Real-Time Springs Monitoring:
The Next Generation in Water Quality Monitoring

Water Quality Monitoring Program

Real-Time Springs

WEEKI WACHEE SPRINGS

CHASSAHOWITZKA SPRINGS

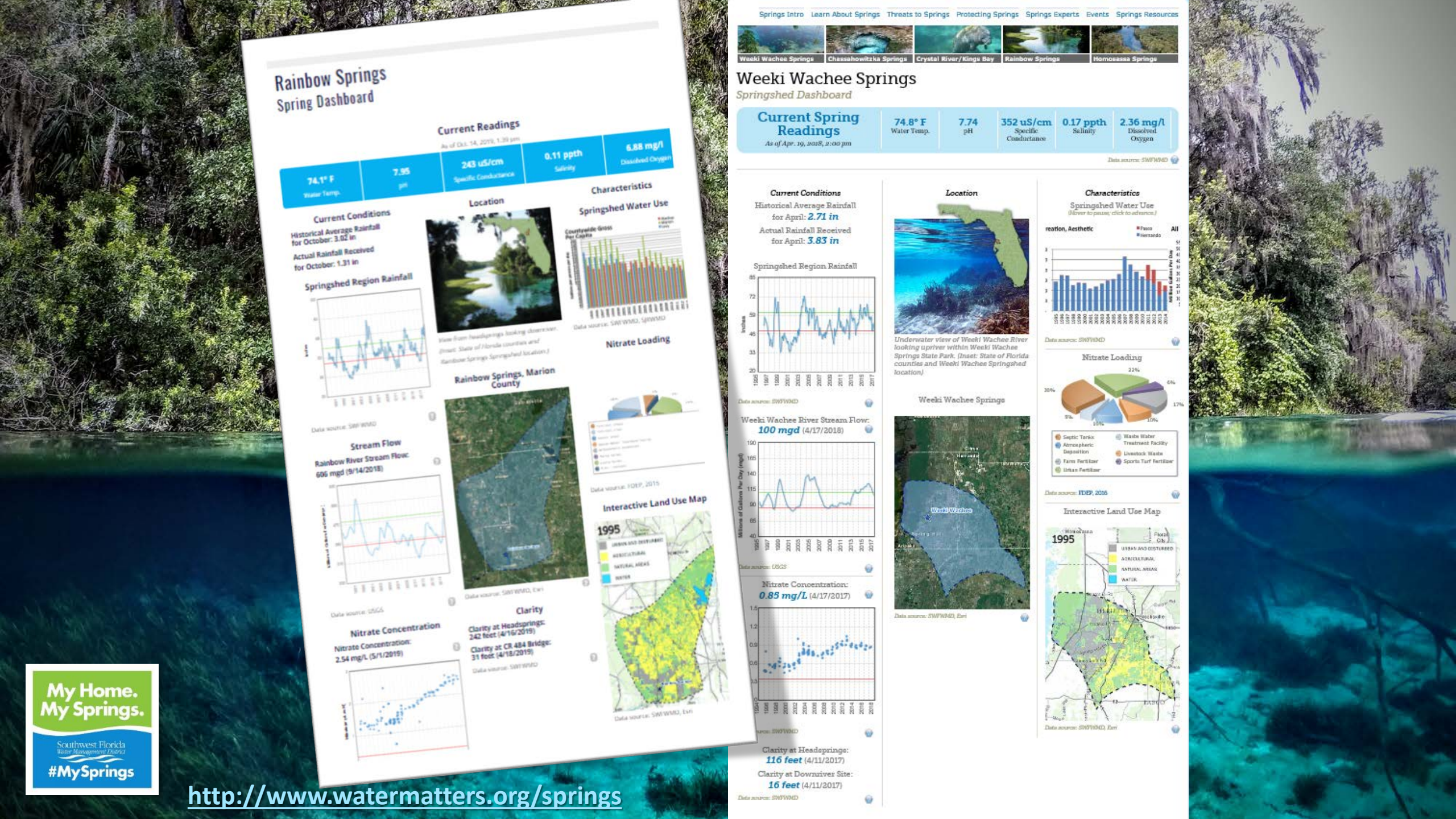
RAINBOW SPRINGS

CRYSTAL RIVER/ KINGS BAY

HOMOSASSA SPRINGS

Continuous Offshore Monitoring

pH
Depth
Salinity
Temperature
Dissolved Oxygen
Specific Conductance
Turbidity
Chlorophyll

