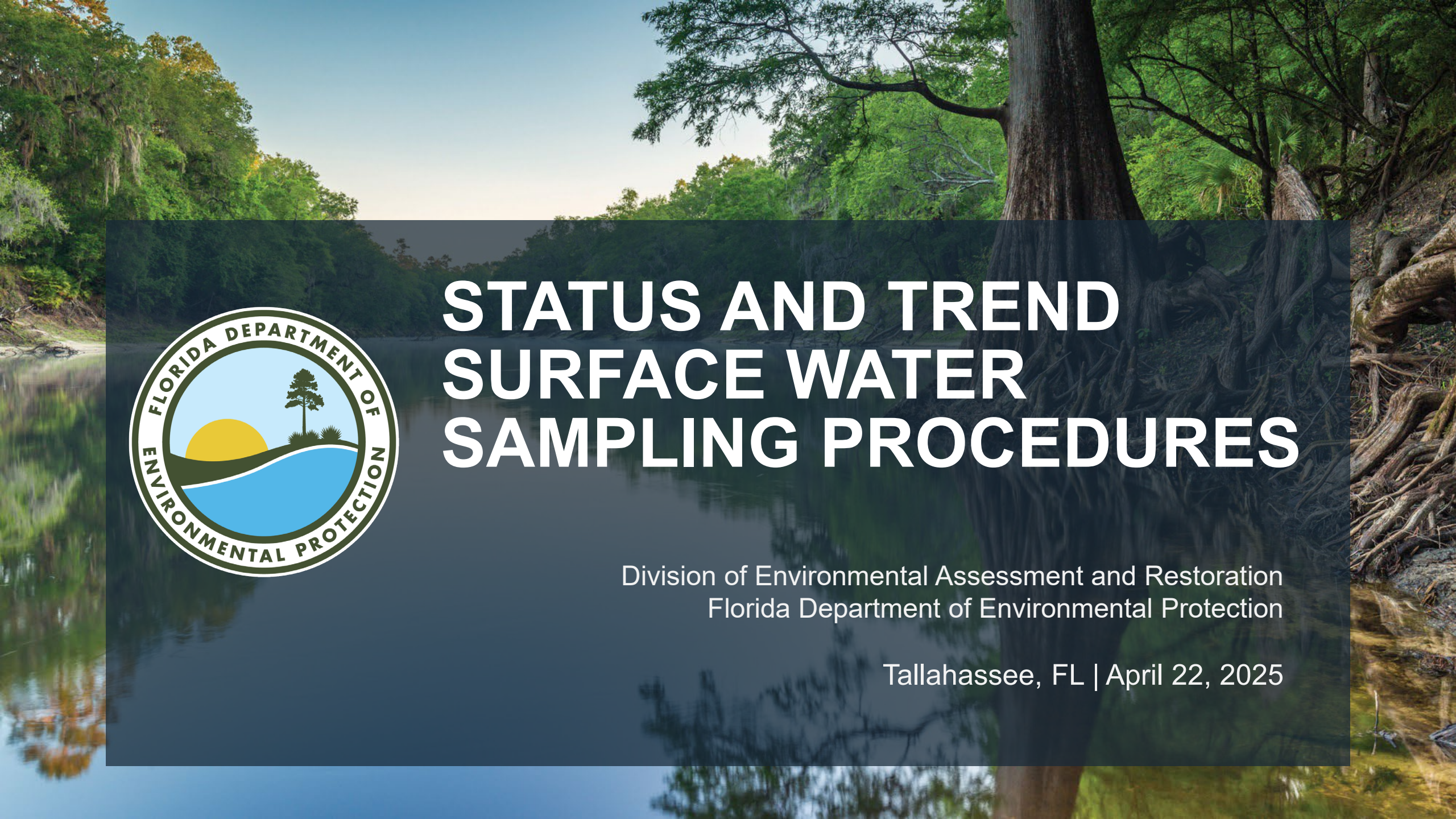


STATUS AND TREND SURFACE WATER SAMPLING PROCEDURES

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

Tallahassee, FL | April 22, 2025

SAMPLING MANUAL

Surface Water Section Five, pages 47-57.

SURFACE WATER SAMPLING

Major Agenda Topics

- When/when not to collect samples.
- Field sheets and field data collection.
- Sample collection and documentation.

Caloosahatchee River Trend Station (East view).

SURFACE WATER SAMPLING

When/when not to collect samples.

ALL SURFACE WATER SITES SAMPLING REQUIREMENTS

- Water at least 10 cm deep to collect samples.
- Must have ≥ 0.5 m^2 free of attached vegetation at sampling point.
- Collect water quality data before collecting sediment or bioassessment data.
- When wading into a water body, enter the water carefully to **avoid disturbing the sediments**. Allow disturbed material to settle before sample collection.

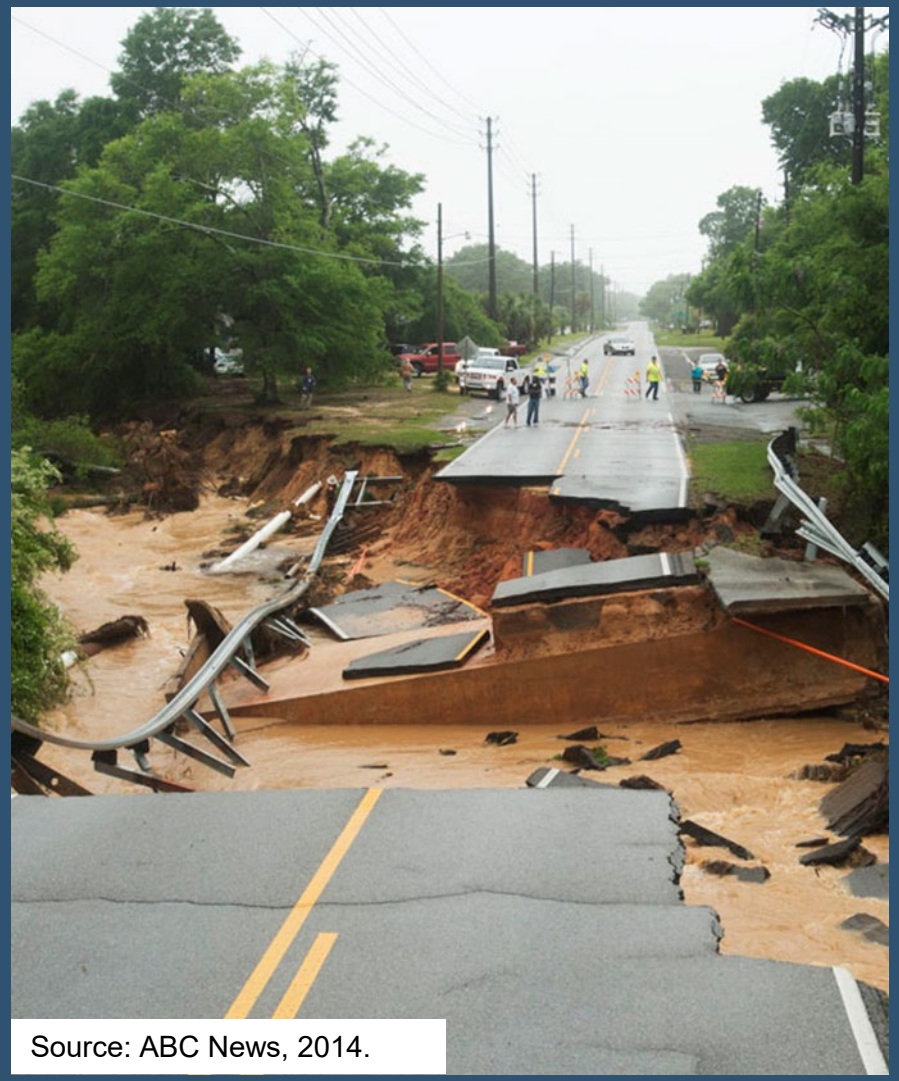
STATUS AND TRENDS SAMPLING REQUIREMENTS FOR FLOWING WATERS

- When sampling from bridge or dock, collect samples from the upstream side whenever possible. Do **not** relocate Trend sites to meet this criterion.
- Always collect water samples upstream from the sampler's body or upstream from the boat.
- If tidally influenced, sample during falling tide (approaching low tide). Tide predictions at: https://tidesandcurrents.noaa.gov/tide_predictions

TREND NETWORK

- All sites are Flowing Waters (Rivers/Streams/Canals).
- Sampled monthly.
  - Field Measurements and Water Samples.
- Same location.
- Located using GNSS unit and permanent landmarks (bridge or gauge).

TREND SAMPLING LOCATIONS



Source: ABC News, 2014.

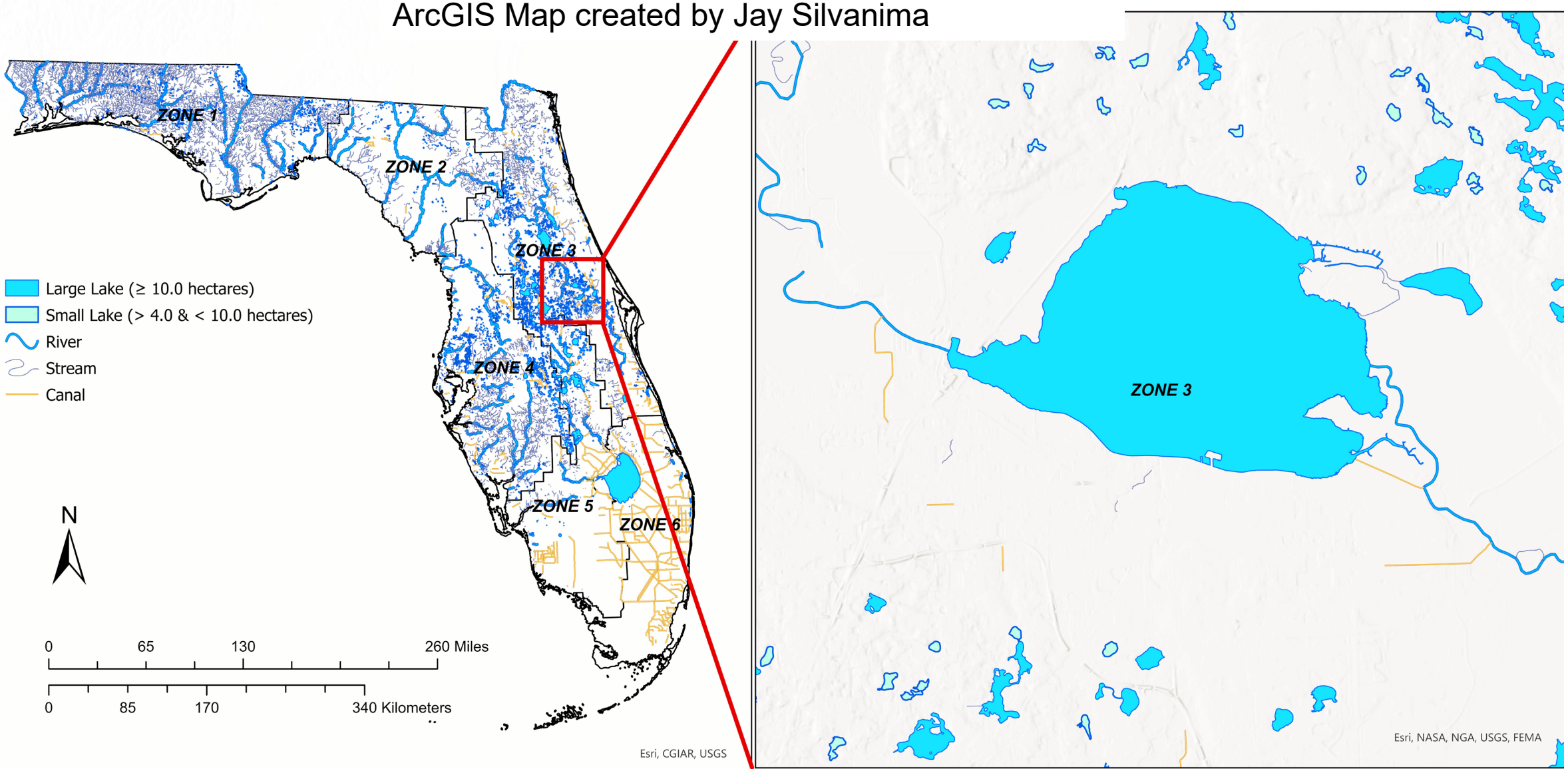
- Stick with the historic location.
- If Trend location is flooded, you can sample if safe to do so.
- Contact Quality Assurance (QA) Officer/Project Manager if any problems or changes with the site.

STATUS SITE SELECTION

- **Random** locations – Maintains statistical validity.
- **All 15 primary sites** must be evaluated **before** alternate sites can be sampled.
- **Alternate sites** must be **evaluated in order**.
- **No gaps allowed** in site evaluation. All sites from the first through the site with the highest number sampled must be sampled or excluded.

STATUS RESOURCE TYPES

ArcGIS Map created by Jay Silvanima



STATUS NETWORK DESIGNATED SAMPLING PERIODS

Table One (Page 127 in S&T Sampling Manual)

Month	Confined Aquifers	Unconfined Aquifers	Canals	Rivers	Streams	Large Lakes	Small Lakes
Jan			60				
Feb	120						
Mar							
Apr				90			
May						90	
Jun							
Jul					90		
Aug							
Sep							90
Oct		120					
Nov							
Dec							

Primary Sampling Period

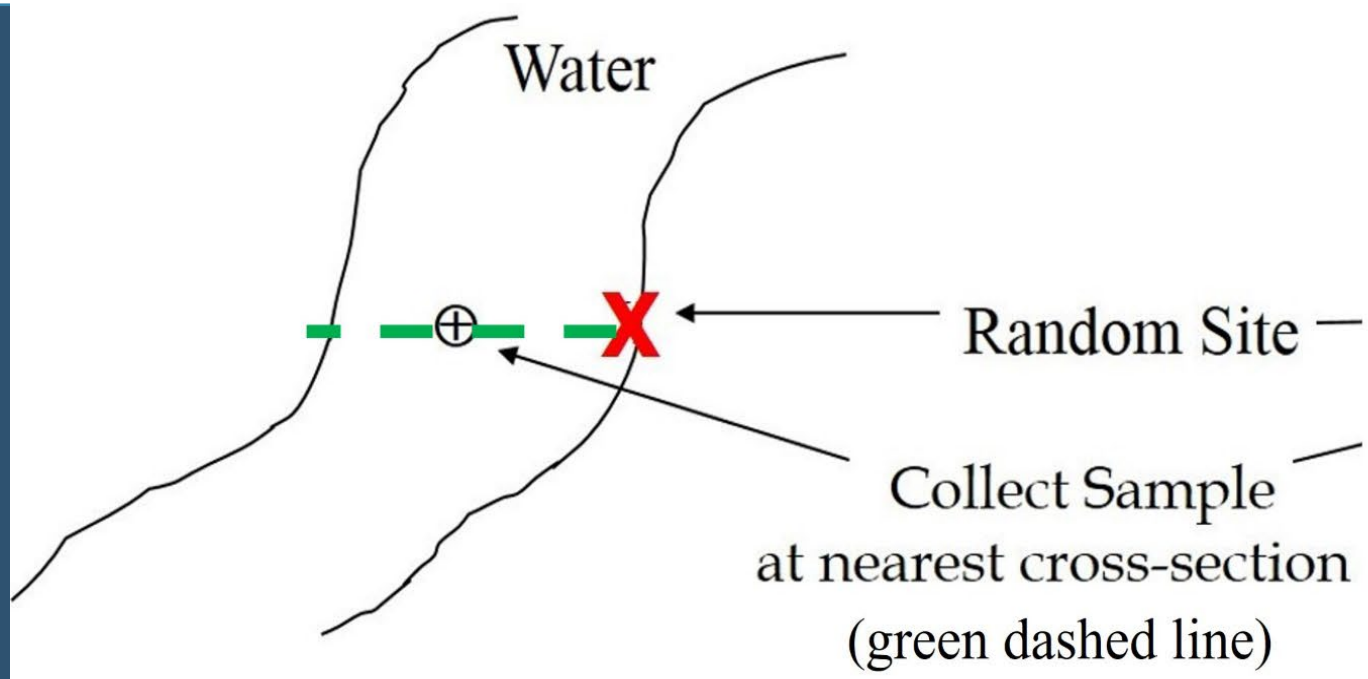
Overflow Sampling Period

STATUS SAMPLING LOCATIONS STREAM/RIVER/CANAL

- Random location represents a cross-section of waterbody (**perpendicular** to the bank/flow).
- Collect in area of waterbody **representative** of the flow (commonly the middle).
- **Do not** move upstream/downstream.
- If random point falls on dry land, move **≤ 50 m** toward nearest point in the water.
- **Do not** sample **Status** sites if **flooded** above banks.

.

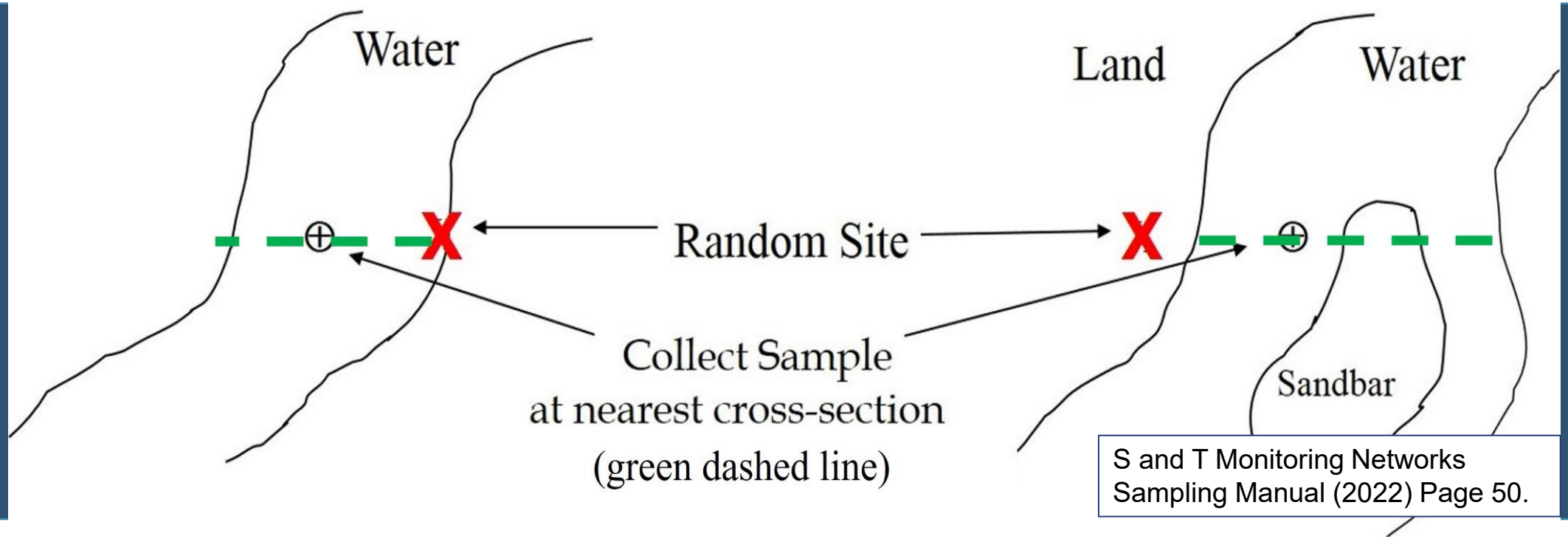
STATUS SAMPLING LOCATIONS



S&T Monitoring Networks
Sampling Manual (2022) Page 50.

Left — Point is in water. Move to representative area of cross-section (no distance limit).

STATUS SAMPLING LOCATIONS



S and T Monitoring Networks
Sampling Manual (2022) Page 50.

(Left) Point is in water. Move to representative area of cross-section (no distance limit).

(Right) If you can reach water within 50 meters (m), site can be sampled. Move to representative area of cross-section (no distance limit).

