# Alligator Harbor Aquatic Preserve

## Water Column

### Nutrients

#### Total Nitrogen

Total nitrogen increased by an average of 0.01 mg/L per year.

#### Total Phosphorus

Total phosphorus increased by an average of less than 0.01 mg/L per year.

### Water Quality

#### Dissolved Oxygen - Discrete

Dissolved oxygen decreased by an average of 0.03 mg/L per year.

#### Dissolved Oxygen - Continuous

No detectable change in dissolved oxygen was observed at one location. A statistical model could not be fitted for two stations.

#### Dissolved Oxygen Saturation - Discrete

A statistical model could not be fitted for dissolved oxygen saturation.

#### Dissolved Oxygen Saturation - Continuous

No detectable change in dissolved oxygen saturation was observed at one location. A statistical model could not be fitted for two stations.

#### Salinity - Discrete

Salinity decreased by an average of 0.04 PPT per year.

#### Salinity - Continuous

No detectable change in salinity was observed at one location. A statistical model could not be fitted for two stations.

#### Water Temperature - Discrete

Water temperature showed no detectable trend between 1996 and 2024.

#### Water Temperature - Continuous

No detectable change in water temperature was observed at one location. A statistical model could not be fitted for two stations.

#### pH - Discrete

pH decreased by an average of 0.01 pH per year.

#### pH - Continuous

At one program location, pH increased by 0.03 pH units per year. A statistical model could not be fitted for two stations.

### Water Clarity

#### Turbidity - Discrete

Turbidity decreased by an average of 0.11 NTU per year, indicating an increase in water clarity.

#### Turbidity - Continuous

No detectable change in turbidity was observed at one location. A statistical model could not be fitted for two stations.

#### Total Suspended Solids - Discrete

A statistical model could not be fitted for total suspended solids.

#### Chlorophyll a, Uncorrected for Pheophytin - Discrete

Chlorophyll a, uncorrected for pheophytin increased by an average of 0.15 µg/L per year, indicating a decrease in water clarity.

#### Chlorophyll a, Corrected for Pheophytin - Discrete

A statistical model could not be fitted for chlorophyll a, corrected for pheophytin.

#### Secchi Depth - Discrete

Secchi depth showed no detectable trend between 1998 and 2024.

#### Colored Dissolved Organic Matter - Discrete

Colored dissolved organic matter showed no detectable trend between 2001 and 2024.

## Submerged Aquatic Vegetation

### Percent Cover

#### Percent Cover

Annual decreases in percent cover were observed in manatee grass (-1.2%) and drift algae (-2.4%). No detectable change in percent cover was observed in shoal grass and turtle grass. Trends could not be evaluated for star grass and widgeon grass due to insufficient data.

# Apalachicola Bay Aquatic Preserve

## Water Column

### Nutrients

#### Total Nitrogen

Total nitrogen increased by an average of less than 0.01 mg/L per year.

#### Total Phosphorus

Total phosphorus showed no detectable trend between 1992 and 2024.

### Water Quality

#### Dissolved Oxygen - Discrete

Dissolved oxygen decreased by an average of 0.02 mg/L per year.

#### Dissolved Oxygen - Continuous

At four locations there was a decrease in dissolved oxygen between 0.02 and 0.06 mg/L per year. No detectable change in dissolved oxygen was observed at one location.

#### Dissolved Oxygen Saturation - Discrete

Dissolved oxygen saturation increased by an average of 0.35% per year.

#### Dissolved Oxygen Saturation - Continuous

At four locations there was a decrease in dissolved oxygen saturation between 0.15 and 0.75% per year. No detectable change in dissolved oxygen saturation was observed at one location.

#### Salinity - Discrete

Salinity decreased by an average of 0.09 PPT per year.

#### Salinity - Continuous

At one program location, salinity increased by 0.01 PPT per year. No detectable change in salinity was observed at four locations.

#### Water Temperature - Discrete

Water temperature increased by an average of 0.02°C per year.

#### Water Temperature - Continuous

At three program locations, water temperature increased between 0.02 and 0.04°C per year. No detectable change in water temperature was observed at two locations.

#### pH - Discrete

pH decreased by an average of 0.01 pH per year.

#### pH - Continuous

At four locations there was a decrease in pH between 0.00 and 0.01 pH units per year. No detectable change in pH was observed at one location.

### Water Clarity

#### Turbidity - Discrete

Turbidity showed no detectable trend between 1992 and 2024.

#### Turbidity - Continuous

At one program location, turbidity increased by 0.70 NTU per year. At two locations there was a decrease in turbidity between 0.11 and 0.19 NTU per year. No detectable change in turbidity was observed at two locations.

#### Total Suspended Solids - Discrete

Total suspended solids showed no detectable trend between 1992 and 2024.

#### Chlorophyll a, Uncorrected for Pheophytin - Discrete

Chlorophyll a, uncorrected for pheophytin increased by an average of 0.25 µg/L per year, indicating a decrease in water clarity.