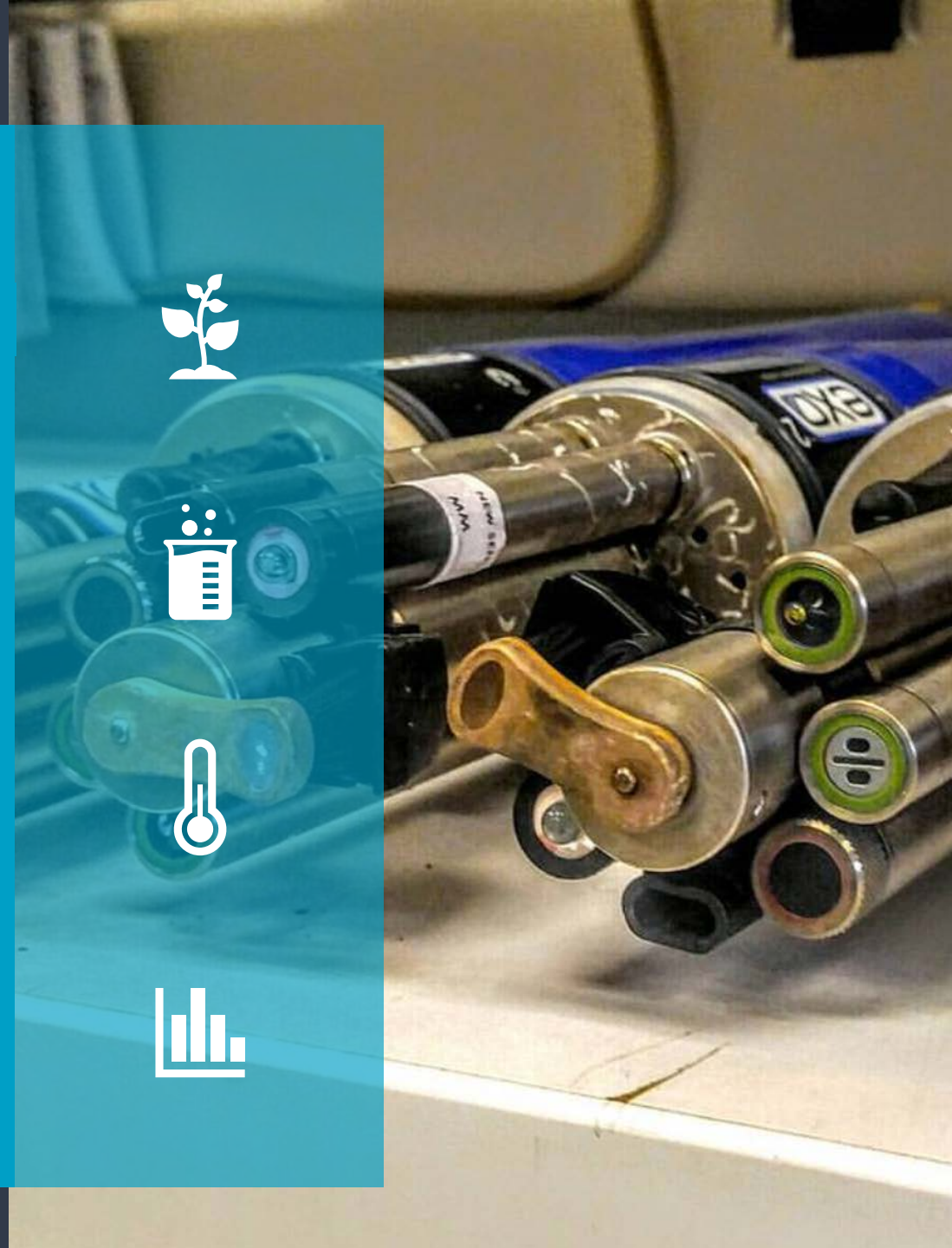


My Home. My Springs.
Southwest Florida Water Management District
#MySprings

http://www.watermatters.org/springs

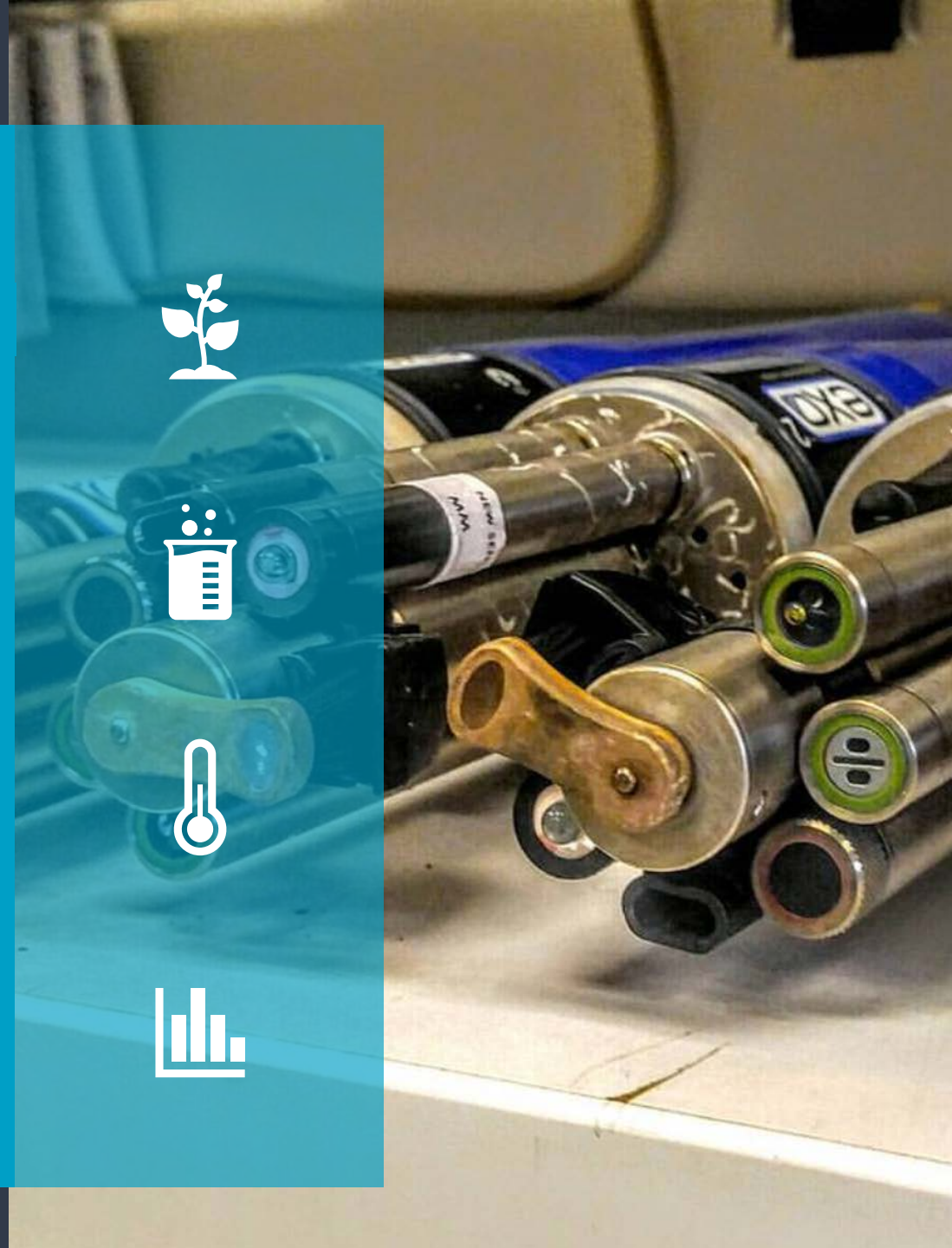
WHY IS REAL-TIME WATER-QUALITY MONITORING IMPORTANT?

- Correlates flow with water quality data in order to identify relationships.
- Monitor water quality in which changes occur
- Reduce the need to collect lab samples
- Provides data immediately
- Identifies gaps in water quality monitoring
- Provide tools for early trend detection
- Detects water quality changes pertaining to weather events (hurricanes, floods, etc.)