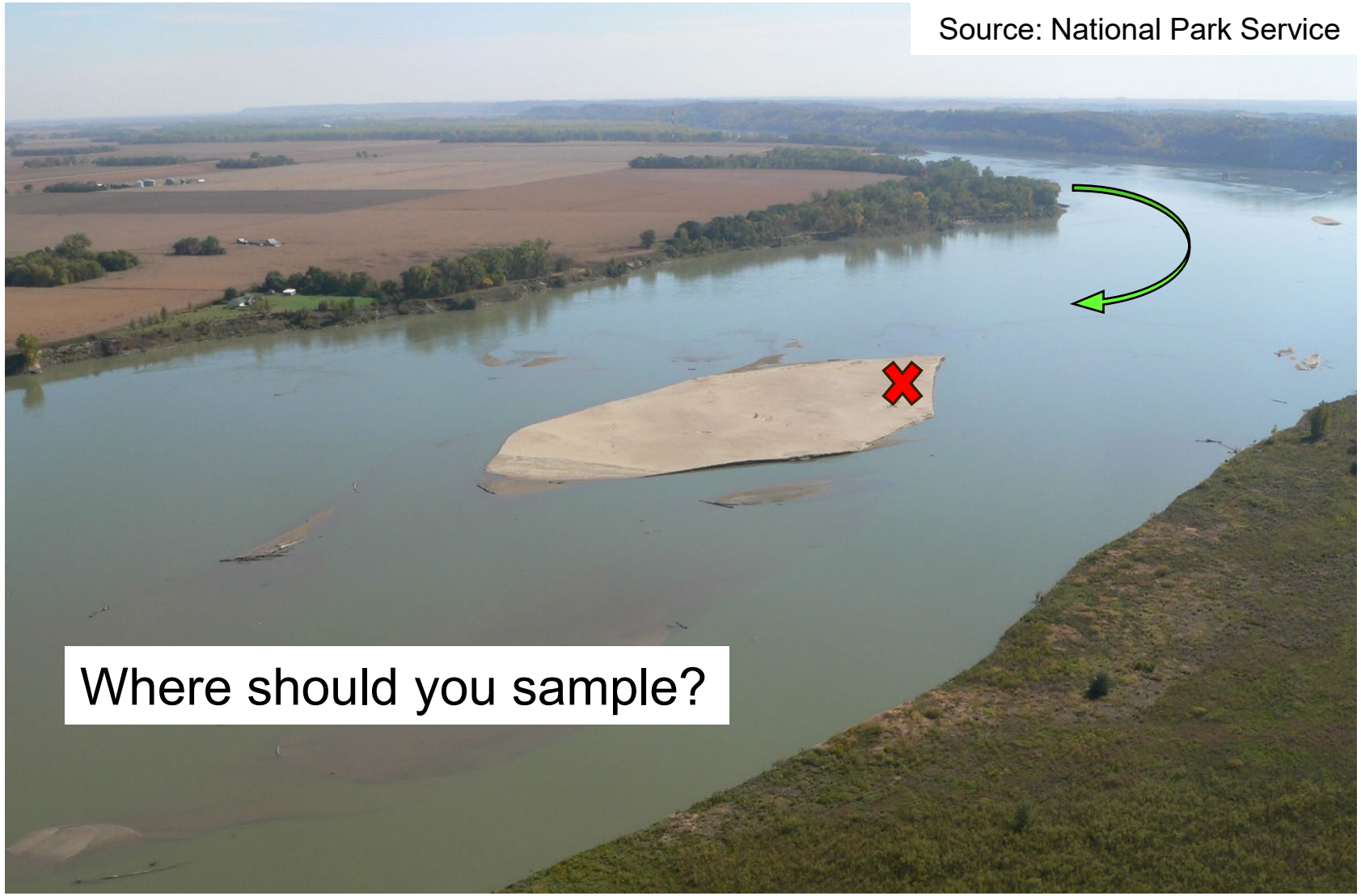
If you can't reach water within 50 m, exclude as Wrong Resource / GIS coverage incorrect.

If sampled, where is GPS point collected?

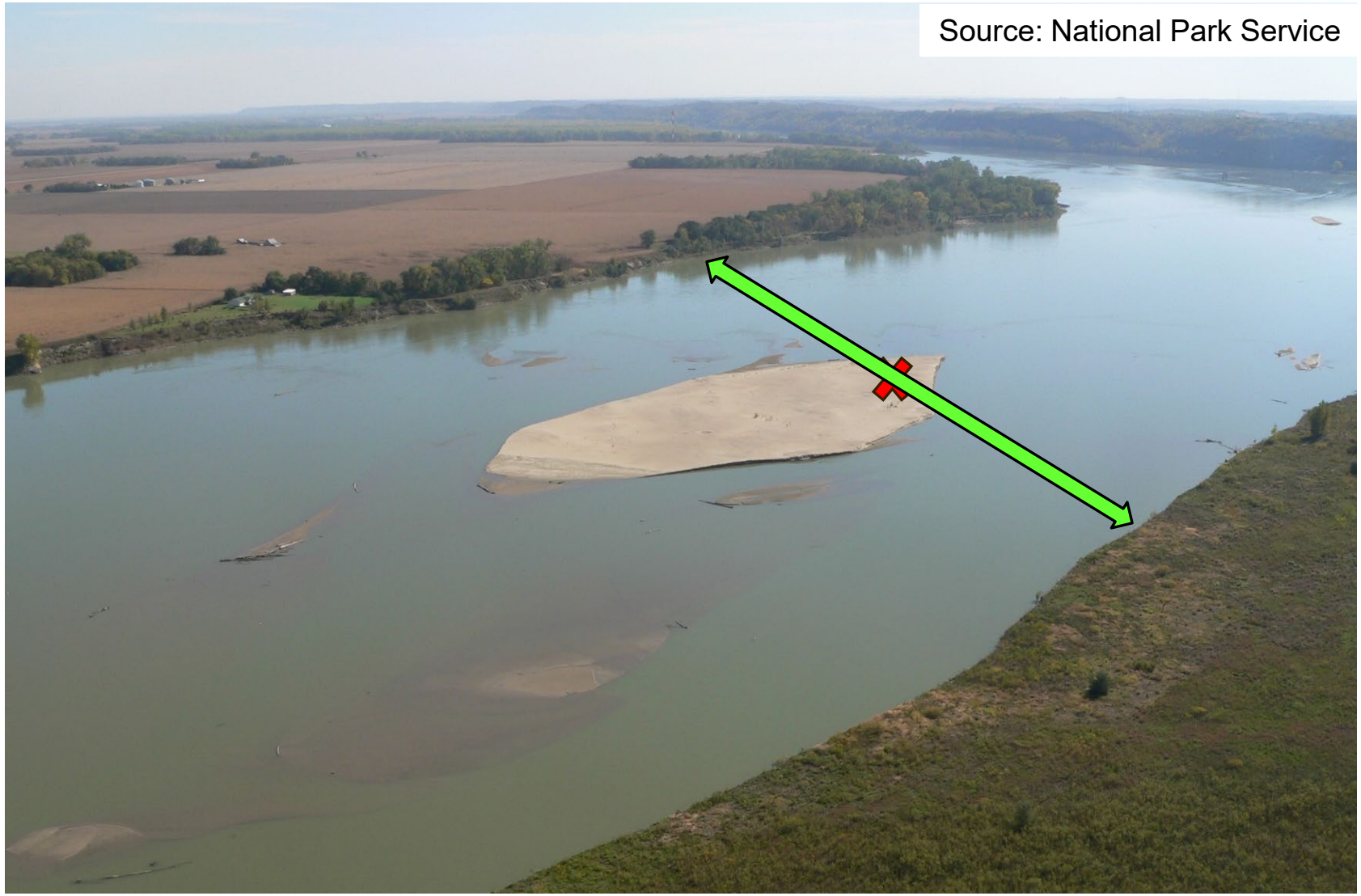
Always collect new location data at **sampling location.**

STATUS NETWORK RIVER

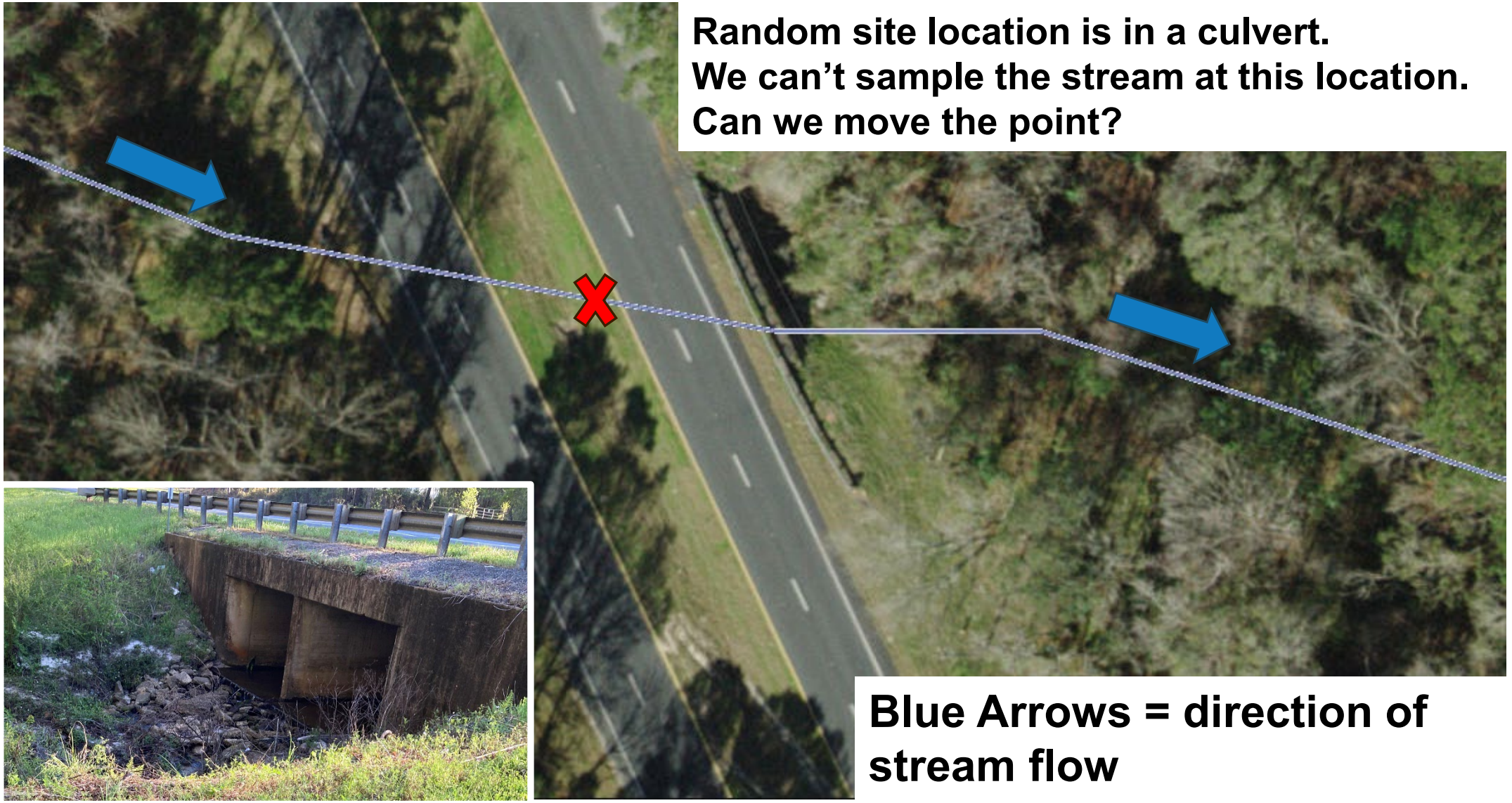
Source: National Park Service



STATUS NETWORK RIVER



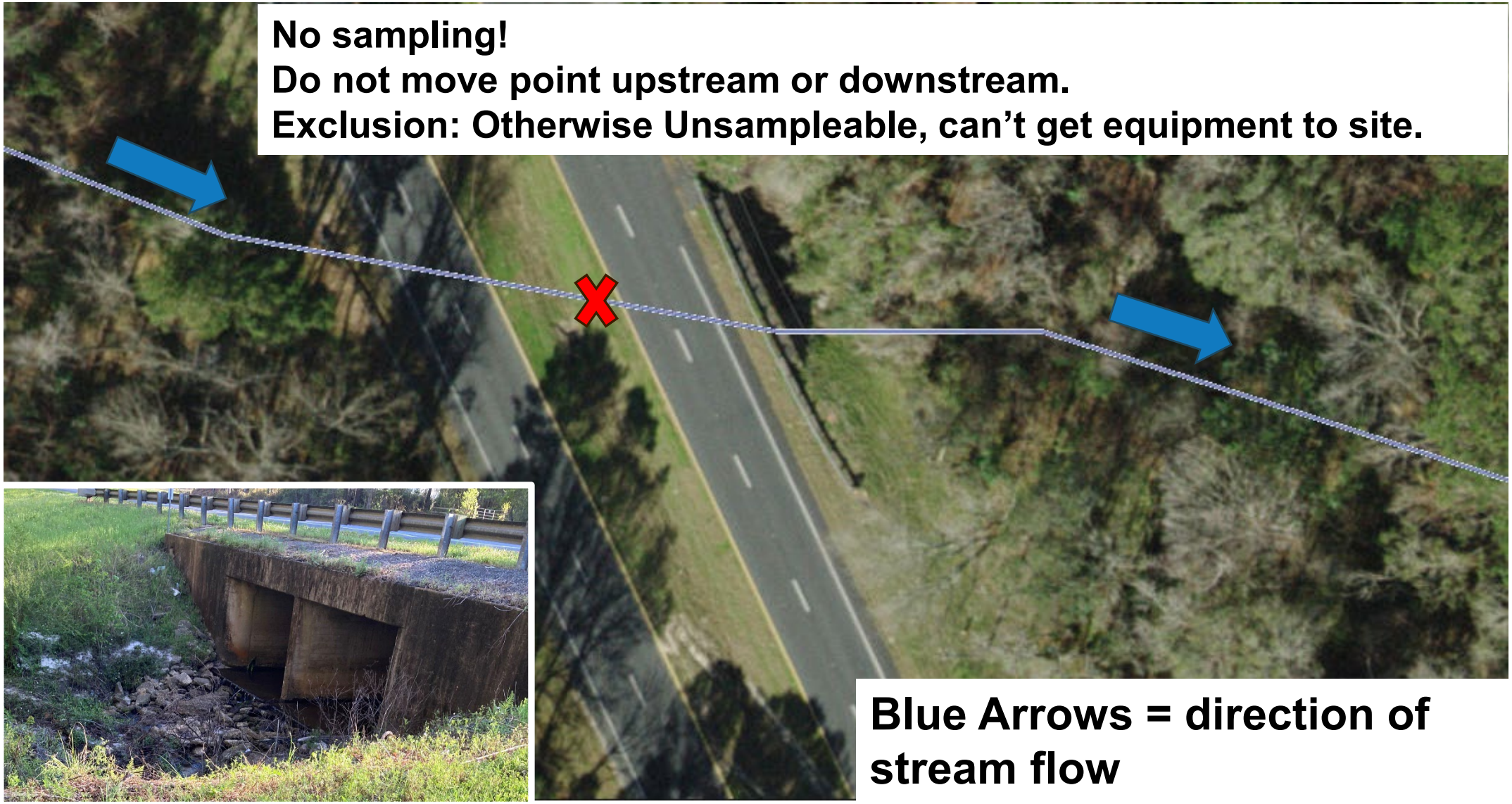
STATUS NETWORK STREAM



Random site location is in a culvert.
We can't sample the stream at this location.
Can we move the point?

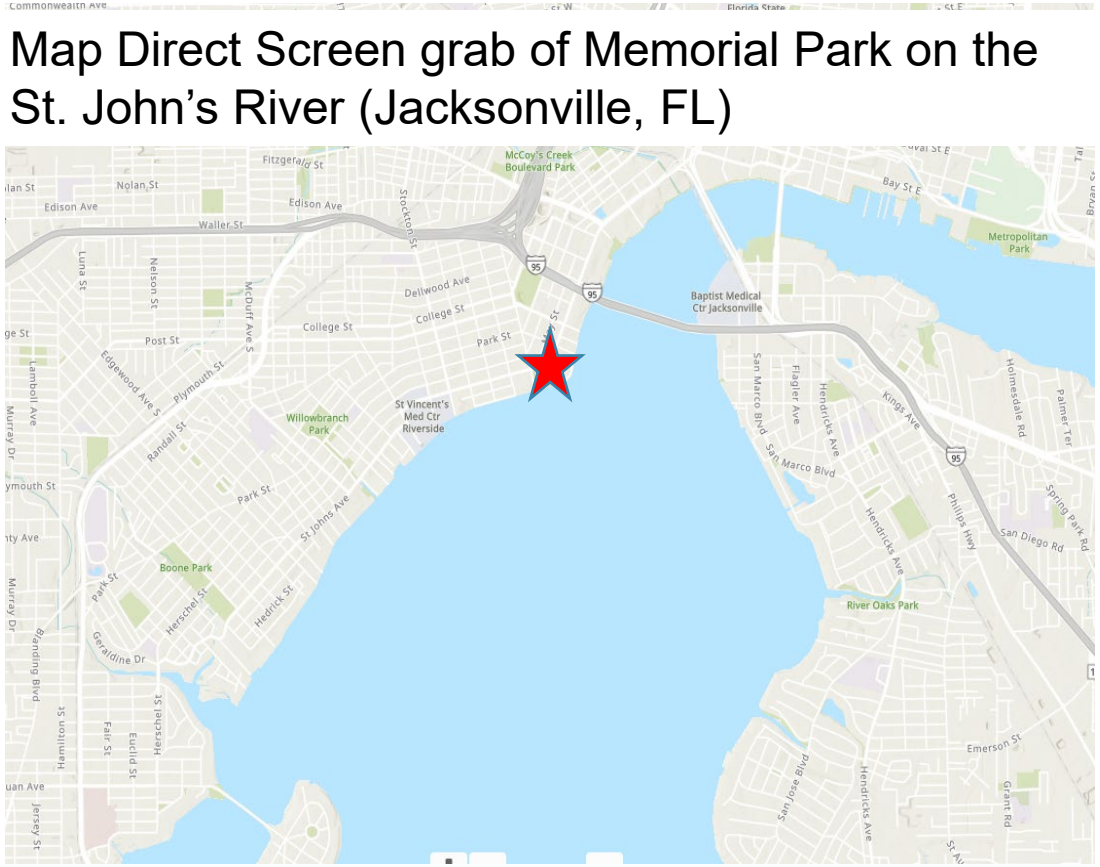
Blue Arrows = direction of stream flow

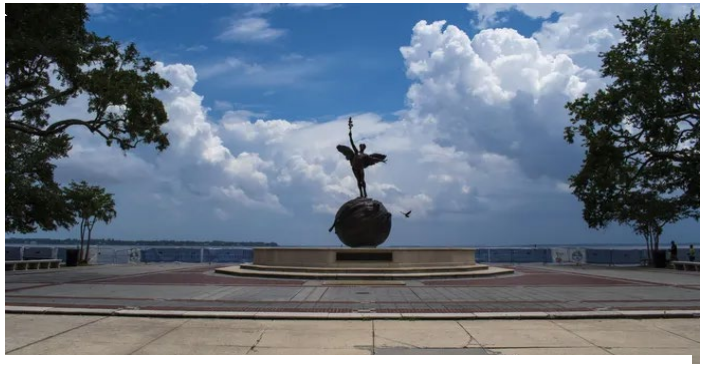
STATUS NETWORK STREAM



STATUS NETWORK FLOWING WATERS: FLOODING

Map Direct Screen grab of Memorial Park on the St. John's River (Jacksonville, FL)





Source: The Florida Times Union, 2020.

Memorial Park under normal conditions.

Source: News4Jax, 2022.