#### Chlorophyll a, Corrected for Pheophytin - Discrete

Chlorophyll a, corrected for pheophytin increased by an average of 0.29 µg/L per year, indicating a decrease in water clarity.

#### Secchi Depth - Discrete

Secchi depth became shallower by an average of less than 0.01 m per year, indicating a decrease in water clarity.

#### Colored Dissolved Organic Matter - Discrete

A statistical model could not be fitted for colored dissolved organic matter.

### Nekton

#### Presence/Absence

The median annual number of taxa was 0.74 based on 4,967 observations collected by 4.8 m trawl between 2000 and 2024.

## Coastal Wetlands

### Species Composition

#### Total/Canopy Percent Cover

Between 2022 and 2023, the median annual number of species for mangroves and associates was 1 based on 4 observations. Between 2014 and 2023, the median annual number of species for marsh was 1.5 based on 144 observations. Between 2014 and 2023, the median annual number of species for marsh succulents was 3 based on 56 observations.

## Submerged Aquatic Vegetation

### Percent Cover

#### Percent Cover

An annual decrease in percent cover was observed in drift algae (-2.6%). No detectable change in percent cover was observed in shoal grass. Trends could not be evaluated for widgeon grass due to insufficient data.

# Big Bend Seagrasses Aquatic Preserve

## Water Column

### Nutrients

#### Total Nitrogen

Total nitrogen increased by an average of 0.01 mg/L per year.

#### Total Phosphorus

Total phosphorus increased by an average of less than 0.01 mg/L per year.

### Water Quality

#### Dissolved Oxygen - Discrete

Dissolved oxygen showed no detectable trend between 1985 and 2024.

#### Dissolved Oxygen - Continuous

At two program locations, dissolved oxygen increased between 0.05 and 0.09 mg/L per year. At one program location, dissolved oxygen increased by 0.06 mg/L per year. No detectable change in dissolved oxygen was observed at five locations. A statistical model could not be fitted for one station.

#### Dissolved Oxygen Saturation - Discrete

Dissolved oxygen saturation showed no detectable trend between 1999 and 2024.

#### Dissolved Oxygen Saturation - Continuous

At one program location, dissolved oxygen saturation increased by 0.81% per year. No detectable change in dissolved oxygen saturation was observed at three locations. A statistical model could not be fitted for one station.

#### Salinity - Discrete

Salinity decreased by an average of 0.04 PPT per year.

#### Salinity - Continuous

At two program locations, salinity increased between 0.53 and 0.76 PPT per year. At four locations there was a decrease in salinity between 0.00 and 0.75 PPT per year. No detectable change in salinity was observed at one location. A statistical model could not be fitted for three stations.

#### Water Temperature - Discrete

Water temperature increased by an average of 0.04°C per year.

#### Water Temperature - Continuous

At four program locations, water temperature increased between 0.02 and 0.30°C per year. At one program location, water temperature increased by 0.37°C per year. No detectable change in water temperature was observed at six locations. A statistical model could not be fitted for four stations.

#### pH - Discrete

pH showed no detectable trend between 1964 and 2024.

#### pH - Continuous

At two program locations, pH increased between 0.01 and 0.02 pH units per year. At four locations there was a decrease in pH between 0.00 and 0.06 pH units per year. No detectable change in pH was observed at two locations. A statistical model could not be fitted for one station.

### Water Clarity

#### Turbidity - Discrete

Turbidity decreased by an average of 0.04 NTU per year, indicating an increase in water clarity.

#### Turbidity - Continuous

At one program location, turbidity increased by 1.22 NTU per year. At two locations there was a decrease in turbidity between 0.55 and 0.99 NTU per year. No detectable change in turbidity was observed at one location. A statistical model could not be fitted for one station.

#### Total Suspended Solids - Discrete

Total suspended solids decreased by an average of 0.07 mg/L per year, indicating an increase in water clarity.

#### Chlorophyll a, Uncorrected for Pheophytin - Discrete

Chlorophyll a, uncorrected for pheophytin increased by an average of 0.06 µg/L per year, indicating a decrease in water clarity.

#### Chlorophyll a, Corrected for Pheophytin - Discrete

Chlorophyll a, corrected for pheophytin increased by an average of 0.06 µg/L per year, indicating a decrease in water clarity.

#### Secchi Depth - Discrete

Secchi depth showed no detectable trend between 1991 and 2024.

#### Colored Dissolved Organic Matter - Discrete

Colored dissolved organic matter increased by an average of 1.63 PCU per year, indicating a decrease in water clarity.

## Coastal Wetlands

### Species Composition

#### Total/Canopy Percent Cover

Between 2013 and 2016, the median annual number of species for marsh was 2 based on 6 observations.

## Submerged Aquatic Vegetation

### Percent Cover

#### Percent Cover

An annual increase in percent cover was observed in drift algae (0.8%). Annual decreases in percent cover were observed in manatee grass (-0.4%), shoal grass (-0.4%), and turtle grass (-0.5%). No detectable change in percent cover was observed in star grass and widgeon grass.

# Pinellas County Aquatic Preserve

## Water Column

### Nutrients

#### Total Nitrogen

Total nitrogen decreased by an average of 0.01 mg/L per year.