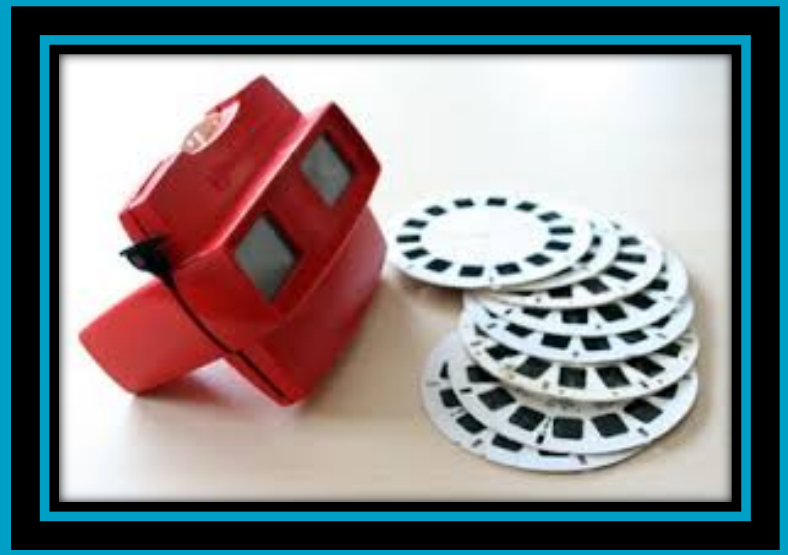
WHAT ARE SOME OF THE CHALLENGES OF REAL-TIME?

- Higher upfront costs
- Telemetry requires a station to be constructed
- Environmental conditions for equipment aren’t always ideal
- Bio-fouling and electrolysis are an uphill battle
- Requires consistent maintenance
- Equipment is susceptible to vandalism



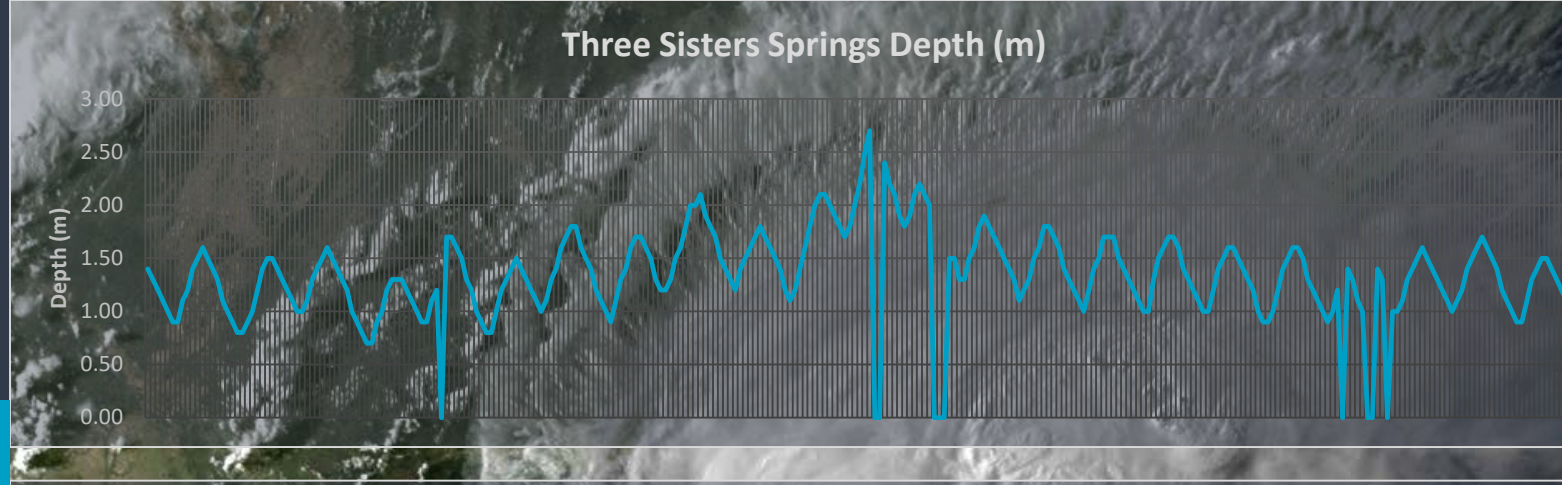
SO WHY CONTINUOUS MONITORING?

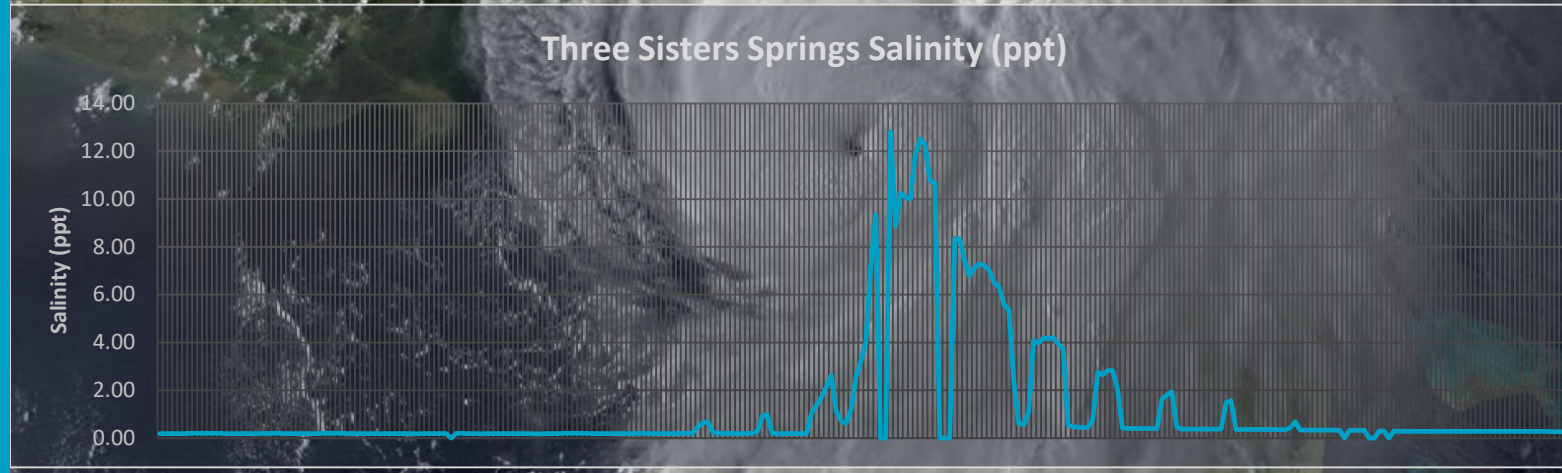
Imagine watching a movie through a View Master.