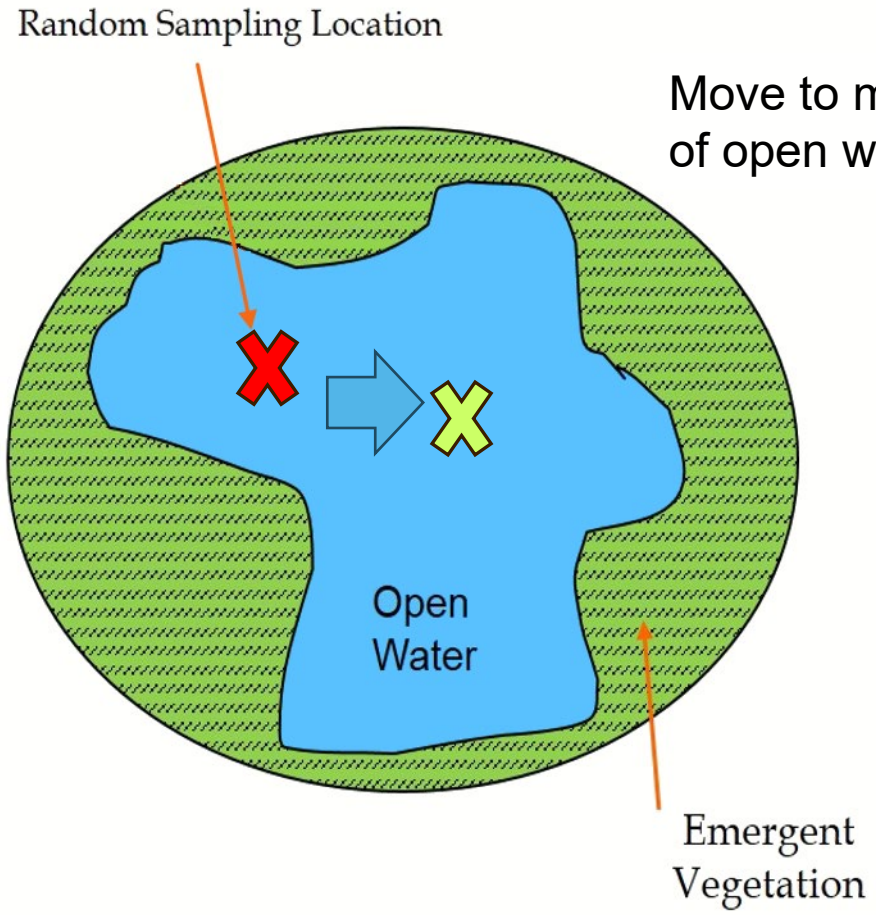
Memorial Park after Hurricane Nicole in 2022.

No sampling!

Do not sample Status Rivers/Streams/Canals if flooded above banks.
Exclude as Otherwise Unsamplable/Flood Conditions.

STATUS SAMPLING LOCATIONS

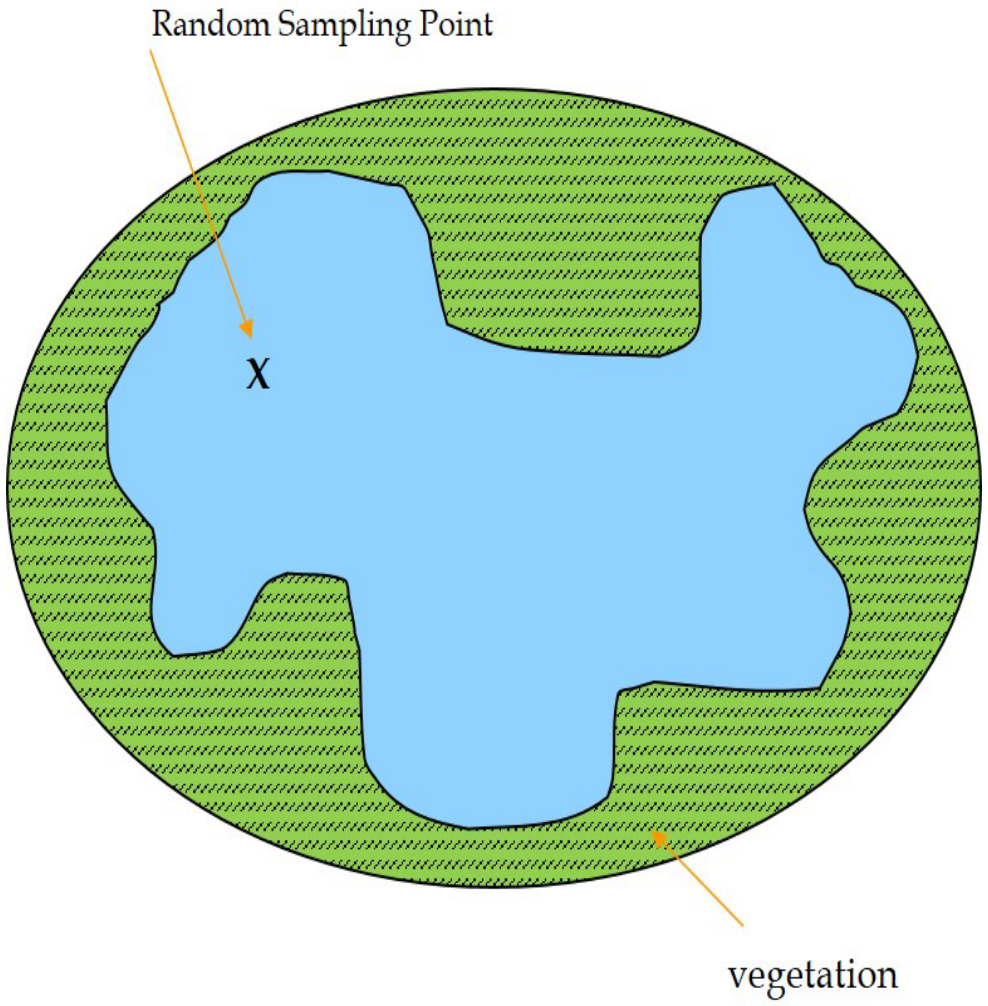
SMALL LAKES



- Random location represents **whole** small lake.
- Must collect in the **middle** of the **open water.**
- If sampling location falls on dry land, move **up to 50 m** toward nearest point in the water. If water is reached, proceed to middle of open water to sample.

STATUS SAMPLING LOCATIONS

LARGE LAKES



- **Random location = sampling location.**
- Use Bad Elf to navigate to the random site locations.
- Must collect sample **at** random location (lat/long).
- If random location falls **on dry land,** exclude site. Do not move site and do not sample.

SAMPLING REQUIREMENTS

ALL LAKES

- Consider:
  - Size.
  - Depth.
  - Open water.
  - Tidal influence.

This small lake is named Bear Hammocks Lake.

SAMPLING REQUIREMENTS

ALL LAKES

- Size
  - **Large enough** to sample?
    - SL = four to < 10 hectares.
    - LL = ≥ 10 hectares
    - Consider area with water present during index period.

This small lake is named Bear Hammocks Lake.

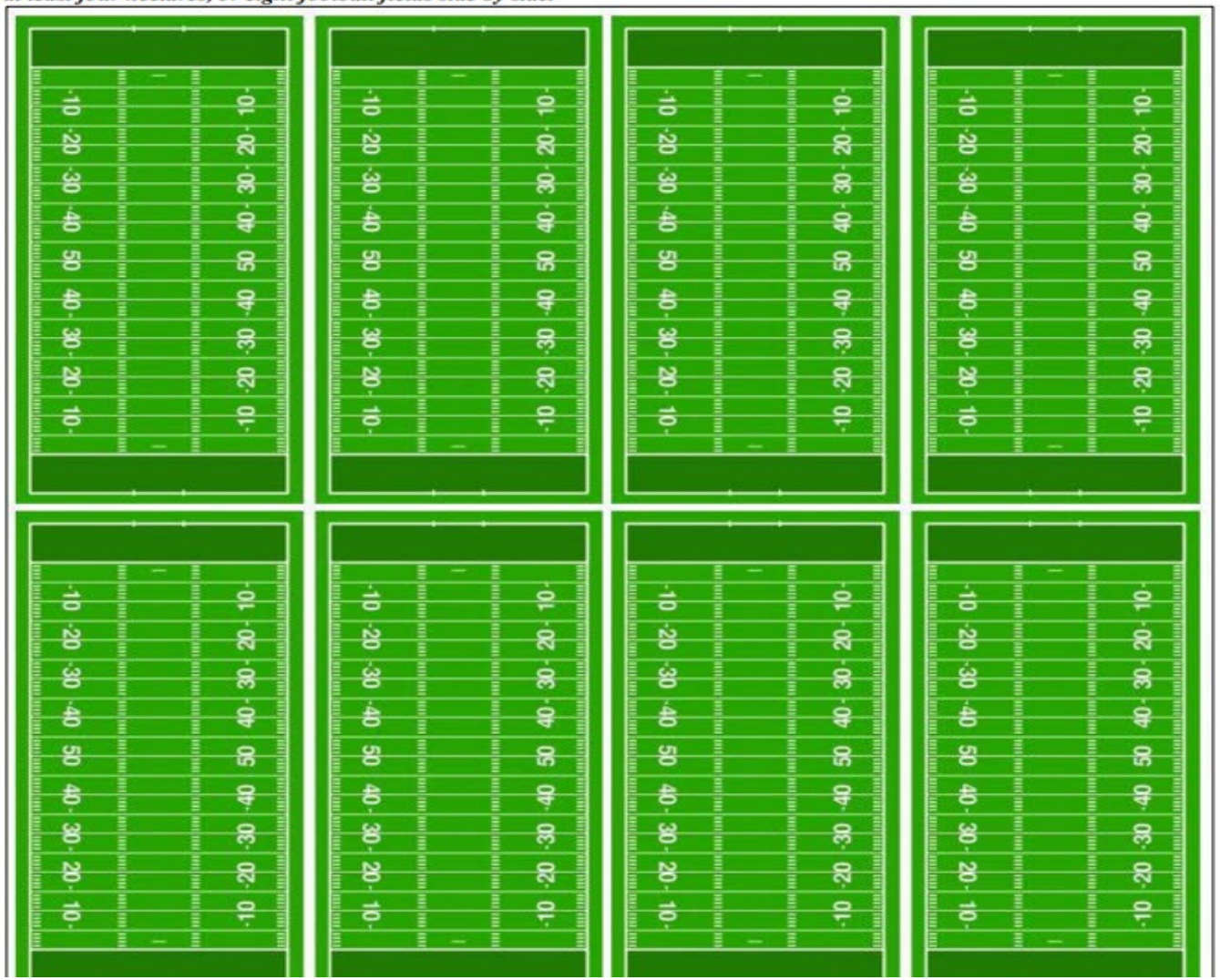
SAMPLING REQUIREMENTS

ALL LAKES

Four hectares = 9.88 acres
(8 football fields).

Ten hectares = 24.71 acres
(18 football fields).

Figure 22. How to estimate the size of a small lake. One hectare is about two football fields side by side. Small lakes must be at least four hectares, or eight football fields side by side.



Source: Watershed Monitoring Section's Status Network Reconnaissance Manual (Updated 2024). Page 33.

SAMPLING REQUIREMENTS

ALL LAKES

- Size.
- Depth.
  - Lake's deepest point **≥1 m**?
  - Sampling point **≥ 10 cm** deep?

SAMPLING REQUIREMENTS

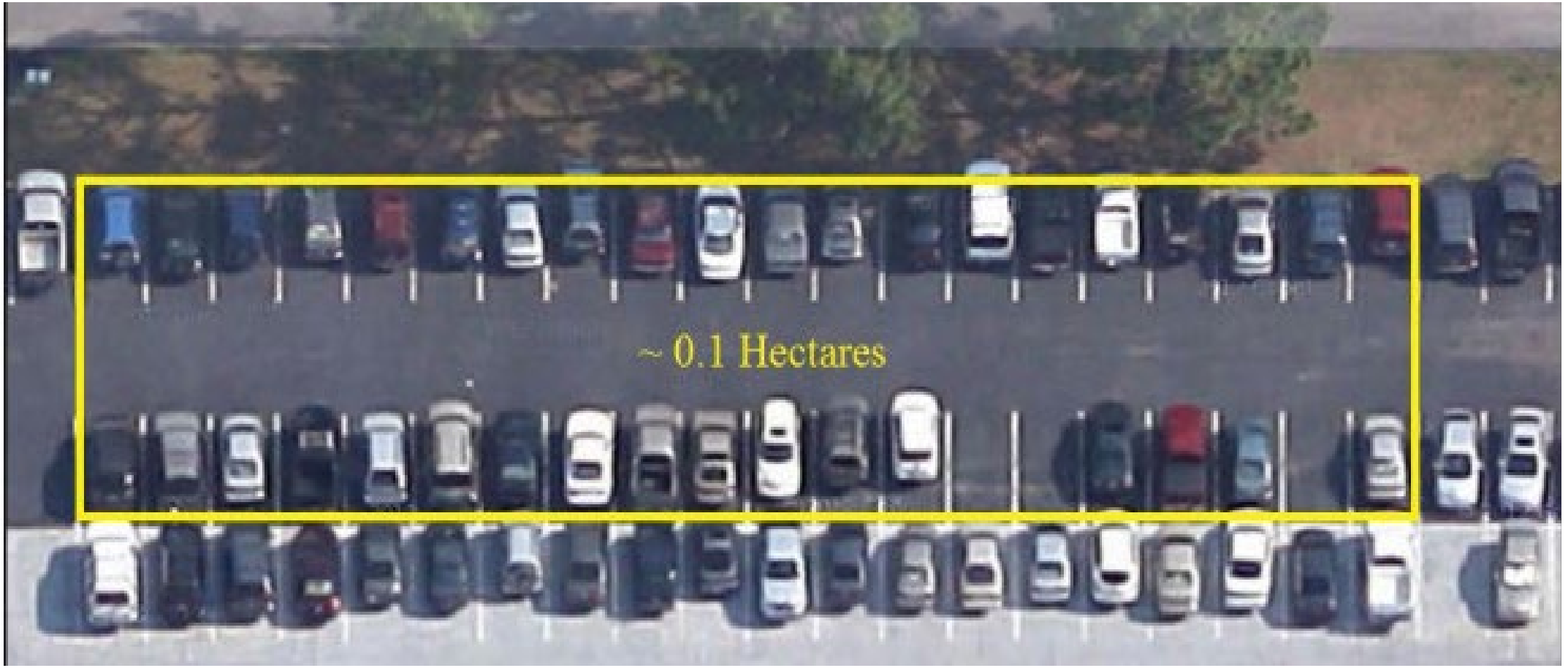
ALL LAKES

- Size.
- Depth.
- Open water.
  - Sampling point **≥ 0.5 m²** free of attached vegetation?
    - (0.5 m^2 = height x length of two 48-quart coolers from DEP Lab).

- **≥ 0.1 ha** (0.25 acres, 1000 m^2) total open water?

SAMPLING REQUIREMENTS

ALL LAKES



Source: Watershed Monitoring Section's Status Network Reconnaissance Manual (Updated 2024). Page 34.

0.1 hectares = Two rows of 20 parking spaces with a two-lane road between them.

STATUS

ALL LAKES

- Size.
- Depth.
- Open water.
- Tidal influence?
  - Exclude as wrong resource / estuary if directly connected to oceanic waters.

STATUS

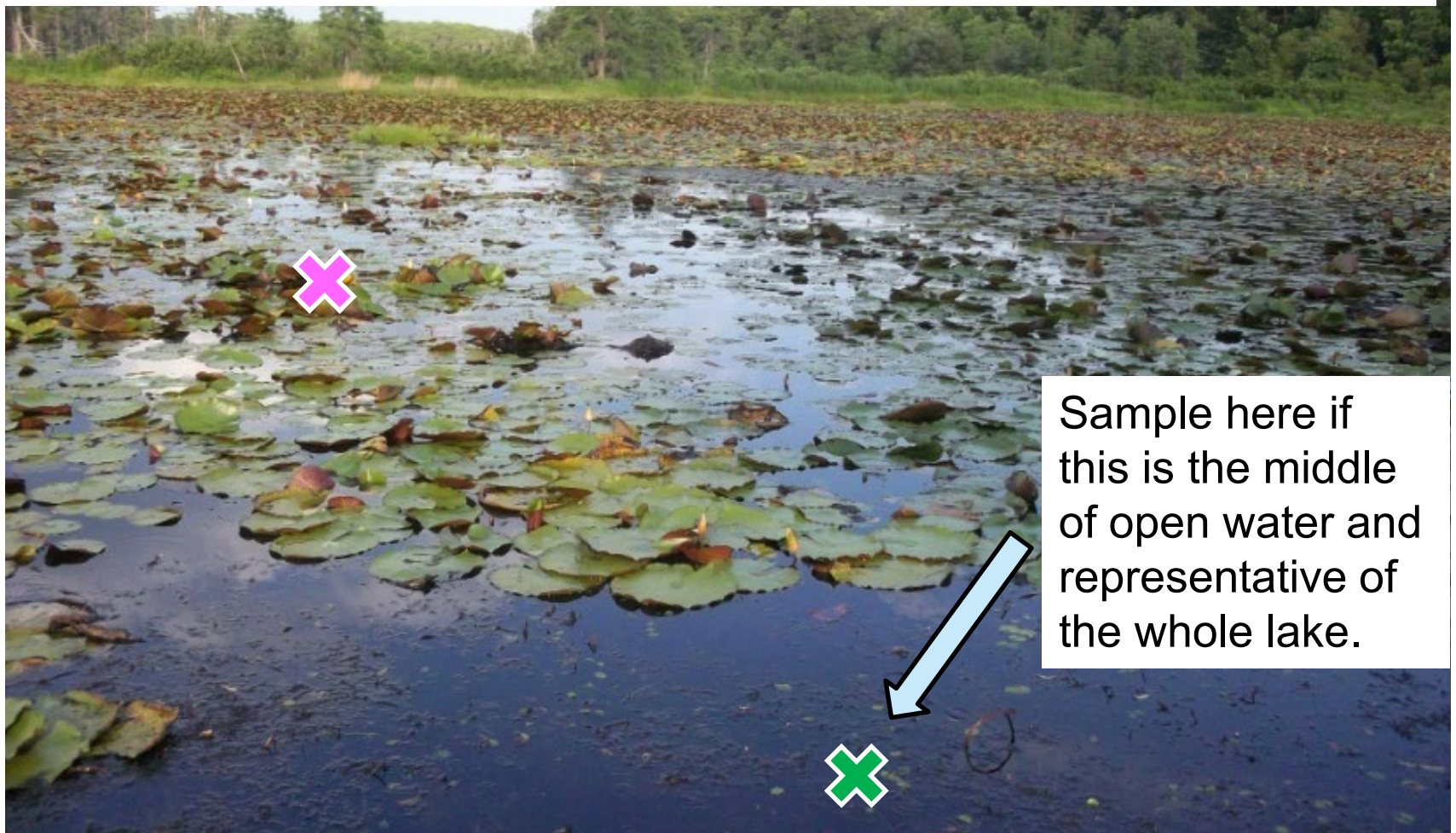
SMALL LAKES

Assume that size/depth requirements are met for the small lake, and it is not tidally influenced.
Could you sample this lake?