#### Total Phosphorus

Total phosphorus decreased by an average of less than 0.01 mg/L per year.

### Water Quality

#### Dissolved Oxygen - Discrete

Dissolved oxygen showed no detectable trend between 1974 and 2024.

#### Dissolved Oxygen - Continuous

#### Dissolved Oxygen Saturation - Discrete

Dissolved oxygen saturation increased by an average of 0.12% per year.

#### Dissolved Oxygen Saturation - Continuous

#### Salinity - Discrete

Salinity decreased by an average of 0.1 PPT per year.

#### Salinity - Continuous

#### Water Temperature - Discrete

Water temperature increased by an average of 0.01°C per year.

#### Water Temperature - Continuous

At one program location, water temperature increased by 0.06°C per year. A statistical model could not be fitted for three stations.

#### pH - Discrete

pH decreased by an average of less than 0.01 pH per year.

#### pH - Continuous

### Water Clarity

#### Turbidity - Discrete

Turbidity showed no detectable trend between 1995 and 2024.

#### Turbidity - Continuous

#### Total Suspended Solids - Discrete

Total suspended solids decreased by an average of 0.39 mg/L per year, indicating an increase in water clarity.

#### Chlorophyll a, Uncorrected for Pheophytin - Discrete

Chlorophyll a, uncorrected for pheophytin increased by an average of 0.15 µg/L per year, indicating a decrease in water clarity.

#### Chlorophyll a, Corrected for Pheophytin - Discrete

Chlorophyll a, corrected for pheophytin showed no detectable trend between 2000 and 2024.

#### Secchi Depth - Discrete

Secchi depth became deeper by an average of 0.02 m per year, indicating an increase in water clarity.

#### Colored Dissolved Organic Matter - Discrete

Colored dissolved organic matter increased by an average of 0.25 PCU per year, indicating a decrease in water clarity.

### Nekton

#### Presence/Absence

The median annual number of taxa was 0.10 based on 4,407 observations collected by 183 m seine between 1996 and 2022, and the median annual number of taxa was 0.30 based on 5,254 observations collected by 6.1 m trawl between 1989 and 2022.

## Coastal Wetlands

### Species Composition

#### Total/Canopy Percent Cover

Between 2014 and 2014, the median annual number of species for mangroves and associates was 3 based on 1 observations. Between 2014 and 2014, the median annual number of species for marsh was 5 based on 1 observations. Between 2014 and 2014, the median annual number of species for marsh succulents was 3 based on 1 observations.

## Submerged Aquatic Vegetation

### Percent Cover

#### Percent Cover

Annual increases in percent cover were observed in shoal grass (0.3%) and drift algae (2.8%). Total SAV, unknown Halophila, manatee grass, turtle grass, widgeon grass, and attached algae showed no detectable change in percent cover. Trends could not be evaluated for star grass due to insufficient data.

# Southeast Florida Coral Reef Ecosystem Conservation Area

## Water Column

### Nutrients

#### Total Nitrogen

A statistical model could not be fitted for total nitrogen.

#### Total Phosphorus

Total phosphorus decreased by an average of less than 0.01 mg/L per year.

### Water Quality

#### Dissolved Oxygen - Discrete

Dissolved oxygen showed no detectable trend between 1970 and 2023.

#### Dissolved Oxygen - Continuous

#### Dissolved Oxygen Saturation - Discrete

Dissolved oxygen saturation increased by an average of 1% per year.

#### Dissolved Oxygen Saturation - Continuous

#### Salinity - Discrete

Salinity increased by an average of 0.06 PPT per year.

#### Salinity - Continuous

#### Water Temperature - Discrete

Water temperature increased by an average of 0.07°C per year.

#### Water Temperature - Continuous

At nineteen program locations, water temperature increased between 0.03 and 0.09°C per year. No detectable change in water temperature was observed at three locations.

#### pH - Discrete

pH showed no detectable trend between 1972 and 2023.

#### pH - Continuous

### Water Clarity

#### Turbidity - Discrete

A statistical model could not be fitted for turbidity.

#### Turbidity - Continuous

#### Total Suspended Solids - Discrete

A statistical model could not be fitted for total suspended solids.

#### Chlorophyll a, Uncorrected for Pheophytin - Discrete

A statistical model could not be fitted for chlorophyll a, uncorrected for pheophytin.

#### Chlorophyll a, Corrected for Pheophytin - Discrete

A statistical model could not be fitted for chlorophyll a, corrected for pheophytin.

#### Secchi Depth - Discrete

Secchi depth became deeper by an average of 0.26 m per year, indicating an increase in water clarity.

#### Colored Dissolved Organic Matter - Discrete

A statistical model could not be fitted for colored dissolved organic matter.

## Coral/Coral Reef

### Percent Cover

#### Percent Cover

Percent cover increased by an average of less than 0.01% per year between 2003 and 2021.

### Grazers and Reef Dependent Species

#### Presence/Absence

The median annual number of taxa was 294 based on 3,680 observations collected between 1985 and 2020.