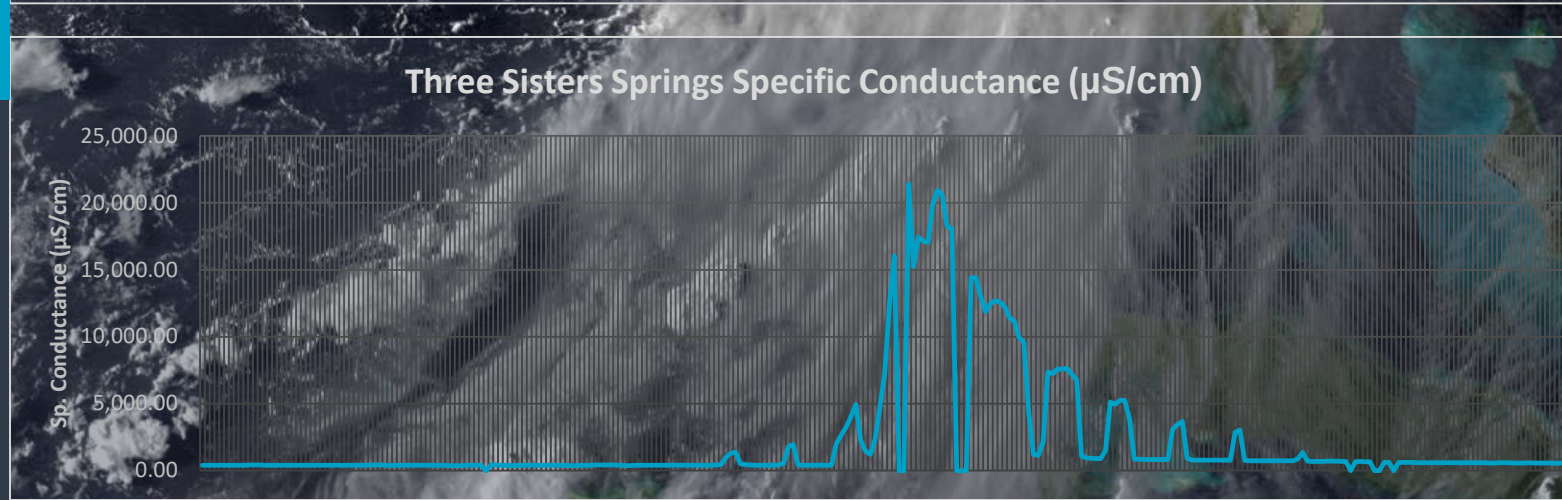


Hurricane Hermine

August 27, 2016 –September 8, 2016

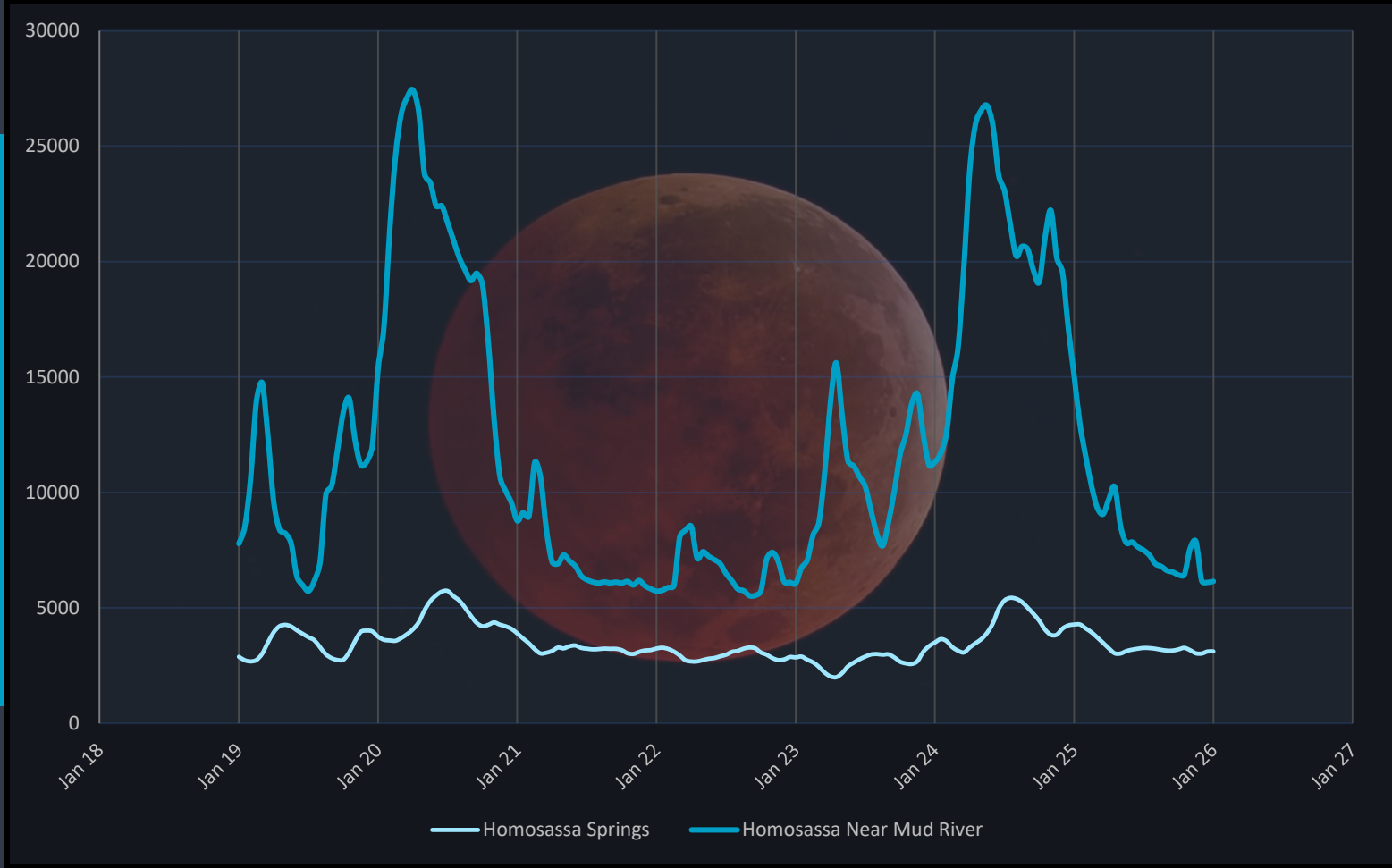






Lunar Eclipse

January 21, 2019