STATUS

SMALL LAKES

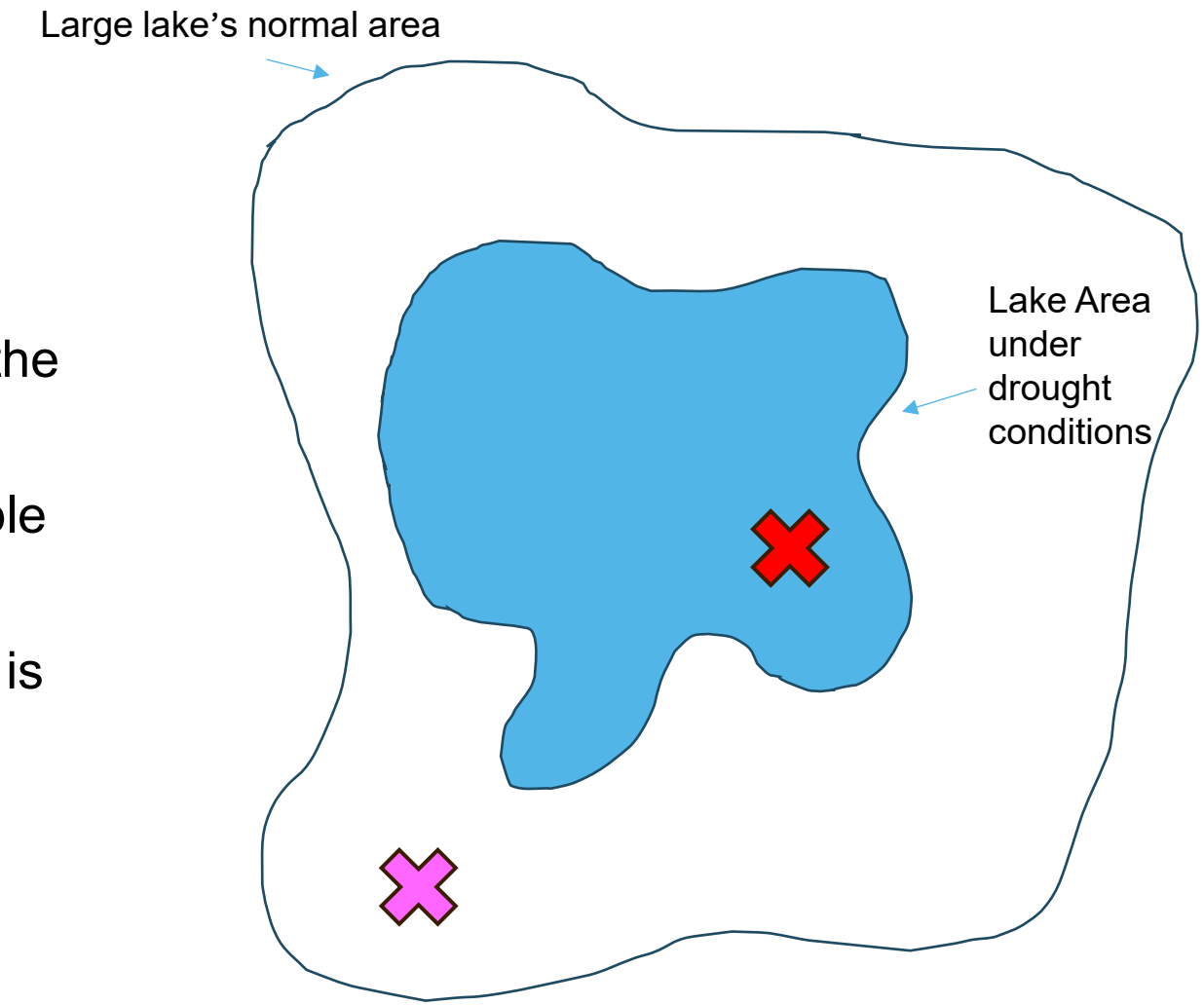
Yes - you can sample!
For Small Lakes - sample in middle of open water.



STATUS
LARGE LAKES

Large Lake Example Number 1:

- Drought conditions are present such that the large lake is < 10 hectares.
- The pink and red ‘X’ are the random sample locations.
- Would you exclude both sites? If so, what is the exclusion?

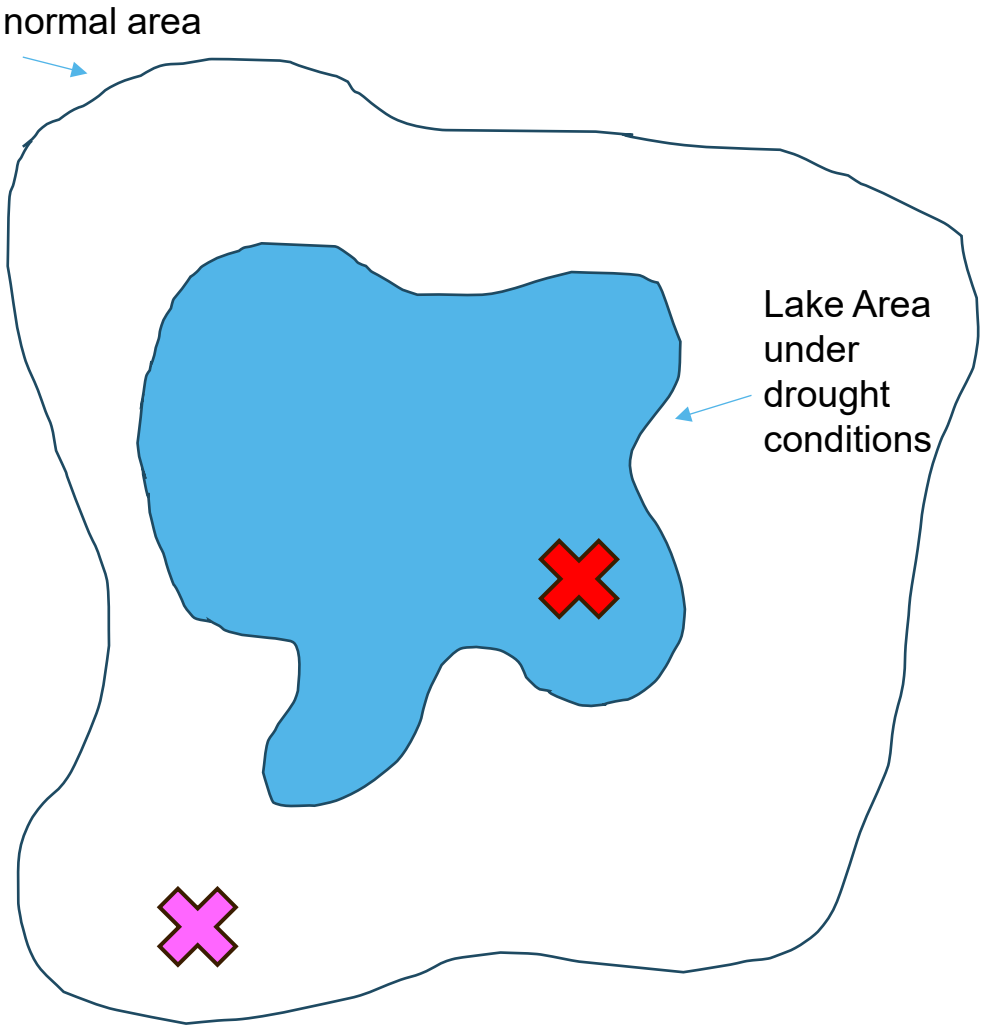


STATUS

LARGE LAKES

Answer:

If the wetted area of the large lake is less than 10 hectares, the site should be excluded even if the random location falls in water. The appropriate exclusions in this case would be **‘Dry > Random location dry during index period.’**

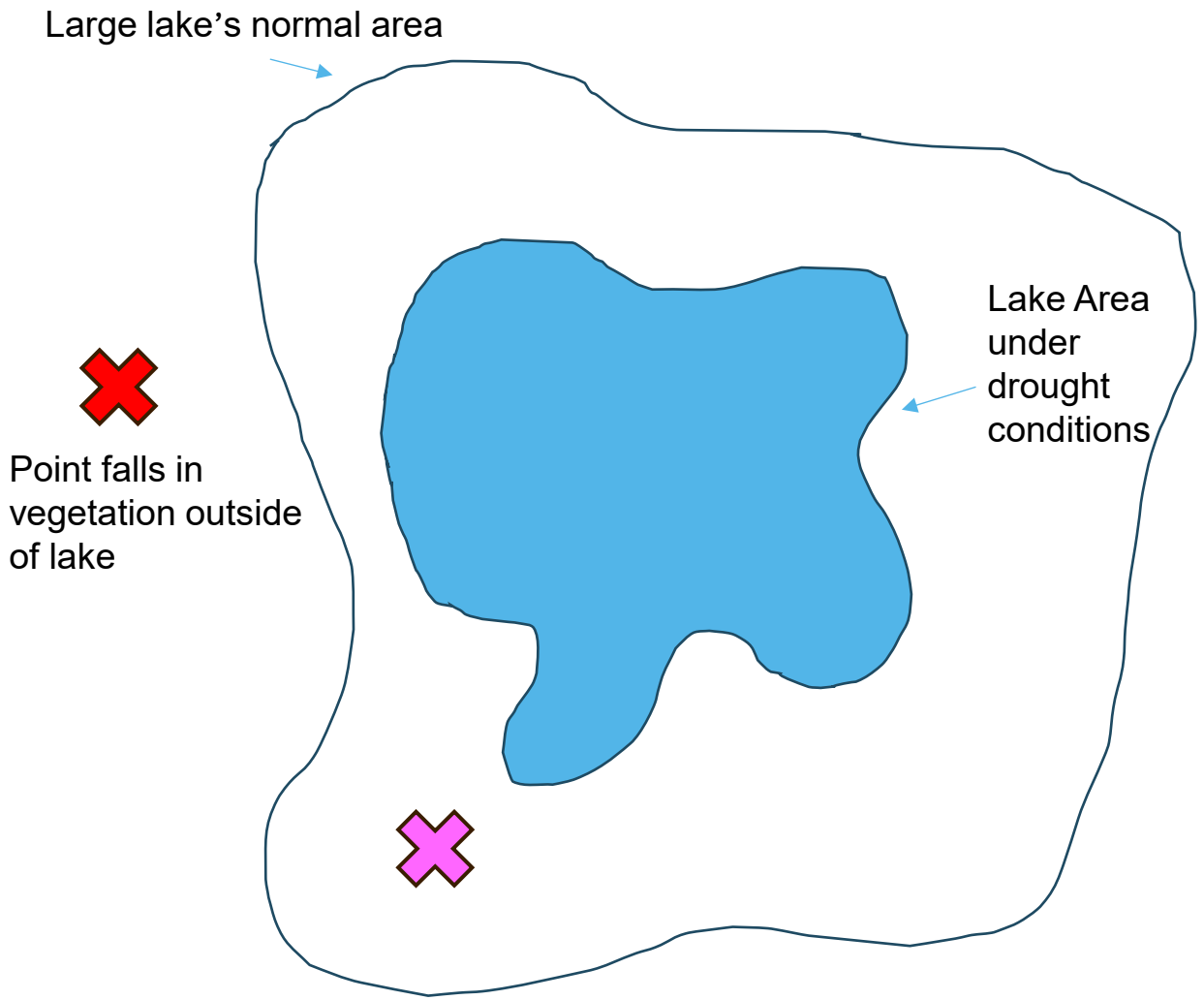


STATUS

LARGE LAKES

Large Lake Example Number Two:

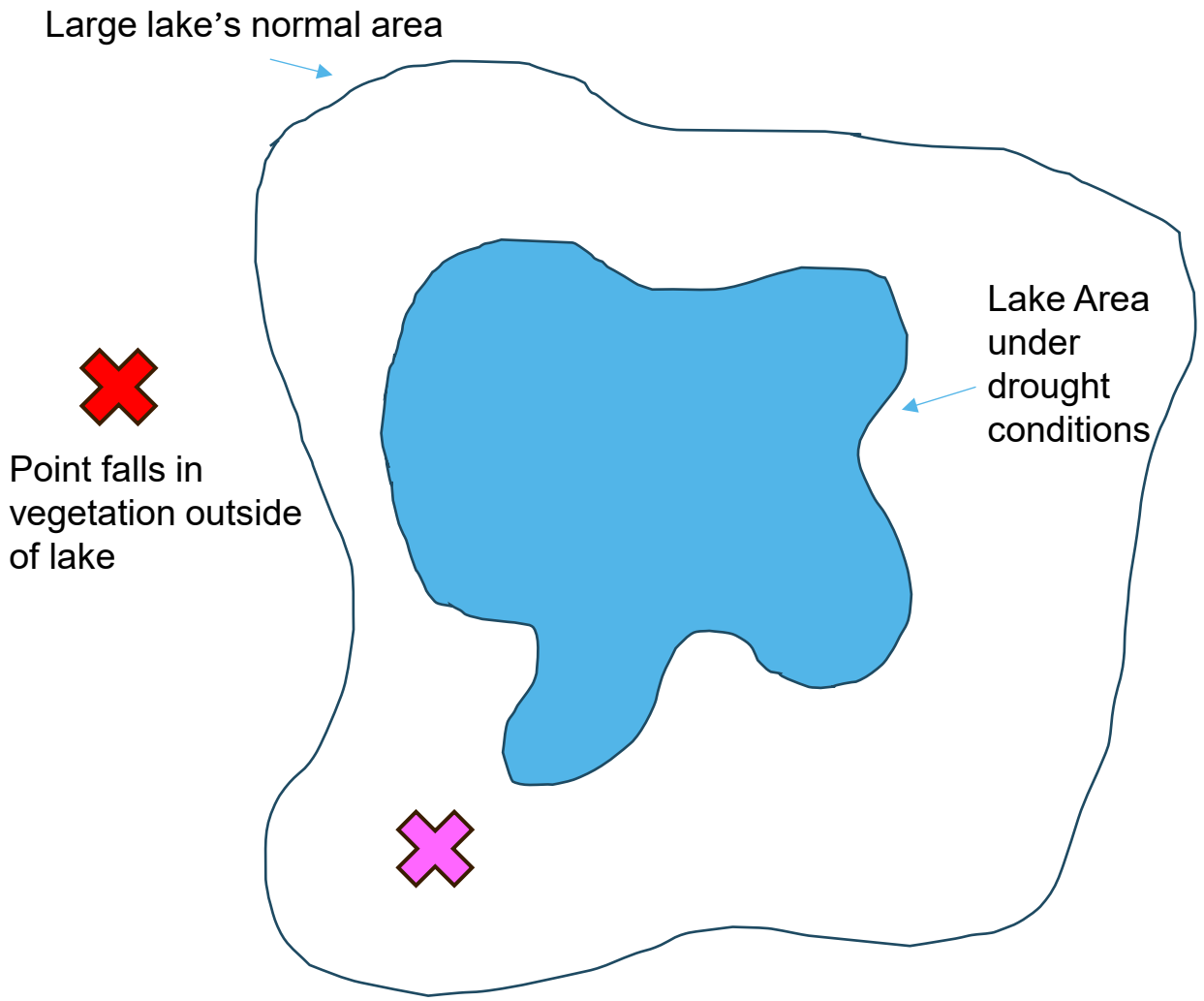
- Assume the large lake is ≥10 hectares. Can we move these sites to wetted areas?
- If not, what exclusions would apply for each?



STATUS
LARGE LAKES

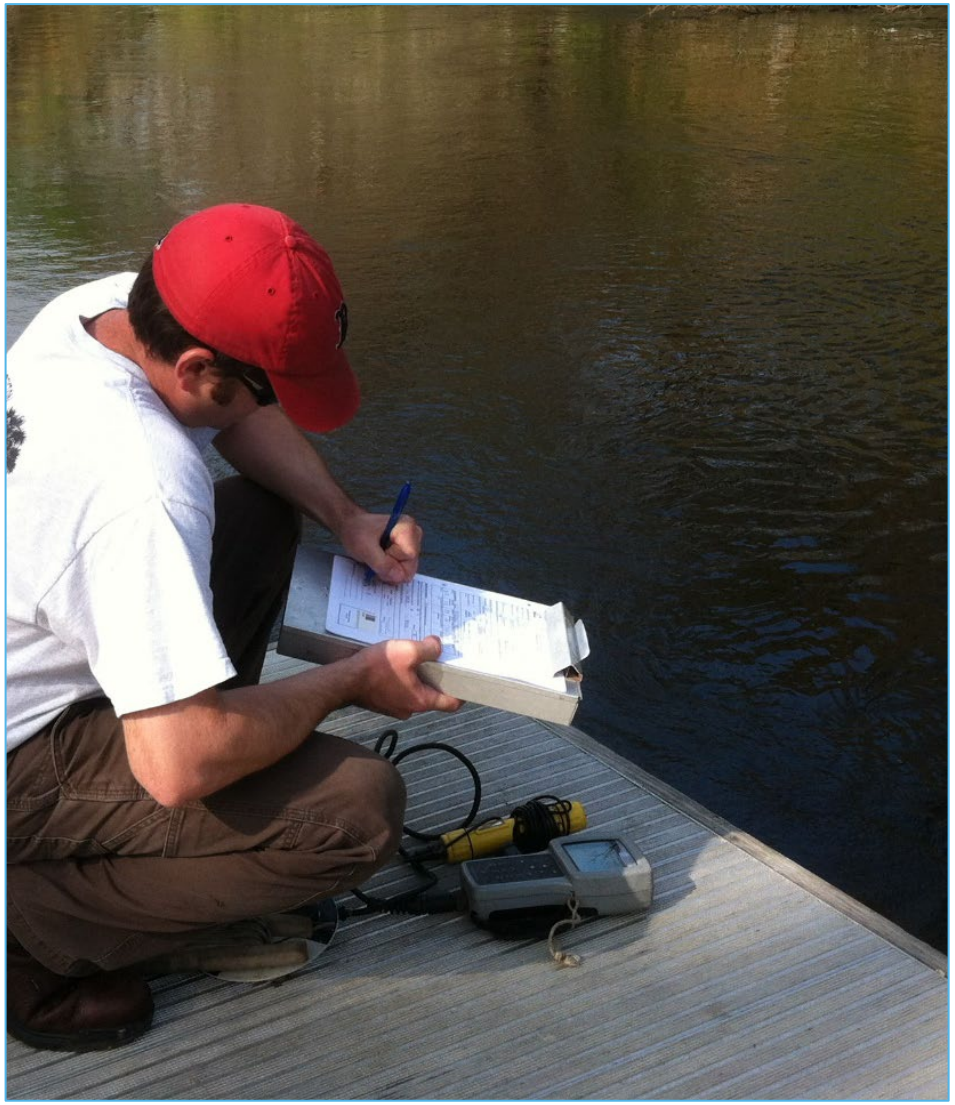
Answer:

- For large lakes, you must collect sample **at** random location (latitude/longitude).
- If random location falls **on dry land** exclude site. **Do not move site. Do not sample.**
- Specific Exclusions.
  - Red ‘X’ = Wrong resource.
  - Pink ‘X’ = Dry.



MAJOR TOPICS

- When/when not to collect samples.
- Field sheets and field data collection.
- Sample collection and documentation.



FIELD SHEETS

DO not make **ANY** assumptions while reviewing data.

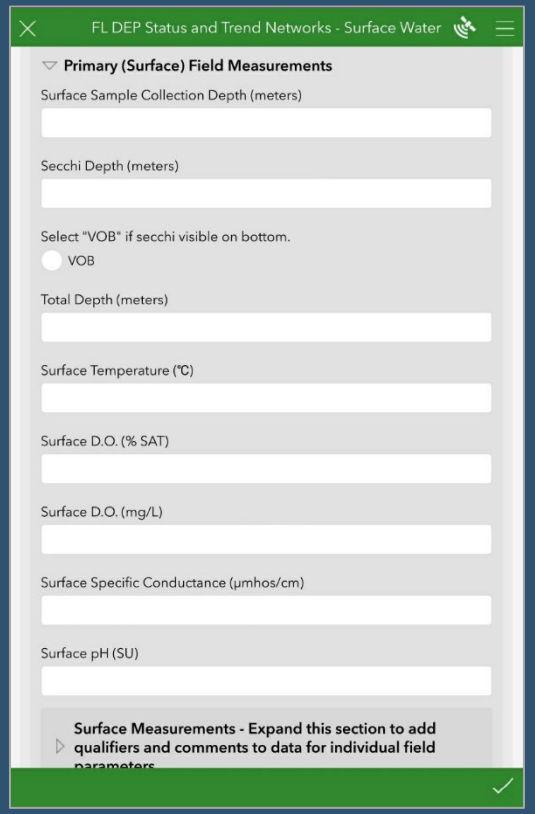
Not Documented = NOT DONE.

