO loggers to continuously measure temperature