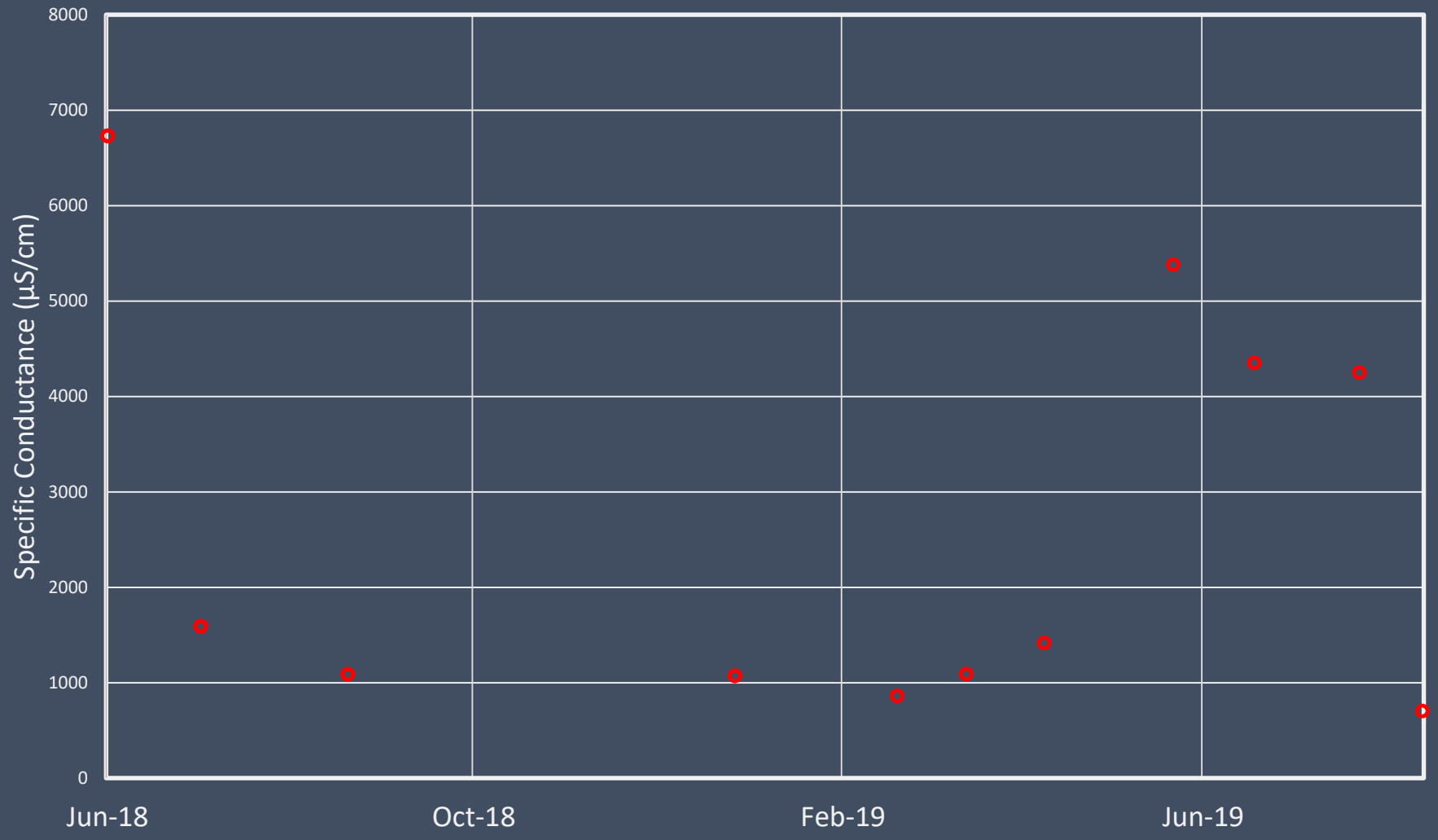


Field Data

FIELD READINGS

12 per year

Chassahowitzka Springs



Continuous Data

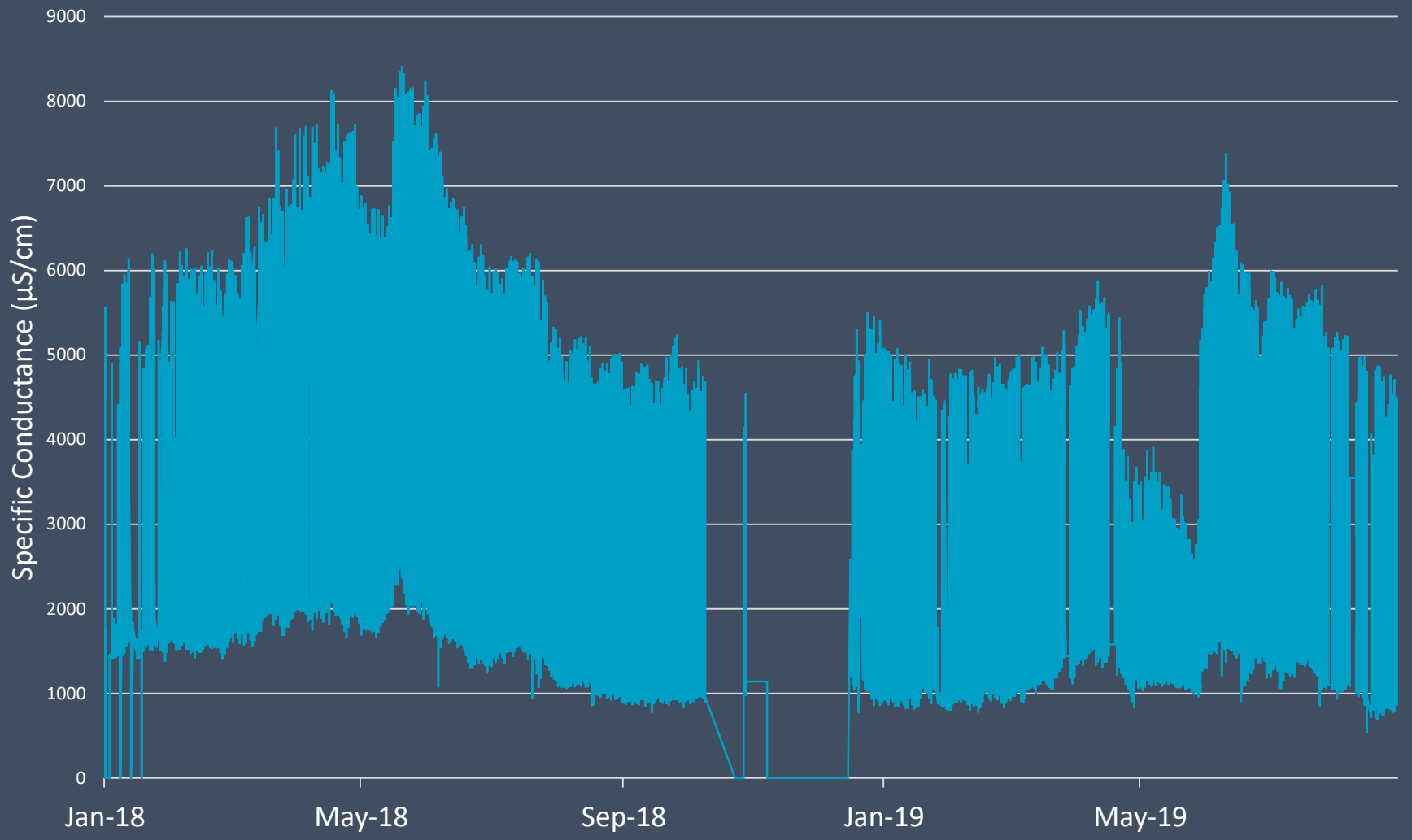
FIELD READINGS