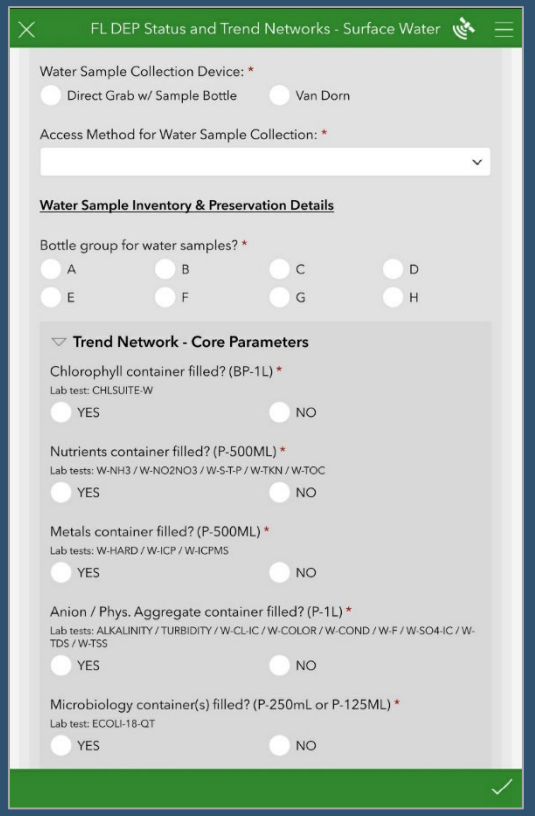
Screen grab of the results file where J qualifiers / comments had to be added due to missing cleaning documentation

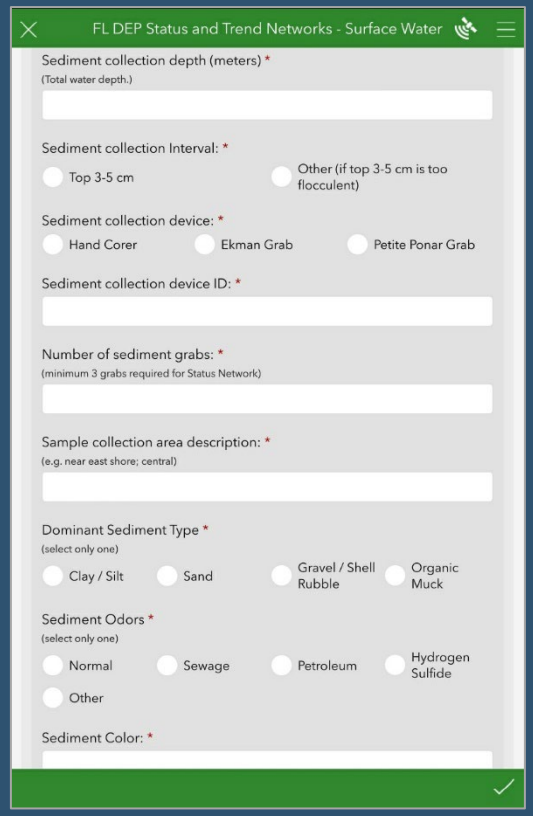
Color (true)	27	J	PCU	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Specific Conductance, Lab	154	J	uS/cm	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Alkalinity, Total (as CaCO3)	60	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Total Suspended Solids (TSS)	3	IJ	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Ammonia, Total (as N)	0.011	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Kjeldahl Nitrogen, Total (as N)	0.26	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Nitrate+Nitrite, Total (as N)	1	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Phosphorus, Total (as P)	0.025	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Organic Carbon, Total	4.4	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Calcium, Total	25.5	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Magnesium, Total	1.66	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Sodium, Total	2.3	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Potassium, Total	1.4	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Chloride, Total	6.4	AJ	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Sulfate, Total	1.2	AJ	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Fluoride, Total	0.03	IJ	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Chlorophyll-A Uncorrected, (Trichromatic)	1.6	IJ	ug/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Chlorophyll-A (Monochromatic)	1.4	IJ	ug/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Pheophytin-A (Monochromatic)	0.9	UJ	ug/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Hardness, calculated as CACO3	70.5	J	mg/L	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Turbidity, Lab	7	AJ	ntu	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT
Escherichia Coli-Quanti-Tray	213	J	MPN/100 mL	CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT

FIELD SHEETS

Use Survey123 Status and Trend Surface Water form to complete field sheets and custody sheets.

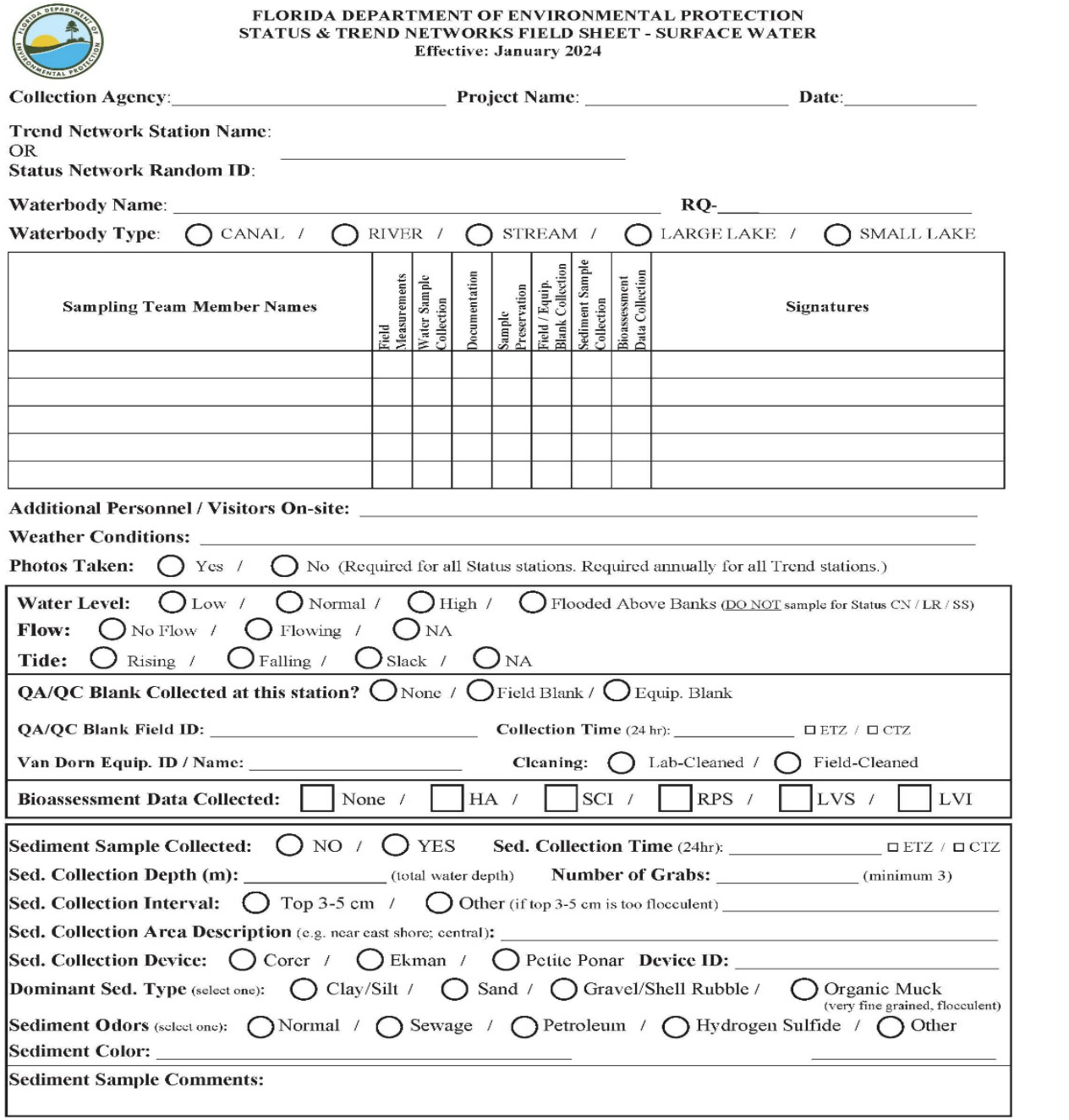






FIELD SHEETS

- Paper field sheets are available on the Watershed Monitoring Information Center.
- Keep copies in vehicles as back up.



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATUS & TREND NETWORKS FIELD SHEET - SURFACE WATER
Effective: January 2024

Collection Agency:_____ **Project Name:** _____ **Date:**_____

Trend Network Station Name:
OR
Status Network Random ID: _____

Waterbody Name: _____ **RQ-**_____

Waterbody Type: ◯ CANAL / ◯ RIVER / ◯ STREAM / ◯ LARGE LAKE / ◯ SMALL LAKE

Sampling Team Member Names	Field Measurements	Water Sample Collection	Documentation	Sample Preservation	Field / Equip. Blank Collection	Sediment Sample Collection	Bioassessment Data Collection	Signatures

Additional Personnel / Visitors On-site: _____

Weather Conditions: _____

Photos Taken: ◯ Yes / ◯ No (Required for all Status stations. Required annually for all Trend stations.)

Water Level: ◯ Low / ◯ Normal / ◯ High / ◯ Flooded Above Banks (DO NOT sample for Status CN / LR / SS)
Flow: ◯ No Flow / ◯ Flowing / ◯ NA
Tide: ◯ Rising / ◯ Falling / ◯ Slack / ◯ NA

QA/QC Blank Collected at this station? ◯ None / ◯ Field Blank / ◯ Equip. Blank
QA/QC Blank Field ID: _____ **Collection Time** (24 hr): _____ ☐ ETZ / ☐ CTZ
Van Dorn Equip. ID / Name: _____ **Cleaning:** ◯ Lab-Cleaned / ◯ Field-Cleaned

Bioassessment Data Collected: ☐ None / ☐ HA / ☐ SCI / ☐ RPS / ☐ LVS / ☐ LVI

Sediment Sample Collected: ◯ NO / ◯ YES **Sed. Collection Time** (24hr): _____ ☐ ETZ / ☐ CTZ
Sed. Collection Depth (m): _____ (total water depth) **Number of Grabs:** _____ (minimum 3)
Sed. Collection Interval: ◯ Top 3-5 cm / ◯ Other (if top 3-5 cm is too flocculent) _____
Sed. Collection Area Description (e.g. near east shore; central): _____
Sed. Collection Device: ◯ Corer / ◯ Ekman / ◯ Petite Ponar **Device ID:** _____
Dominant Sed. Type (select one): ◯ Clay/Silt / ◯ Sand / ◯ Gravel/Shell Rubble / ◯ Organic Muck (very fine grained, flocculent)
Sediment Odors (select one): ◯ Normal / ◯ Sewage / ◯ Petroleum / ◯ Hydrogen Sulfide / ◯ Other
Sediment Color: _____ _____
Sediment Sample Comments:

GENERAL STATION INFORMATION

- Use the most recent version (January 2024).
- Station name.
- Sampling date.
- Waterbody name and type.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATUS & TREND NETWORKS FIELD SHEET - SURFACE WATER
Effective: January 2024

Collection Agency:_____ **Project Name**: _____ **Date**:_____

Trend Network Station Name:
OR
Status Network Random ID: _____

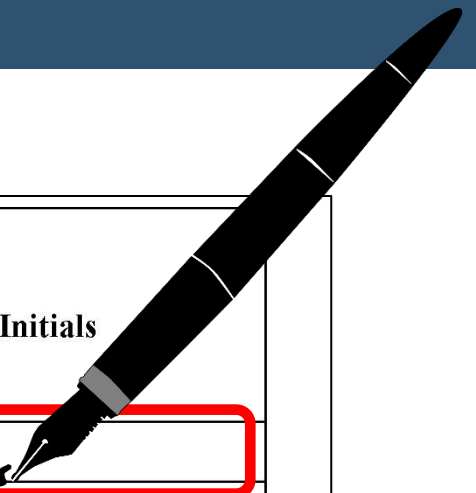
Waterbody Name: _____ **RQ-**_____

Waterbody Type: ◯ CANAL / ◯ RIVER / ◯ STREAM / ◯ LARGE LAKE / ◯ SMALL LAKE

GENERAL STATION INFORMATION

Sampling Team Member Names	Field Measurements	Water Sample Collection	Documentation	Sample Preservation	Field / Equip. Blank Collection	Sediment Sample Collection	Bioassessment Data Collection	Signatures or Initials

Print Whole Name



- Record names/signatures of all samplers on the paper form. (Survey123 Signature – use initials).

PHOTO DOCUMENTATION

ALL STATUS AND TREND SITES

Additional Personnel / Visitors On-site: _____

Weather Conditions: _____

Photos Taken: ◯ Yes / ◯ No (Required for all Status stations. Required annually for all Trend stations.)

Water Level: ◯ Low / ◯ Normal / ◯ High / ◯ Flooded Above Banks (DO NOT sample for Status CN / LR / SS)

Flow: ◯ No Flow / ◯ Flowing / ◯ NA

Tide: ◯ Rising / ◯ Falling / ◯ Slack / ◯ NA

- Recommend taking photos with Survey123.
- Photos will be stamped with station ID, date, and direction (North (N), East (E), South (S) and West (W)) in lower-left corner.
- Photo files will be automatically named and transferred to DEP SharePoint.

PHOTO DOCUMENTATION
ALL STATUS AND TREND SITES

- Photos at all Status and annually at Trend sites (more frequently if changes have occurred).
- Four photos required at all sites: North (N), East (E), South (S) and West (W).
- Additional photo of sample location required if sampling from shore or on a structure.
- Upstream/downstream photos are helpful.

PHOTO DOCUMENTATION

- Sampling point **on** the structure.
- **Not** view from the structure.

WATER CHARACTERISTICS

SAMPLING POINT MEASUREMENTS

Photos Taken: ◯ Yes / ◯ No (Required for all Status stations. Required annually for all Trend stations.)

Water Level: ◯ Low / ◯ Normal / ◯ High / ◯ Flooded Above Banks (DO NOT sample for Status CN / LR / SS)

Flow: ◯ No Flow / ◯ Flowing / ◯ NA

Tide: ◯ Rising / ◯ Falling / ◯ Slack / ◯ NA

QA/QC Blank Collected at this station? ◯ None / ◯ Field Blank / ◯ Equip. Blank

- Qualitative Water Level.
- Qualitative Water Flow (flowing waters only).
- Qualitative Tide (note the NA).

QUALITY ASSURANCE/CONTROL

QA/QC Blank Collected at this station? ◯ None / ◯ Field Blank / ◯ Equip. Blank

QA/QC Blank ID: _____ **Collection Time** (24 hr): _____ ◯ ETZ / ◯ CTZ

Van Dorn Equip. ID / Name: _____ **Cleaning:** ◯ Lab-Cleaned / ◯ Field-Cleaned

- Equipment Blanks.
- Field Blanks.

FIELD SHEET

Complete bioassessment & sediment info

Bioassessment Data Collected: ☐ None / ☐ HA / ☐ SCI / ☐ RPS / ☐ LVS / ☐ LVI

Sediment Sample Collected: ◯ NO / ◯ YES **Sed. Collection Time** (24hr): _____ ☐ ETZ / ☐ CTZ

Sed. Collection Depth (m): _____ (total water depth) **Number of Grabs:** _____ (minimum 3)

Sed. Collection Interval: ◯ Top 3-5 cm / ◯ Other (if top 3-5 cm is too flocculent) _____

Sed. Collection Area Description (e.g. near east shore; central)**:** _____

Sed. Collection Device: ◯ Corer / ◯ Ekman / ◯ Petite Ponar **Device ID:** _____

Dominant Sed. Type (select one): ◯ Clay/Silt / ◯ Sand / ◯ Gravel/Shell Rubble / ◯ Organic Muck (very fine grained, flocculent)

Sediment Odors (select one): ◯ Normal / ◯ Sewage / ◯ Petroleum / ◯ Hydrogen Sulfide / ◯ Other

Sediment Color: _____ _____

Sediment Sample Comments:

When collecting any bioassessment, a Phys-Chem and Habitat Assessment should **always** be completed.

FIELD MEASUREMENTS

Field ID:_____ **Project Name:**_____ **Date:**_____

Water Sampling Equipment: ◯ Direct Grab with Sample Container
◯ Van Dorn: _____ # of Grabs; _____ Equipment ID

Collection Method: ◯ Wading / ◯ From Shore or Structure / ◯ Canoe or Kayak / ◯ Air Boat /
◯ Boat - Gasoline Motor / ◯ Boat - Electric Motor / ◯ Other _____

Field Meter ID: _____

Depth Measurement Device: ◯ Field Meter Listed Above / ◯ Other _____

DATA COLLECTION DEPTHS: Total depth < 0.1 m → no data collection. Total depth ≥ 0.1m and < 0.6m → surf. meas. & sample at mid-depth. Total depth ≥ 0.6 m & < 1.5 m → surface meas. & sample at 0.3m. Total depth ≥ 1.5 m → surface meas. & sample at 0.3m, bottom meas. 0.5 m above bottom.

PRIMARY (SURFACE) SAMPLE **Collection Time** (24 hr): _____ ☐ ETZ / ☐ CTZ

☐ Check here if Secchi depth visible on bottom (S qualifier needed).

☐ Check here if bottom measurements not collected because total depth < 1.5 m.

PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Secchi Depth (m)			
Total Depth (m)			
Sp. Cond. (umhos/cm)			

BOTTOM SAMPLE (FIELD MEAS. ONLY) **Collection Time** (24 hr): _____ ☐ ETZ / ☐ CTZ

PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Sp. Cond. (umhos/cm)			

SAMPLE COMMENTS

PRIMARY (SURFACE):

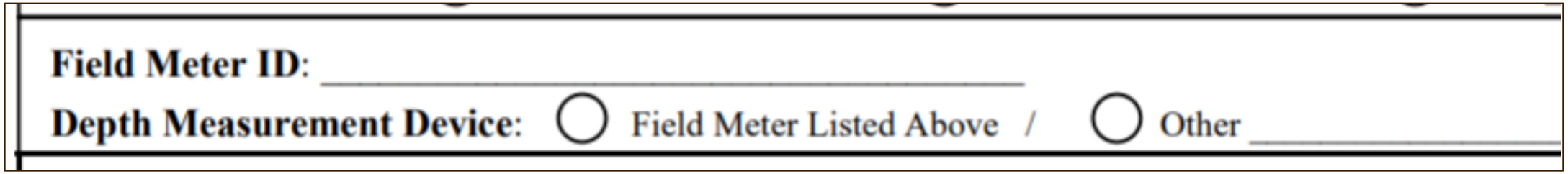
BOTTOM:

OFFICE USE ONLY

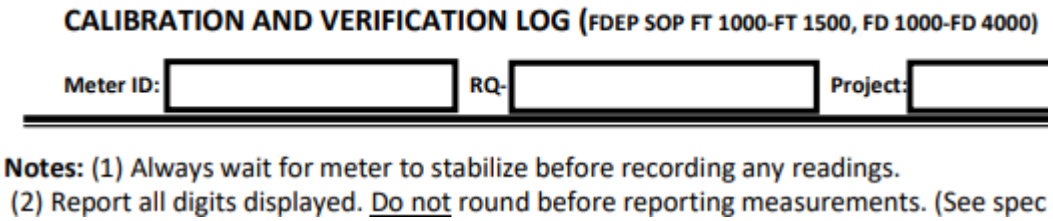
Reviewed By:_____ **Date:** _____

WIN ID:_____ **SBIO-Visit:** _____ **HA-ID:** _____ **RPS-ID:** _____ **Macro-ID:** _____

RECORD MEASUREMENT DEVICE INFORMATION



- Field Meter Name.
- Measurement Device.
- Compare this info with the calibration logs.



Same Meter IDs must be used on Field Sheet **and** Calibration Log.

MAJOR TOPICS

- When/when not to collect samples.
- Field sheets and field data collection.
- **Sample collection and documentation.**

SAMPLE COLLECTION DEPTH

ALL STATUS AND TREND, ALL RESOURCE TYPES

No Sampling if Total Depth is < 0.1 m.