12 per year

CONTINUOUS READINGS

8760 per year

Chassahowitzka Springs



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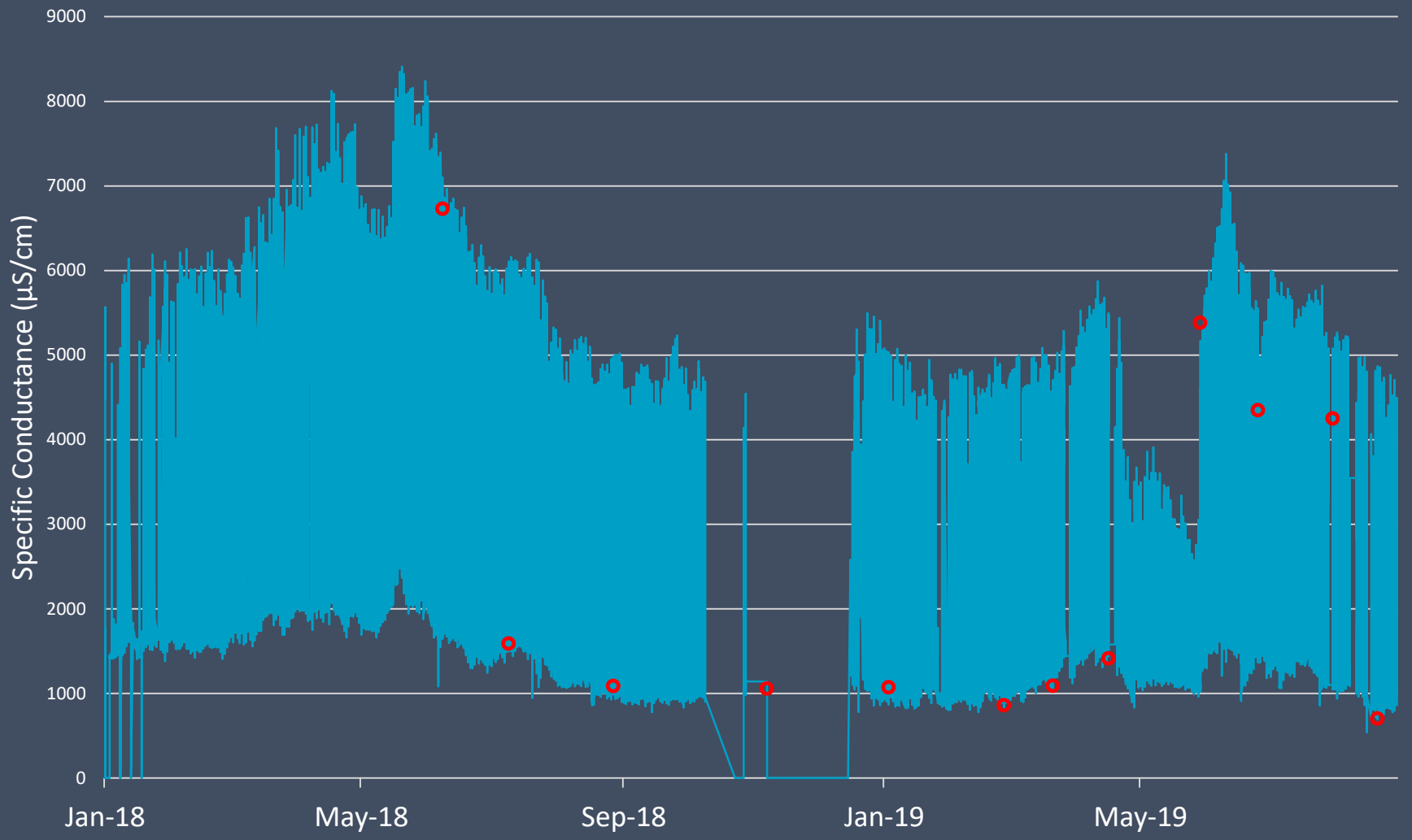

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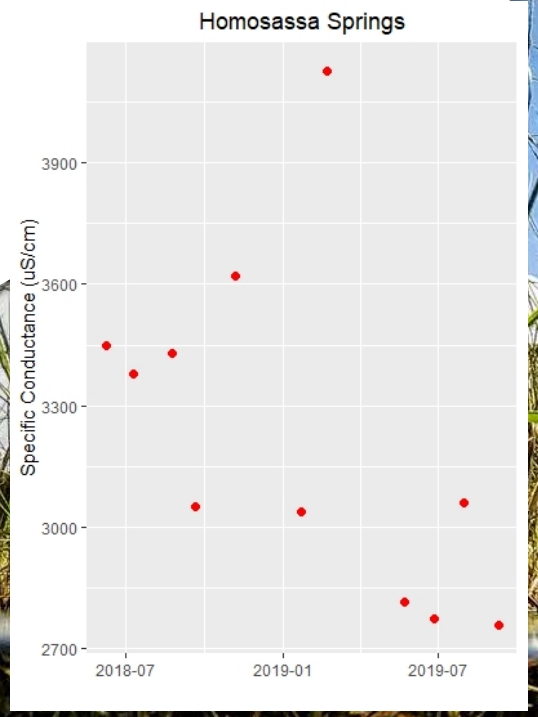
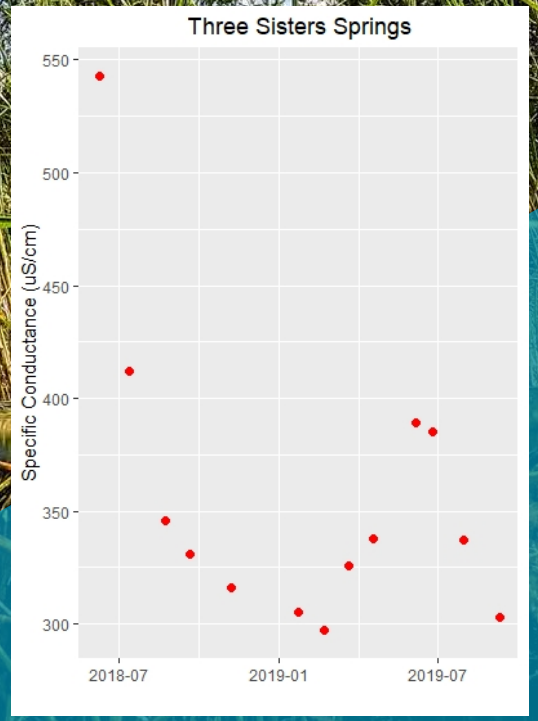
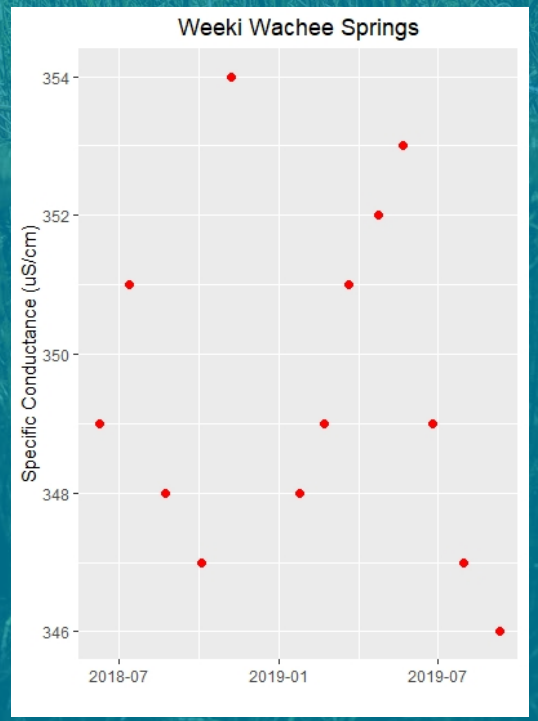
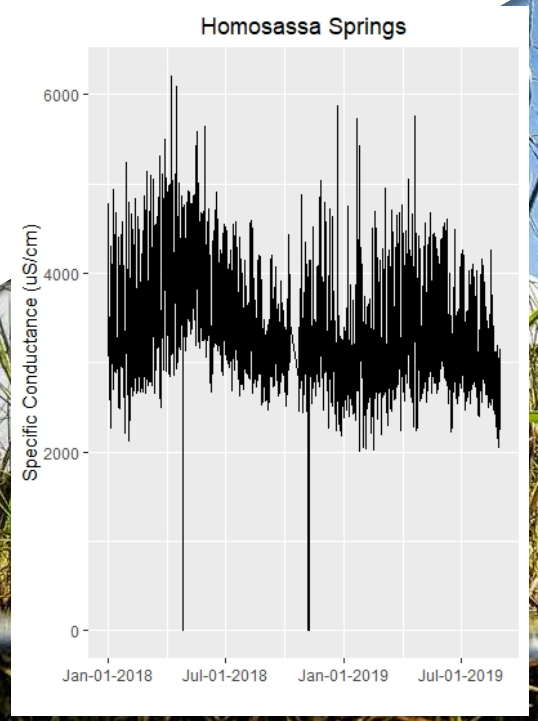
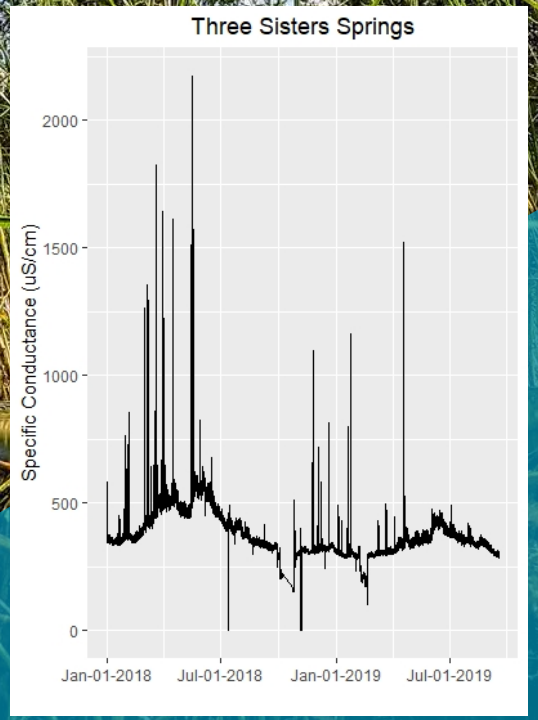