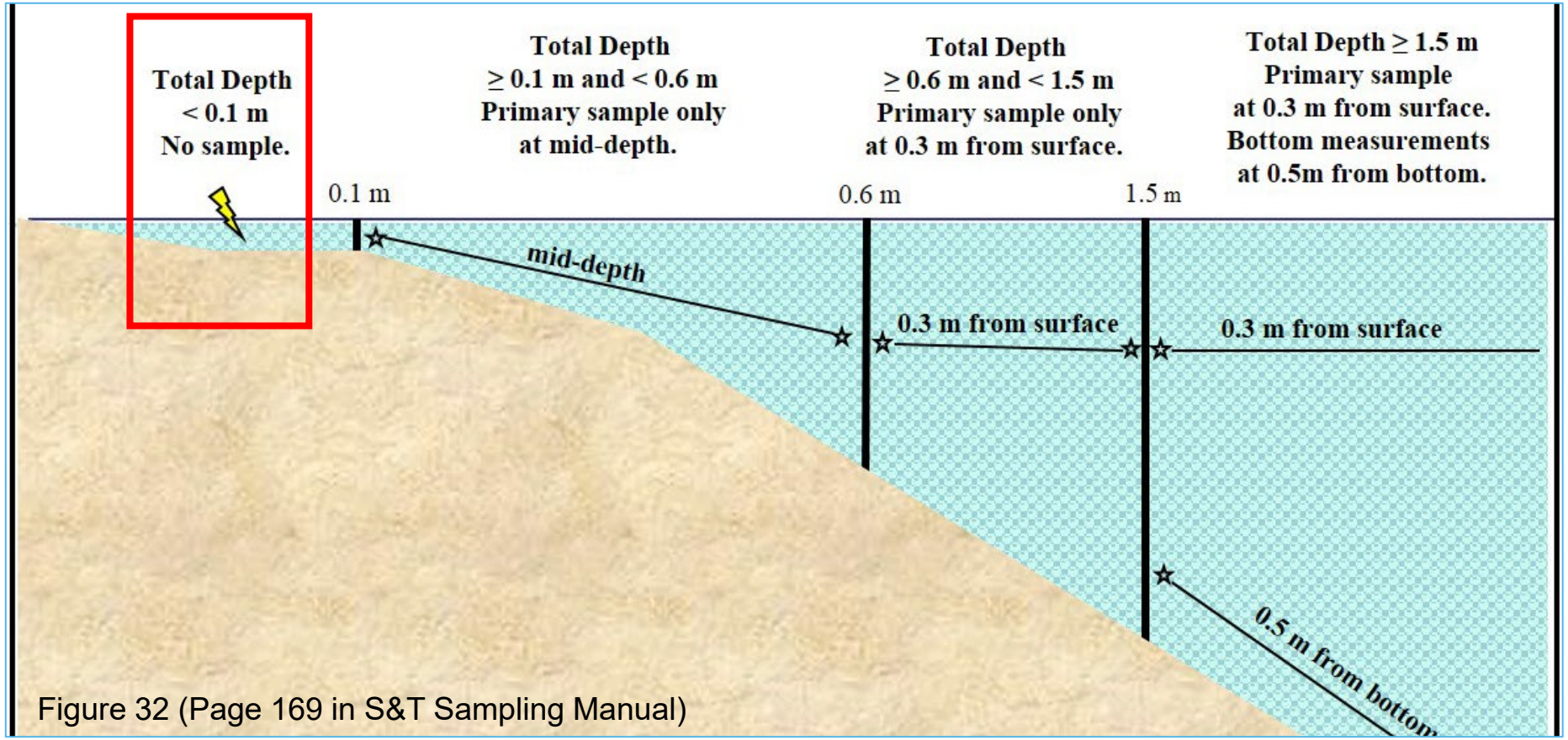


Figure 32 (Page 169 in S&T Sampling Manual)

SAMPLE COLLECTION DEPTH

ALL STATUS AND TREND, ALL RESOURCE TYPES

When Depth ≥ 0.1 m and < 0.6 m:

- Primary samples taken at mid-depth.
- No bottom sample.
- Record Total, Sample, Secchi depth to nearest 0.01 m (measure twice).

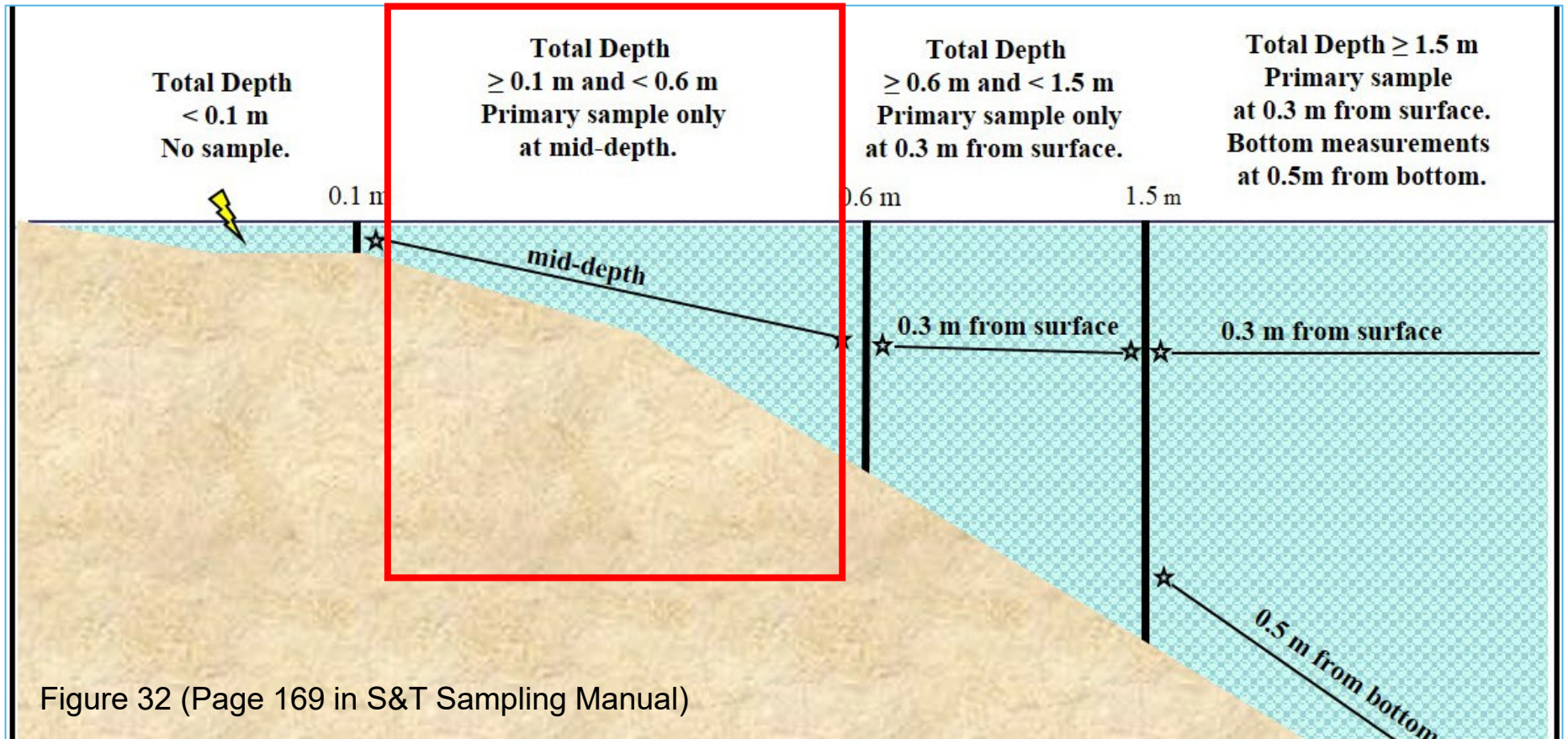


Figure 32 (Page 169 in S&T Sampling Manual)

SAMPLE COLLECTION DEPTH

ALL STATUS AND TREND, ALL RESOURCE TYPES

When Depth ≥ 0.6 m and < 1.5 m:

- Primary sample 0.3 m below the surface.
- No bottom sample.
- Record Total, Sample, Secchi depth to nearest 0.1 m (measure twice).

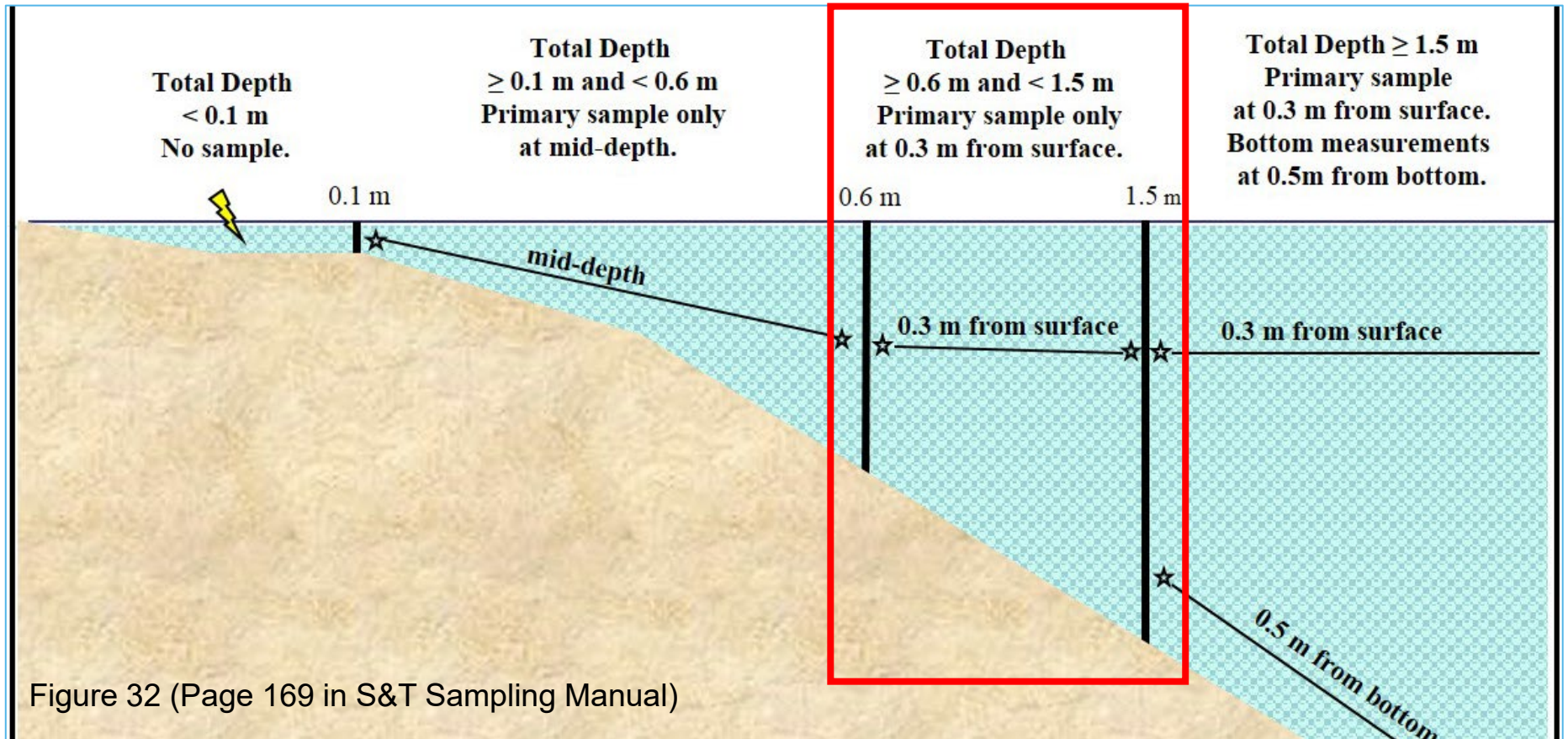


Figure 32 (Page 169 in S&T Sampling Manual)

SAMPLE COLLECTION DEPTH

ALL STATUS AND TREND, ALL RESOURCE TYPES

When Depth ≥ 1.5 m:

- Primary sample 0.3 m below the surface.
- Bottom field measurements 0.5 m from the bottom.
- Record Total, Sample, Secchi depth to nearest 0.1 m (measure twice).

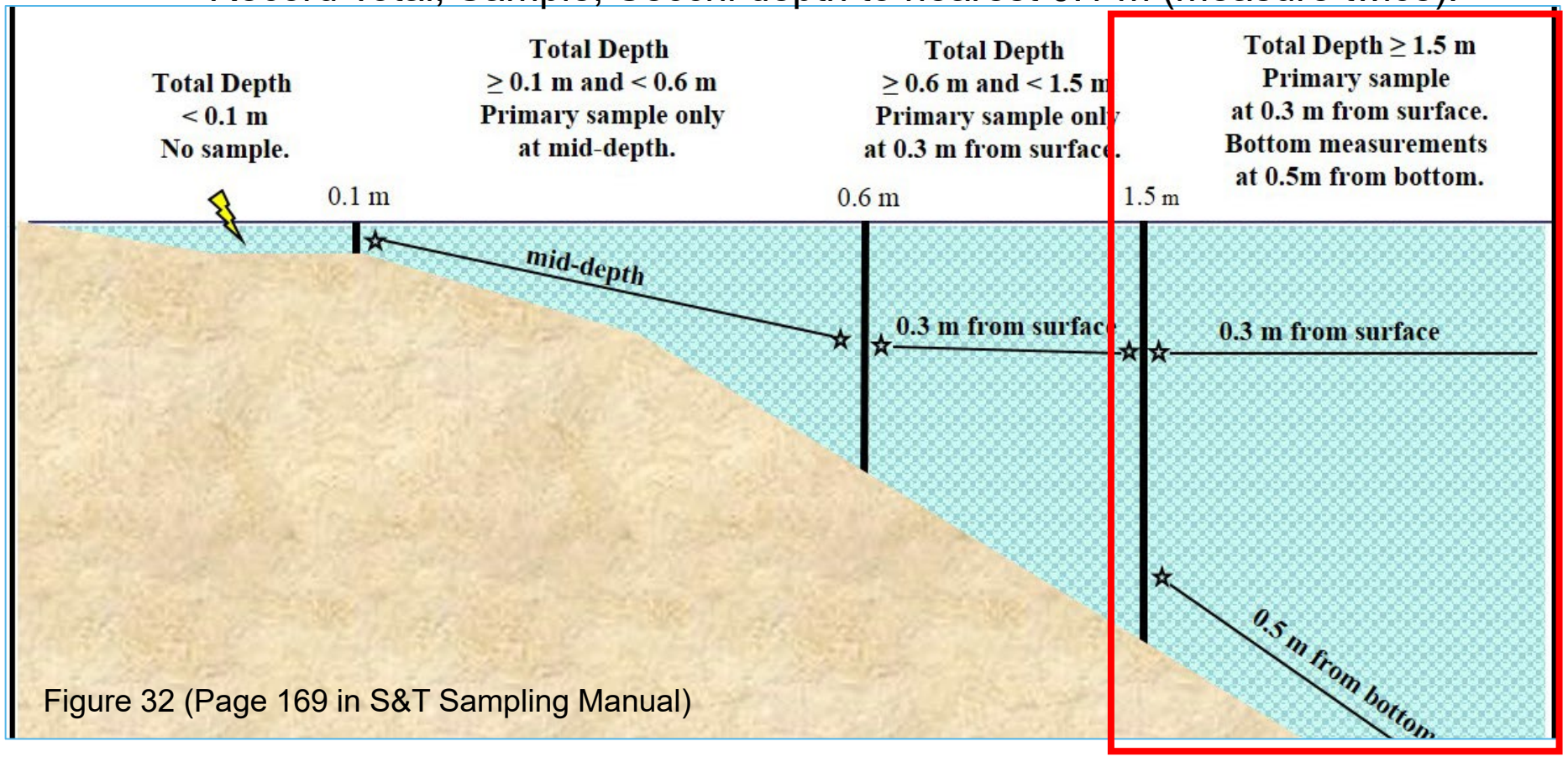


Figure 32 (Page 169 in S&T Sampling Manual)

FIELD MEASUREMENTS

- Record field measurements to the number of decimal places indicated in **Table 6** (Page 133 in Status and Trend Sampling Manual).
- Notice that all digits are displayed for all field parameters **except** depth.
- Pay attention to **field measured depth** to determine decimal places.

Parameter	Number of Decimal Places to Record	Calibration / Verification Frequency	Acceptance Criteria
pH (FT 1100)	All Digits Displayed	Daily: IC, ICV, CCV.	± 0.2 SU
Specific Conductance (FT 1200)	All Digits Displayed	Daily: IC, ICV, CCV.	± 5%
Dissolved Oxygen (mg/L and % Saturation) (FT 1500)	All Digits Displayed	Daily: IC, ICV, CCV.	± 0.3 mg/L
Temperature (FT 1400)	All Digits Displayed	Quarterly: CCV.	± 0.5 °C
Turbidity (FT 1600)	All Digits Displayed	Daily: CCV. Quarterly: IC, ICV, secondary standard verification.	0.1 – 10 NTU: ± 10%; 11 – 40 NTU: ± 8%; 41 – 100 NTU: ± 6.5%; > 100 NTU: ± 5%
Depth	Calibrations & Verifications: 2 for electronic devices; 1 for manual devices. Field Measurements: 2 if total depth < 0.6 m; 1 if total depth ≥ 0.6 m	Daily: IC, ICV for Sondes. Quarterly: Verify Sondes & Electronic Devices. Every 6 months: Inspect Manual Devices.	ICV: ± 5% or ± 0.05 m, whichever is greater. Electronic Device Verification: ± 10%. Line Increments: ± 10%. Total Length of Lines: ± 5%.

TOTAL, SAMPLE, AND SECCHI DEPTH

- Total and sample depths.
  - Measure using manual/electronic device.
- Secchi depth.
  - Measure on shady side of boat/body.
  - Remove sunglasses.
  - Record the depth at which disk disappears.
  - Lower the disk slightly further. Raise the disk till it reappears and record that depth.
  - Average these two depths.
  - Visible on bottom?
    - Add “S” Qualifier and result comment.
- Swift currents/choppy water affect the accuracy?
  - Add “J” Qualifier and result comment.

FIELD INDICATORS

INFO ABOUT THE DATA COLLECTION

Collection Time:
The times must be the same on:

1. Primary collection on field sheet.
2. Sample container.
3. Custody sheet.

PRIMARY (SURFACE) SAMPLE	Collection Time (24 hr): PRIMARY ☐ ETZ / ☐ CTZ		
☐ Check here if Secchi depth visible on bottom (S qualifier needed).			
☐ Check here if bottom measurements not collected because total depth < 1.5 m.			
PARAMETER	**VALUE**	**QUALIFIER(S)**	**RESULT COMMENT**
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Secchi Depth (m)			
Total Depth (m)			
Sp. Cond. (umhos/cm)			
BOTTOM SAMPLE (FIELD MEAS. ONLY)	**Collection Time** (24 hr): _____ ☐ ETZ / ☐ CTZ		
PARAMETER	**VALUE**	**QUALIFIER(S)**	**RESULT COMMENT**
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Sp. Cond. (umhos/cm)			

FIELD INDICATORS

INFO ABOUT THE DATA COLLECTION

- Bottom field measurements should have a unique sample collection time compared to the primary sample time.

PRIMARY (SURFACE) SAMPLE	Collection Time (24 hr): _____ ☐ ETZ / ☐ CTZ		
☐ Check here if Secchi depth visible on bottom (S qualifier needed).			
☐ Check here if bottom measurements not collected because total depth < 1.5 m.			
PARAMETER	**VALUE**	**QUALIFIER(S)**	**RESULT COMMENT**
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Secchi Depth (m)			
Total Depth (m)			
Sp. Cond. (umhos/cm)			
BOTTOM SAMPLE (FIELD MEAS. ONLY)	Collection Time (24 hr): unique ☐ ETZ / ☐ CTZ		
PARAMETER	**VALUE**	**QUALIFIER(S)**	**RESULT COMMENT**
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Sp. Cond. (umhos/cm)			

COMMENTS

INFO ABOUT THE DATA COLLECTION

We love comments! Be specific!

Remember Qualifiers!

PRIMARY (SURFACE) SAMPLE **Collection Time** (24 hr): ☐ ETZ / ☐ CTZ

☐ Check here if Secchi depth visible on bottom (S qualifier needed).

☐ Check here if bottom measurements not collected because total depth < 1.5 m.

PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Secchi Depth (m)			
Total Depth (m)			
Sp. Cond. (umhos/cm)			

Result Comments

BOTTOM SAMPLE (FIELD MEAS. ONLY) **Collection Time** (24 hr): _____ ☐ ETZ / ☐ CTZ

PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Sp. Cond. (umhos/cm)			

Result Comments

SAMPLE COMMENTS

PRIMARY (SURFACE):
BOTTOM:

Sample Comments

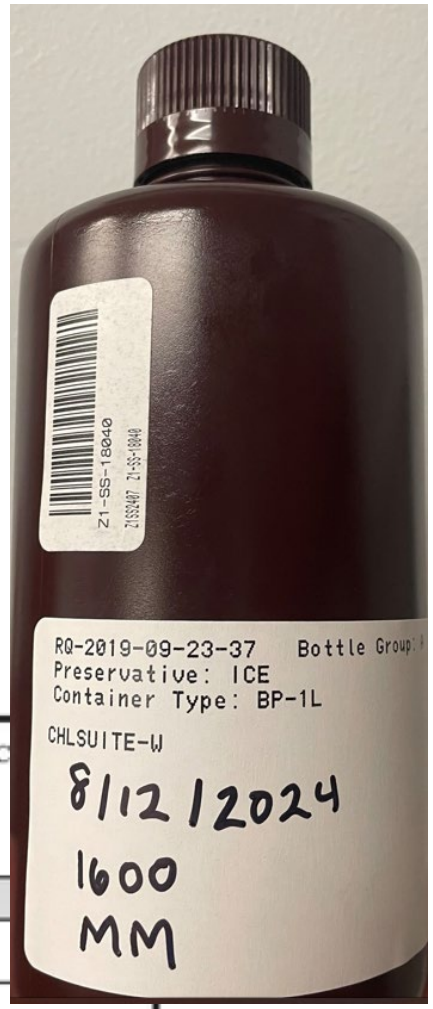
OFFICE USE ONLY

SAMPLE BOTTLES/CONTAINERS

- All containers provided by lab are new/certified clean.
- **Do not pre-rinse containers.**
- Do not touch inside of containers or the threads on the neck.

SAMPLE CONTAINER LABELS

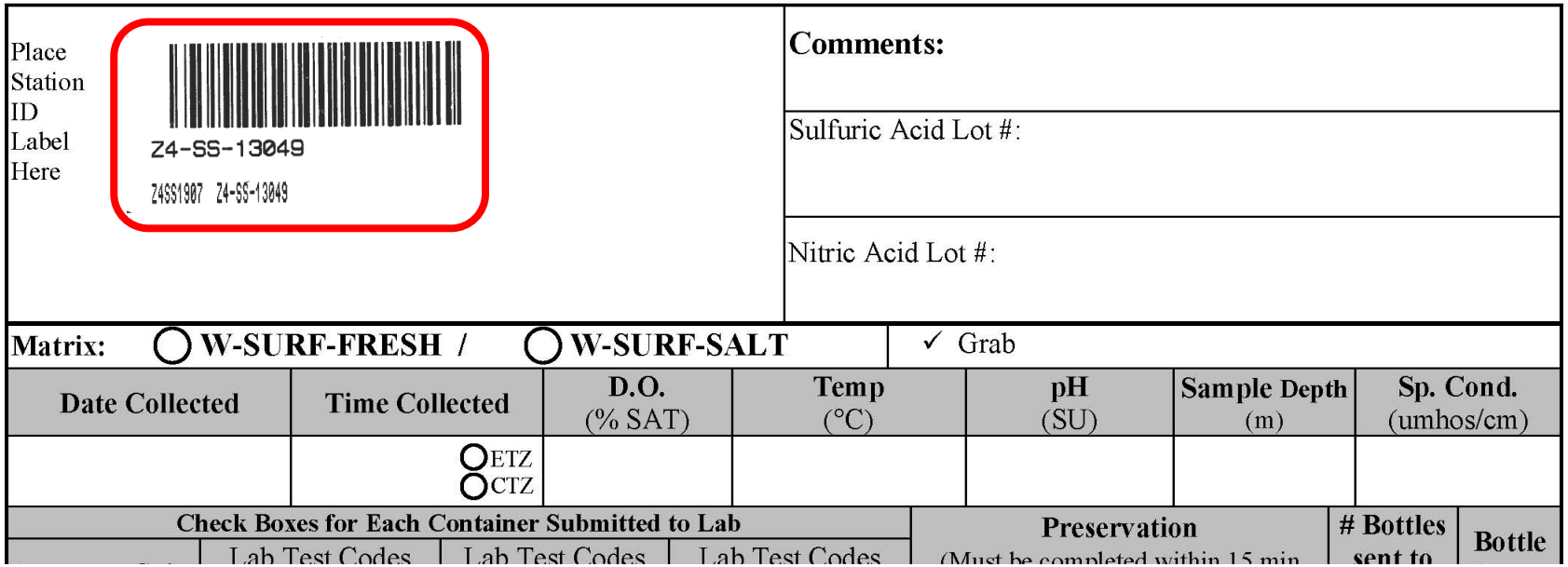
- Place Station ID Label vertically on all sample containers.
- Record date, time, and sampler initials on Lab ID label.
- Date/Time on sample bottle **must match** primary field measurement date/time.



PRIMARY (SURFACE) SAMPLE	Collection Time (24 hr): PRIMARY ☐ ETZ / ☐ C		
☐ Check here if Secchi depth visible on bottom (S qualifier needed).			
☐ Check here if bottom measurements not collected because total depth < 1.5 m.			
PARAMETER	**VALUE**	**QUALIFIER(S)**	**RESULT COMMENT**
D.O. (mg/L)			
D.O. (% SAT)			

LABELING

Station ID barcodes on sample details page.



Place Station ID Label Here	Comments:
Z4-SS-13049 Z4SS1907 Z4-SS-13049	Sulfuric Acid Lot #:
	Nitric Acid Lot #:

Matrix: ○ W-SURF-FRESH / ○ W-SURF-SALT	✓ Grab

Date Collected	Time Collected	D.O. (% SAT)	Temp (°C)	pH (SU)	Sample Depth (m)	Sp. Cond. (umhos/cm)
	○ ETZ ○ CTZ					

Check Boxes for Each Container Submitted to Lab				Preservation	# Bottles sent to	Bottle
	Lab Test Codes	Lab Test Codes	Lab Test Codes	(Must be completed within 15 min		

Barcodes auto-generated on field sheets produced by submitting data with Survey123.

SAMPLE COLLECTION

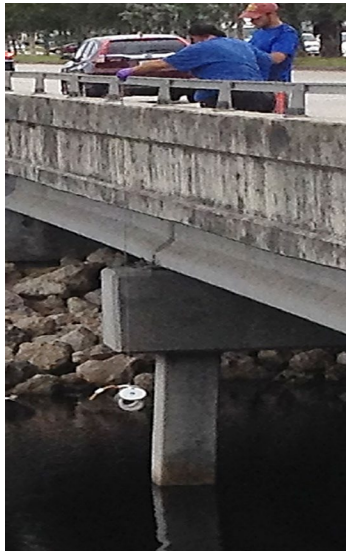
GENERAL

- **Always wear gloves** when handling sample containers and equipment.
- Collect water samples on **upstream** side of boat/body.
- **Avoid disturbing** the sediments or wait for sediments to settle.
- Collect water samples **before** collecting sediments or performing bioassessment.

SAMPLE COLLECTION METHODS

Direct Grab
(preferable)

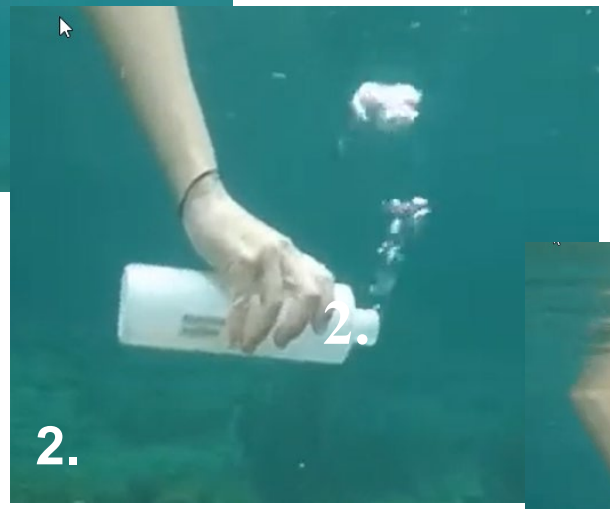
Van Dorn



GRAB SAMPLES

Leave
Head
Space

GRAB SAMPLES



What is missing from these images?

Leave Head Space

WEAR GLOVES WHILE COLLECTING SAMPLES

VAN DORN COMPONENTS

- Body.
- End caps.
- Trip mechanism.
- Rope.
- Messenger.
- Drain valves.

VAN DORN SAMPLING

DEPLOYMENT PREP

- Consider the depth of the water body and if deployment at 0.3 m will disturb sediments.
- Place a mark on the line at the appropriate sampling depth.
- Rinse first.
  - Flush open device for good velocity systems.
  - Or capture device and rinse/release away/downstream from the sample location.
  - Remember to flush water through spigot/stopcock.

VAN DORN SAMPLING

DEPLOYMENT PREP

- Once rinsed, lower the open device into the water referencing the marked line.
- Send messenger down to close.
- Retrieve the device.

VAN DORN SAMPLING

FILLING SAMPLING BOTTLES

- Agitate to minimize settling of particulates.
- Release some water through spigot before filling containers.
- Fill Containers leaving headspace.
  - Allow water to flow continuously and fill in rapid succession.

OR

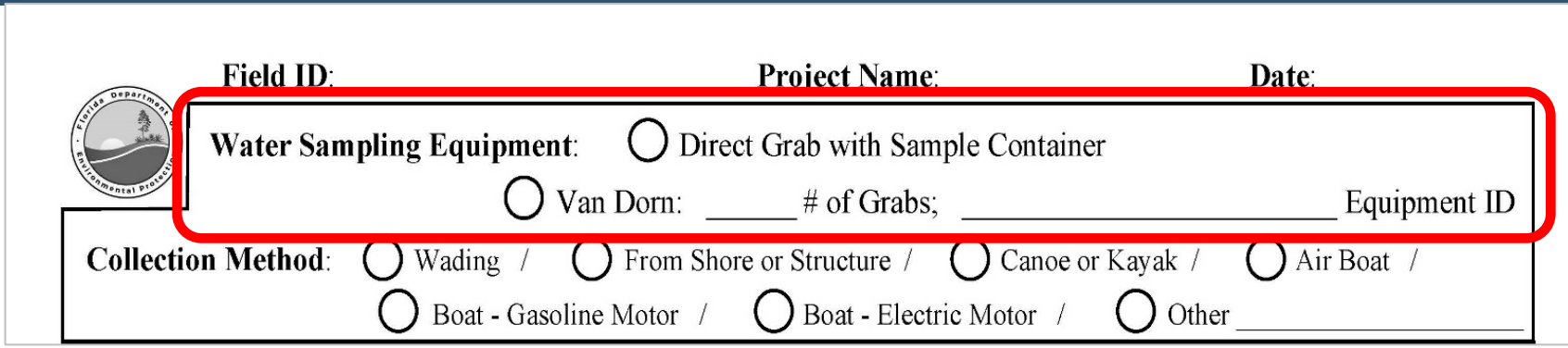
  - Stop/start flow between each container after agitating Van Dorn to uniformly mix contents.

VAN DORN SAMPLING

FILLING SAMPLING BOTTLES

- Fill microbiology containers last.
- When filling microbiology containers do not stop flow before or during the filling process.
- Take care to avoid touching the inside of the containers or the threads.
- Secure container lids.

DOCUMENTATION


Field ID: Project Name: Date:

Water Sampling Equipment: ○ Direct Grab with Sample Container

○ Van Dorn: _____ # of Grabs; _____ Equipment ID

Collection Method: ○ Wading / ○ From Shore or Structure / ○ Canoe or Kayak / ○ Air Boat /

○ Boat - Gasoline Motor / ○ Boat - Electric Motor / ○ Other _____

- **Select** water sample collection device type on field sheet.
- Record **Equipment ID** and **number of grabs** collected with the Van Dorn.
  - Same Equipment IDs must be used on Field Sheets and in Cleaning Log.

SW SAMPLE DETAILS PAGE

Check Boxes for Each Container Submitted to Lab				Preservation (Must be completed within 15 min of sample collection)
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	
Chlorophyll (BP-1L)	☐ CHLSUITE-W	☐ CHLSUITE-W		☐ Ice
Nutrients (P-500ML)	☐ W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC	☐ W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC		☐ 2ML H_2SO_4 ☐ pH < 2 ☐ Ice
Metals (P-500ML)	☐ W-HARD / W-ICP / W-ICPMS	☐ W-HARD / W-ICP / W-ICPMS		☐ 2ML HNO_3 ☐ pH < 2 ☐ Ice
Anion / Phys. Aggregate (P-1L)	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TDS / W-TSS	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TDS / W-TSS		☐ Ice

All sample containers filled/preserved (including on ice) within **15 min** of first grab collection.

Preserve nutrients with sulfuric acid (H_2SO_4) before preserving metals with nitric acid (HNO_3) to avoid contamination.

SW SAMPLE DETAILS PAGE

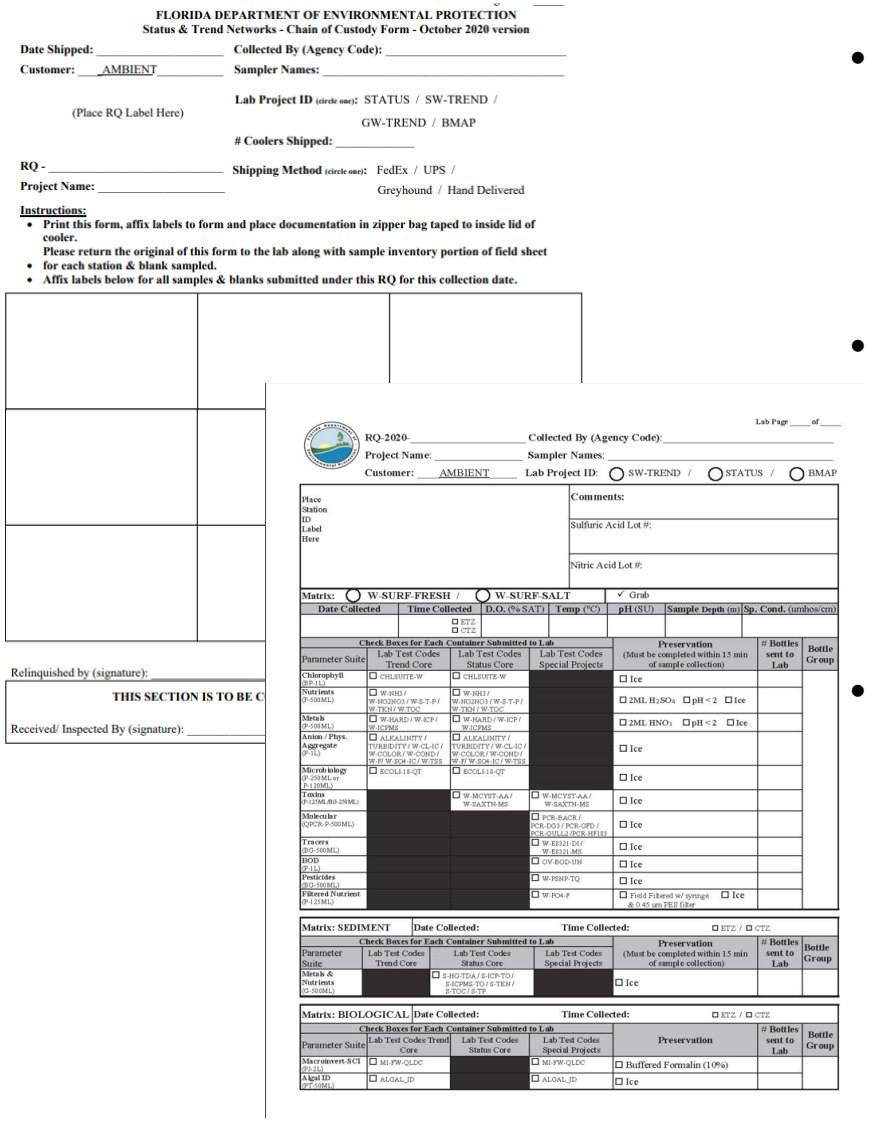
Check Boxes for Each Container Submitted to Lab				Preservation (Must be completed within 15 min of sample collection)
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes ial Projects	
Chlorophyll (BP-1L)	☐ CHLSUITE-W	☐ CHLSUITE-W		☐ Ice
Nutrients (P-500ML)	☐ W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC	☐ W-NH3 / W-NO2NO3 / W-S-T- W-TKN / W-TOC		2ML H_2SO_4 ☐ pH < 2 ☐ Ice
Metals (P-500ML)	☐ W-HARD / W-ICP / W-ICPMS	☐ W-HARD / W-ICP / W-ICPMS		ML HNO_3 ☐ pH < 2 ☐ Ice
Anion / Phys. Aggregate (P-1L)	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TDS / W-TSS	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TDS / W-TSS		☐ Ice

?? mistake

If you make a mistake, document what occurred.

- Helps lab staff determine how to prepare and analyze samples.
- Helps data users understand if data are appropriate for inclusion in reporting/statistical analyses.

AFTER COLLECTING SAMPLES



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Status & Trend Networks - Chain of Custody Form - October 2020 version

Date Shipped: _____ Collected By (Agency Code): _____
Customer: AMBIENT Sampler Names: _____
(Place RQ Label Here) Lab Project ID (circle one): STATUS / SW-TREND / GW-TREND / BMAP
Coolers Shipped: _____
RQ - _____ Shipping Method (circle one): FedEx / UPS / Greyhound / Hand Delivered
Project Name: _____

Instructions:
- Print this form, affix labels to form and place documentation in zipper bag taped to inside lid of cooler.
  Please return the original of this form to the lab along with sample inventory portion of field sheet
- for each station & blank sampled.
- Affix labels below for all samples & blanks submitted under this RQ for this collection date.