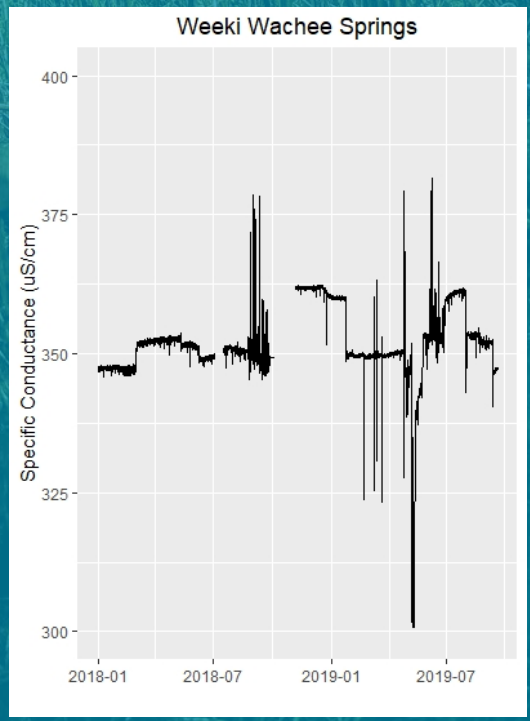




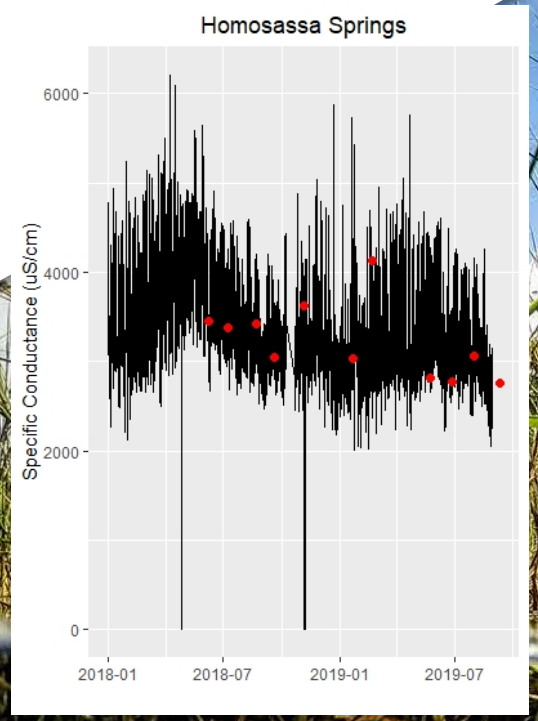
Continuous Data

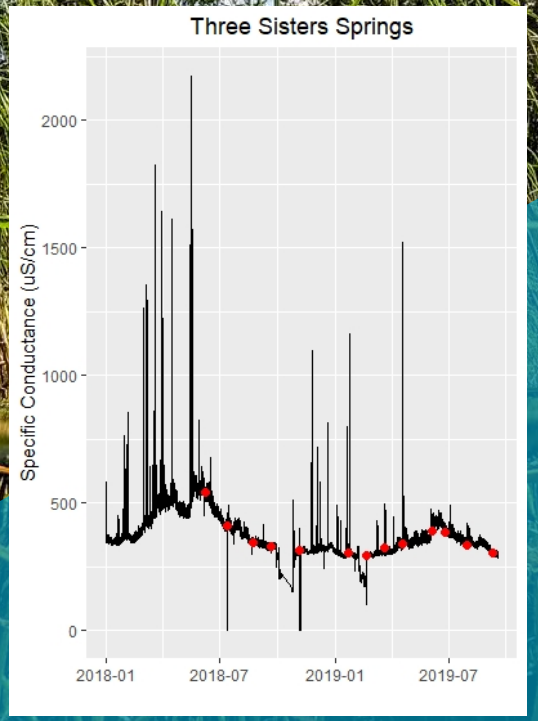


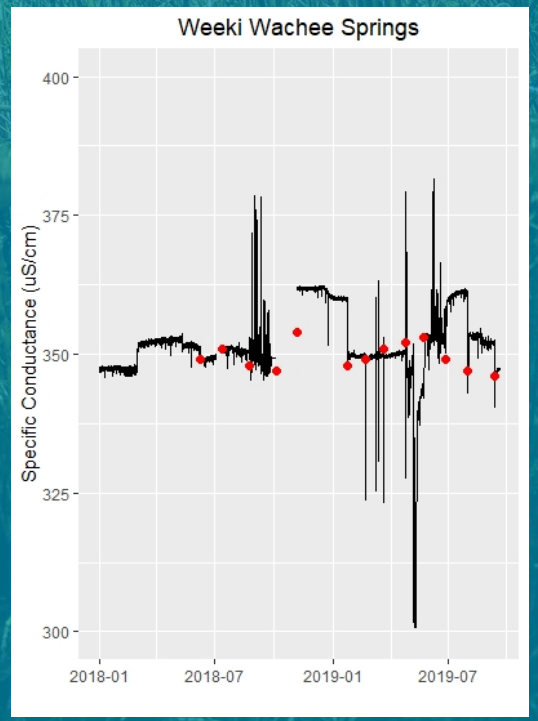




Real-Time vs Field







COST PER STATION

Offshore Continuous Monitoring Stations	Real-Time Springs Stations
Cost per station ≈ $20,000	Cost per station ≈ $14,000
Data points collected per station ≈ 2 million	Data points collected per station ≈ 3 million
Parameters Collected = 8	Parameters Collected = 6
Cost per Reading ≈ $0.01	Cost per Reading ≈ $0.0047

QUESTIONS?