Relinquished by (signature): _____
THIS SECTION IS TO BE C
Received/ Inspected By (signature): _____

Lab Page ____ of ____
RQ-2020-_____ Collected By (Agency Code): _____
Project Name: _____ Sampler Names: _____
Customer: AMBIENT Lab Project ID: SW-TREND / STATUS / BMAP

Place Station ID Label Here | Comments: | Sulfuric Acid Lot #: | Nitric Acid Lot #:

Matrix: W-SURF-FRESH / W-SURF-SALT ✓ Grab

Date Collected	Time Collected	D.O. (% SAT)	Temp (°C)	pH (SU)	Sample Depth (m)	Sp. Cond. (umhos/cm)
	☐ ETZ ☐ CTZ					

Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation (Must be completed within 15 min of sample collection)	# Bottles sent to Lab	Bottle Group
Chlorophyll (EP-1L)	☐ CHLSUITE-W	☐ CHLSUITE-W		☐ Ice		
Nutrients (P-500ML)	☐ W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC	☐ W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC		☐ 2ML H_2SO_4 ☐ pH < 2 ☐ Ice		
Metals (P-500ML)	☐ W-HARD / W-ICP / W-ICPMS	☐ W-HARD / W-ICP / W-ICPMS		☐ 2ML HNO_3 ☐ pH < 2 ☐ Ice		
Anion / Phys. Aggregate (P-1L)	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-P/ W-SOL-IC / W-TSS	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-P/ W-SOL-IC / W-TSS		☐ Ice		
Microbiology (P-250ML or P-120ML)	☐ ECOLI-18-QT	☐ ECOLI-18-QT		☐ Ice		
Toxins (P-125ML/BIO-250ML)		☐ W-MCYST-AA / W-SAXTH-MS	☐ W-MCYST-AA / W-SAXTH-MS	☐ Ice		
Molecular (QPCR-P-500ML)			☐ PCR-BACR / PCR-DO1 / PCR-OPD / PCR-SOIL4 /PCR-HPIII	☐ Ice		
Tracers (BO-500ML)			☐ W-E8321-DI / W-E8321-MS	☐ Ice		
BOD (P-1L)			☐ OV-BOD-UN	☐ Ice		
Pesticides (BO-500ML)			☐ W-PSNP-TQ	☐ Ice		
Filtered Nutrient (P-125ML)			☐ W-PO4-F	☐ Field Filtered w/ syringe & 0.45 um PES filter ☐ Ice		

Matrix: SEDIMENT Date Collected: Time Collected: ☐ ETZ / ☐ CTZ

Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation (Must be completed within 15 min of sample collection)	# Bottles sent to Lab	Bottle Group
Metals & Nutrients (G-500ML)		☐ S-HG-TOA / S-ICP-TO / S-ICPMS-TO / S-TKN / S-TOC / S-TP		☐ Ice		

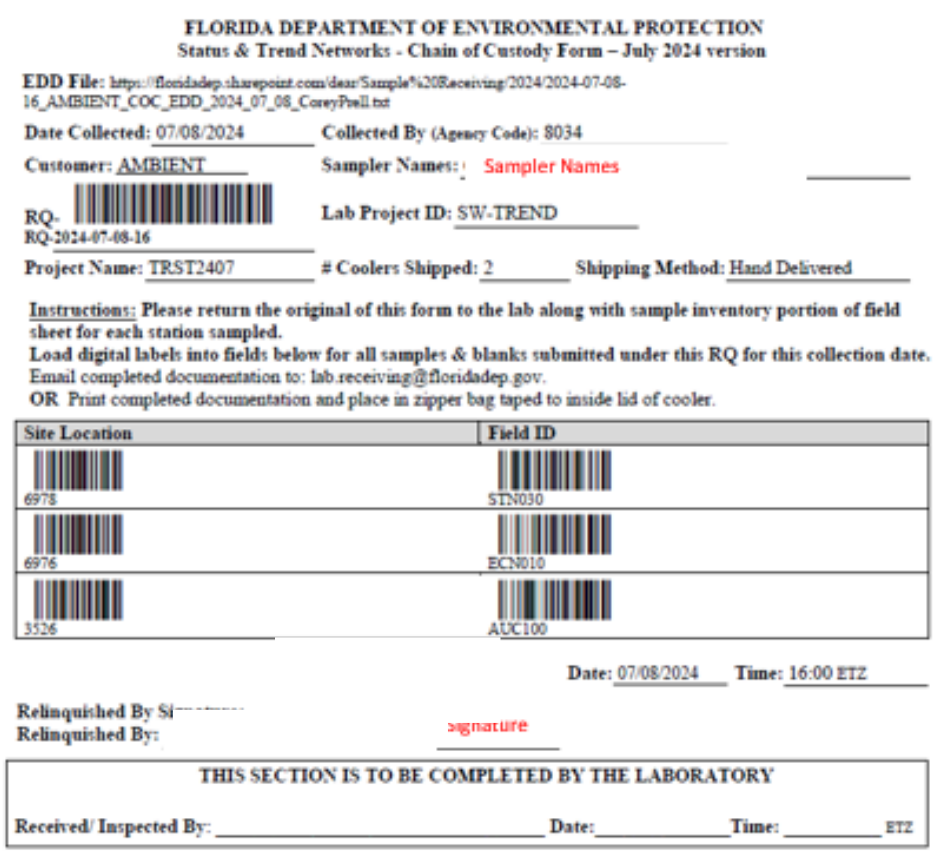
Matrix: BIOLOGICAL Date Collected: Time Collected: ☐ ETZ / ☐ CTZ

Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation	# Bottles sent to Lab	Bottle Group
Macroinvert-SCI (IO-2L)	☐ MI-FW-QLDC		☐ MI-FW-QLDC	☐ Buffered Formalin (10%)		
Algal ID (BT-60ML)	☐ ALGAL_ID		☐ ALGAL_ID	☐ Ice		

- Doublecheck paperwork to note if it is filled out completely/correctly.
- Ensure ice and samples are in trash bags inside the coolers to prevent leaks.
- Using paper copies of the field sheets?
  - Insert **Chain of Custody** forms in a ziptop bag and tape to the inside lid of the cooler.

AFTER COLLECTING SAMPLES

SURVEY123 USERS



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Status & Trend Networks - Chain of Custody Form – July 2024 version

EDD File: https://floridadep.sharepoint.com/dear/Sample%20Receiving/2024/2024-07-08-16_AMBIENT_COC_EDD_2024_07_08_CoreyPrell.txt

Date Collected: 07/08/2024 **Collected By (Agency Code):** 8034

Customer: AMBIENT **Sampler Names:** Sampler Names

RQ- RQ-2024-07-08-16

Lab Project ID: SW-TREND

Project Name: TRST2407 **# Coolers Shipped:** 2 **Shipping Method:** Hand Delivered

Instructions: Please return the original of this form to the lab along with sample inventory portion of field sheet for each station sampled.
Load digital labels into fields below for all samples & blanks submitted under this RQ for this collection date.
Email completed documentation to: lab.receiving@floridadep.gov.
OR Print completed documentation and place in zipper bag taped to inside lid of cooler.

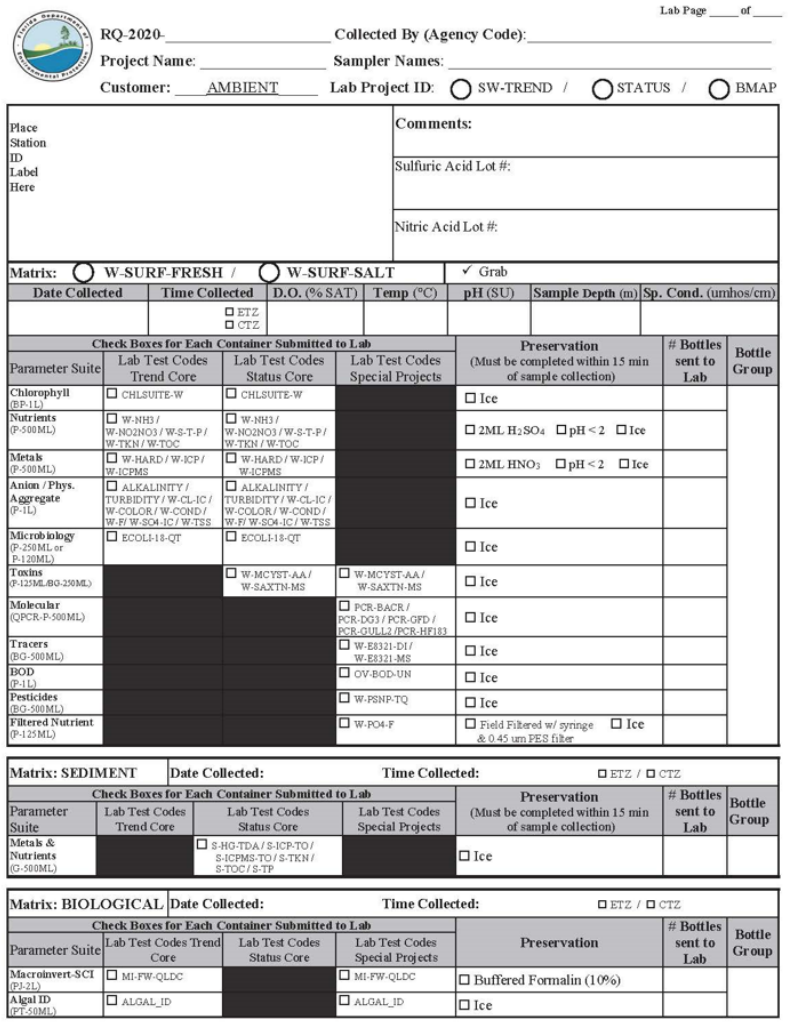
Site Location	Field ID
6978	STN030
6976	ECN010
3526	AUC100

Date: 07/08/2024 **Time:** 16:00 ETZ

Relinquished By Si
Relinquished By: signature

THIS SECTION IS TO BE COMPLETED BY THE LABORATORY

Received/ Inspected By: _____ **Date:** _____ **Time:** _____ ETZ



Lab Page ____ of ____

RQ-2020-_____ Collected By (Agency Code): _____
Project Name: _____ Sampler Names: _____
Customer: AMBIENT Lab Project ID: ○ SW-TREND / ○ STATUS / ○ BMAP

Place Station ID Label Here

Comments:
Sulfuric Acid Lot #:
Nitric Acid Lot #:

Matrix: ○ W-SURF-FRESH / ○ W-SURF-SALT ✓ Grab

Date Collected	Time Collected	D.O. (% SAT)	Temp (°C)	pH (SU)	Sample Depth (m)	Sp. Cond. (umhos/cm)
	☐ ETZ ☐ CTZ					

Check Boxes for Each Container Submitted to Lab						
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation (Must be completed within 15 min of sample collection)	# Bottles sent to Lab	Bottle Group
Chlorophyll (BP-1L)	☐ CHLSUITE-W	☐ CHLSUITE-W		☐ Ice		
Nutrients (P-500ML)	☐ W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC	☐ W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC		☐ 2ML H_2SO_4 ☐ pH < 2 ☐ Ice		
Metals (P-500ML)	☐ W-HARD / W-ICP / W-ICPMS	☐ W-HARD / W-ICP / W-ICPMS		☐ 2ML HNO_3 ☐ pH < 2 ☐ Ice		
Anion / Phys. Aggregate (P-1L)	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TSS	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TSS		☐ Ice		
Microbiology (P-250ML or P-120ML)	☐ ECOLI-18-QT	☐ ECOLI-18-QT		☐ Ice		
Toxins (P-125ML/BG-250ML)		☐ W-MCYST-AA / W-SAXTN-MS	☐ W-MCYST-AA / W-SAXTN-MS	☐ Ice		
Molecular (QPCR-P-500ML)			☐ PCR-BACR / PCR-DG3 / PCR-GFD / PCR-GULL2 /PCR-HF183	☐ Ice		
Tracers (BG-500ML)			☐ W-E8321-DI / W-E8321-MS	☐ Ice		
BOD (P-1L)			☐ OV-BOD-UN	☐ Ice		
Pesticides (BG-500ML)			☐ W-PSNP-TQ	☐ Ice		
Filtered Nutrient (P-125ML)			☐ W-PO4-F	☐ Field Filtered w/ syringe & 0.45 um PES filter ☐ Ice		

Matrix: SEDIMENT **Date Collected:** **Time Collected:** ☐ ETZ / ☐ CTZ

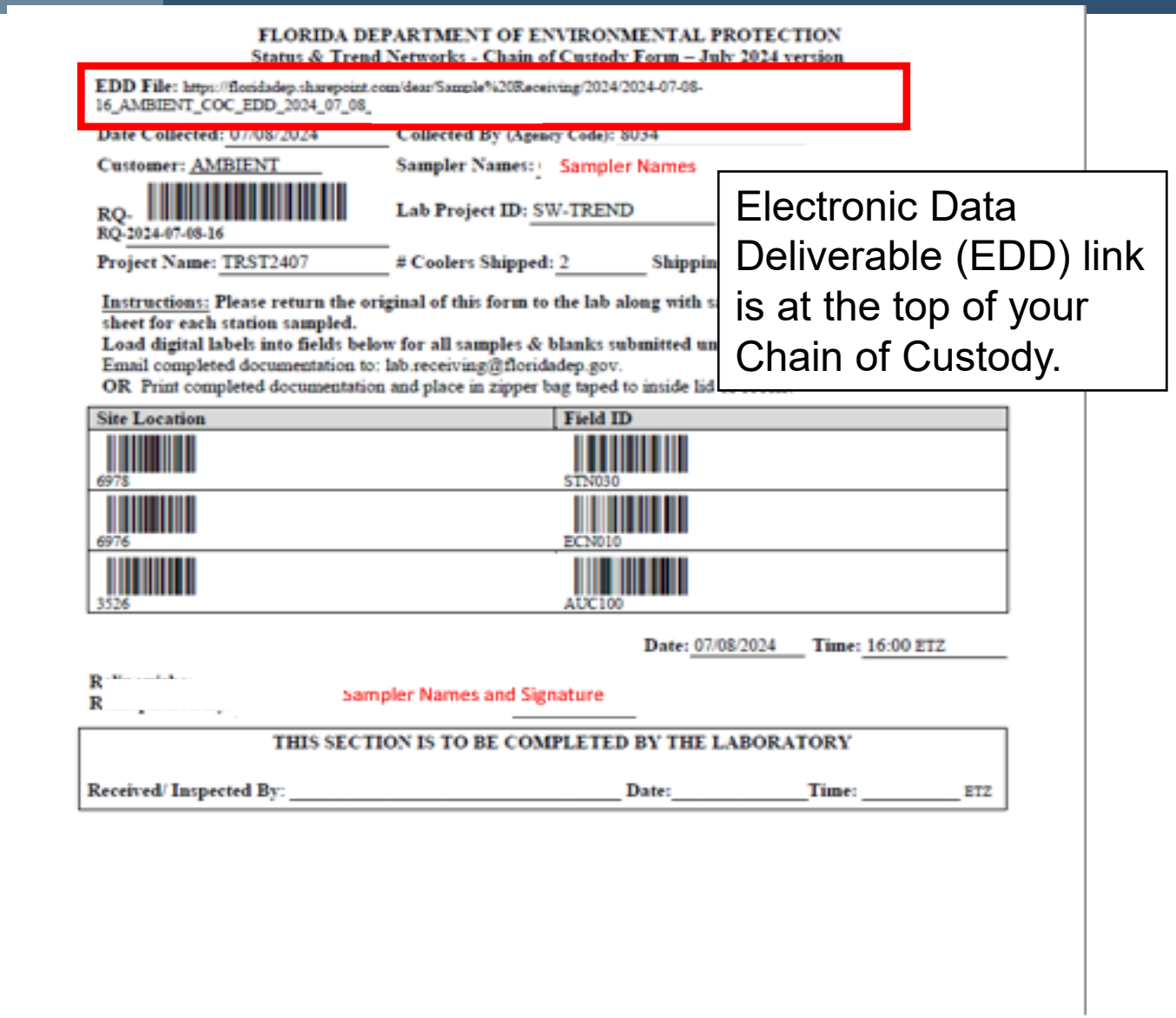
Check Boxes for Each Container Submitted to Lab						
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation (Must be completed within 15 min of sample collection)	# Bottles sent to Lab	Bottle Group
Metals & Nutrients (G-500ML)		☐ S-HG-TDA / S-ICP-TO / S-ICPMS-TO / S-TKN / S-TOC / S-TP		☐ Ice		

Matrix: BIOLOGICAL **Date Collected:** **Time Collected:** ☐ ETZ / ☐ CTZ

Check Boxes for Each Container Submitted to Lab						
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation	# Bottles sent to Lab	Bottle Group
Macroinvert-SCI (PJ-2L)	☐ MI-FW-QLDC		☐ MI-FW-QLDC	☐ Buffered Formalin (10%)		
Algal ID (PT-500ML)	☐ ALGAL_ID		☐ ALGAL_ID	☐ Ice		

- Submit your field sheets with Survey123.
- Email the **Chain of Custody** to the lab at lab.receiving@floridadep.gov.

AFTER COLLECTING SAMPLES



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Status & Trend Networks - Chain of Custody Form – July 2024 version

EDD File: https://floridadep.sharepoint.com/dear/Sample%20Receiving/2024/2024-07-08-16_AMBIENT_COC_EDD_2024_07_08_

Date Collected: 07/08/2024 Collected By (Agency Code): 8034

Customer: AMBIENT Sampler Names: Sampler Names

RQ- RQ-2024-07-08-16 Lab Project ID: SW-TREND

Project Name: TRST2407 # Coolers Shipped: 2 Shippin

Instructions: Please return the original of this form to the lab along with s
sheet for each station sampled.
Load digital labels into fields below for all samples & blanks submitted un
Email completed documentation to: lab.receiving@floridadep.gov.
OR Print completed documentation and place in zipper bag taped to inside lid

Site Location	Field ID
6978	STN030
6976	ECN010
3526	AUC100

Date: 07/08/2024 Time: 16:00 ETZ

R
R Sampler Names and Signature

THIS SECTION IS TO BE COMPLETED BY THE LABORATORY

Received/ Inspected By: _____ Date: _____ Time: _____ ETZ

Electronic Data Deliverable (EDD) link is at the top of your Chain of Custody.

- Beginning July 2024, Status and Trends Custody sheets include a link to the Electronic Data Deliverable (EDD) that the lab uses during sample login.

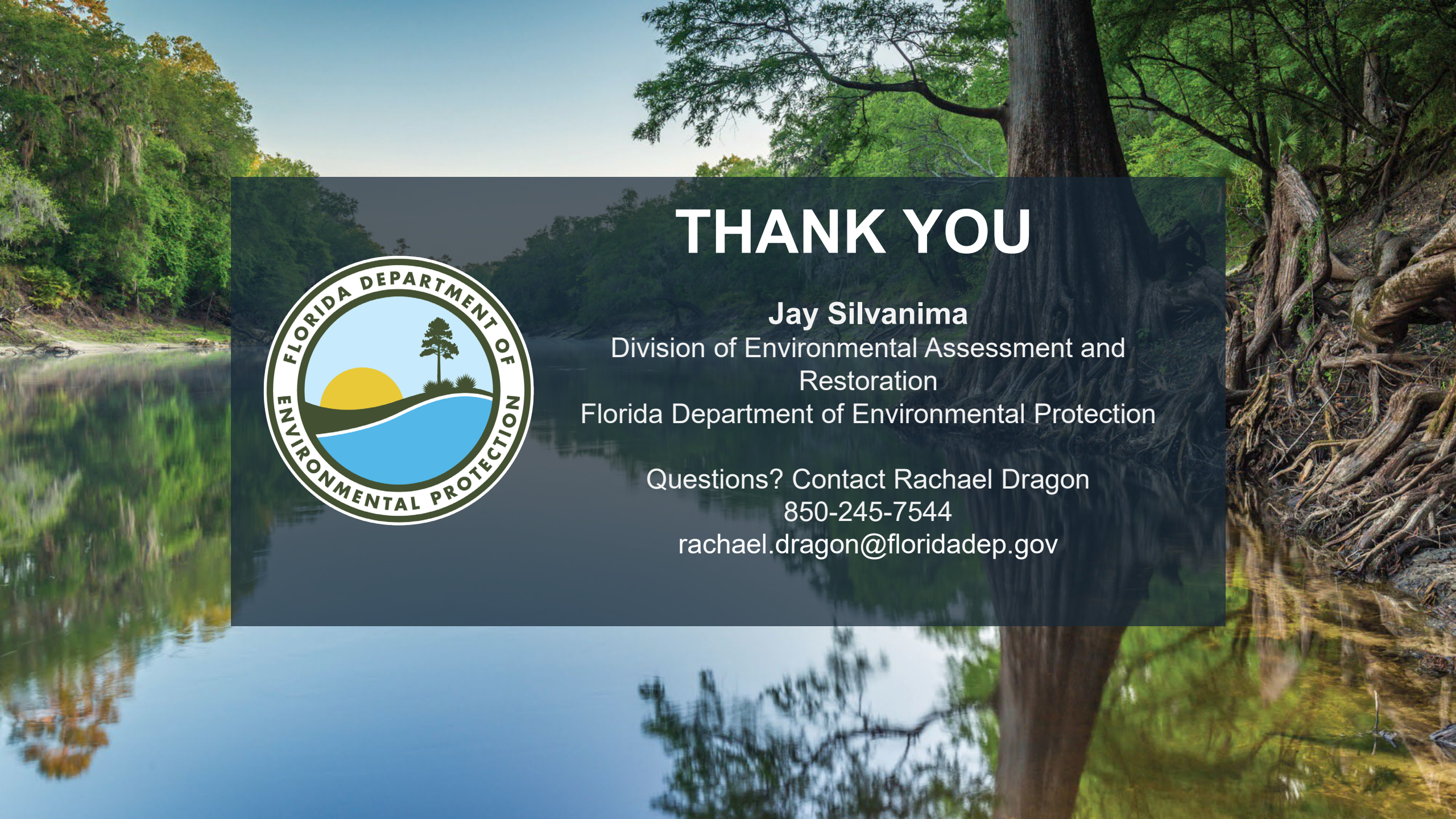
- Need to make a correction?
  - Do NOT make the edit on the PDF.
  - Instead, please submit a corrected Survey123 response.

  If the data is no longer in your Survey123 sent box, email Stephanie and Tommy A. the corrections.

DOCUMENTATION

- Survey123 Field Sheets.
- Owner info discrepancies not noted on Survey123 (Status).
- Photos.
- QA Report.
- All logs:
  - Calibration.
  - Depth.
  - Temperature.
  - Cleaning logs.

Let the project manager know when all files are complete and available for review.



THANK YOU

Jay Silvanima
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

Questions? Contact Rachael Dragon
850-245-7544
rachael.dragon@floridadep.gov