

Roadblocks to Seagrass Recovery

2016

OWQ Field Operations Manual (FOM)



Initial Data recording

Upon arrival use your GPS to navigate and anchor within 25 meters of your site. Create a new waypoint and record its name or number in the 'MARK' location on the field data sheet. Write down the corresponding estuary and the initials of your crew. Record station ID, date, time, and time reference (time zone). Fill out the latitude and longitude on the field data sheet in Decimal Degrees. Use GPS to determine tide height (in feet), and if it is Rising (R), Falling (F), or Slack (S). If you can observe the bottom, make a note of habitat texture (HABTXT) and estimate percentage of seagrass cover (%COVER). Otherwise write 'N/A'. Indicate if seagrass is present and bottom type.

- Below are the standard procedures for each task during OWQ field sampling.

1) Secchi Disk

- a) Remove sunglasses and hats before taking readings
- b) Slowly lower secchi disk into water on the shady side of the boat until disk disappears
- c) Record depth to the closest cm from waterline
- d) If secchi disk can be seen to the bottom, record "CTB" (Clear to Bottom)

2) Depth

- a) Drop weight slowly into water
- b) Record depth when the weight reaches bottom to the closest cm from waterline
- c) Make sure weight is not sinking into mud

3) Hydrographic Profile

- a) Calibrate equipment according to the manufacturer's instructions prior to use in field
- b) Startup calibrated Eureka Sonde/ YSI
- c) Place probe into water
- d) Give a slow 8 count for probe to stabilize and begin logging
- e) After stabilization, record surface water temperature in **degree Celsius**. Include two decimal places.
- f) Record surface conductivity (**mS**), surface salinity (**ppt**), and surface water pH to the nearest hundredth. (xx.xx mS/ xx.xx ppt)
- g) Record surface dissolved oxygen to the nearest tenth percent (xx.x %)
- h) Slowly lower the probe, resting at 1 meter increments for 15 seconds until it reaches bottom.
- i) When you feel the probe touch bottom, lift up slightly and wait a slow 8 count before recording measurements
- j) Record bottom water temperature in **degree Celsius**. Include two decimal places.
- k) Record bottom conductivity (**mS**), surface salinity (**ppt**), and surface water pH to the nearest hundredth. (xx.xx mS/ xx.xx ppt)
- l) Record bottom dissolved oxygen to the nearest tenth percent (xx.x %)
- m) Slowly pull probe back up to surface, resting at 1 m increments for 15 seconds.
- n) At surface, turn logging off and remove sonde/YSI from water and return to cast

4) Water Collection

- a) Allow sediment stirred up from arrival to settle before collecting water samples
- b) Rinse hands in water and avoid collecting water contaminated by residual sweat or sunscreen by collecting water up current.
- c) Remove OWQ kit from cooler
- d) Record kit number on field data form 'Kit #'
- e) Empty contents onto clean area.
- f) Avoid touching inside of bottles or lids
- g) Fill 1-liter TSS bottle partially with ambient water.
- h) Cap, rinse, and decant water. Repeat 2 times
- i) Fill 1-liter TSS bottle to the shoulder of the bottle to allow air for shaking.
- j) Repeat procedure for remainder of bottles (Turb, UNF, COLTURB)
- k) Mark with a 'Y' on data sheet each bottle filled. Place filled bottles in cooler with ice

5) Light Profile

- a) This is a two person task. One will record data while the other holds the pole connected to the PAR sensors.
- b) Fill out data sheet including site, date, time, wind speed (WSPD) and direction (WDIR), sea state, location on boat of pole holder, and cloud percentage and type.
- c) Connect deck sensor, underwater flat sensor, and underwater spherical sensor cables to the Licor 1400 unit.
- d) Check that calibration multipliers are correct for each sensor
- e) Set logging intervals to mean readings with a 15 second refresh rate
- f) Place deck sensor face up in a high, unshaded location on the boat
- g) Assemble PAR meter so that both sensors are facing upward when submerged
- h) Make sure sensors are plum with the meter pole
- i) Position the pole on the sunny side of the boat. Lower sensors into the water to your first depth (see below o-p), making sure they are pointing outward from the boat away from any shadows
- j) Turn on LI-1400
- k) Turn logging on
- l) When sensors stabilizes, you may begin recording data onto the data sheet
- m) Record all three measurements (DK1, SPH, FLT) when they refresh every 15 seconds. Do this four times at each depth.
- n) When shifting depth allow the readings to cycle through a 15 second period to stabilize the sensors
- o) If the total depth of the site exceeds 2.5m, take four readings at depths 0.5m, 1.5m, 2.5m, 1.5m and 0.5m again on an upcast.
- p) If the total depth of the site is less than 2.5m, take three readings at depths 0.25m, 0.75m, 1.25m, 0.75m, and 0.25m again on an upcast.
- q) Allow readings to stabilize at each depth before recording data at the depth
- r) Minimize the effects of waves by adjusting the pole to keep the light sensors at a constant depth.
- s) When entire profile is complete, turn logging off.

6) Description of terms

- a) **COLLECTOR:** Person(s) collecting data and samples
- b) **DATE:** date of collection; mm/dd/yyyy
- c) **TIME REF:** Time zone and reference to daylight savings time (Eastern Standard Time (EST), Eastern Daylight Savings Time (EDT), Central Standard Time (CST) or Central Daylight Savings Time (CDT))
- d) **STATION:** Station ID
- e) **TIME:** time of arrival at station; 24:00
- f) **TIDE HT:** tide height at time of sample collection; include + or – where appropriate; indicate tide direction by use of *R* for rising or *F* for falling; record to the closest tenth foot (x.x ft)
- g) **LAT:** latitude in decimal degree, include as at least 5 decimal places or as many decimals as GPS gives (3X.XXXXX)
- h) **LON:** longitude in decimal degree (08X.XXXXX)
- i) **DEPTH:** water depth in centimeters; (xxx cm)
- j) **SECCHI:** depth of water at which disk disappears in centimeters; (xxx cm)
- k) **TSS:** successful collection of water in the TSS 1 liter bottle indicated with a *Y* or *N*; bottle will be shipped, overnight to St. Pete
- l) **COTURB:** successful collection of water in the 60 ml color bottle indicated with a *Y* or *N*; bottle will be shipped overnight to St. Pete
- m) **UNF NUTS:** successful collection of water in the 60 ml unfiltered nutrients bottle indicated with a *Y* or *N*; nutrient bottle will be shipped overnight to St. Pete
- n) **TURB:** successful collection of water in a 60 ml bottle. You will keep this bottle for measuring turbidity.
- o) **KIT #:** number of bottle set used for water collection
- p) **MARK:** number or name of new waypoint created at the days sampling location
- q) **Li-Cor:** successful collection of PAR data at the site
- r) **SWT:** surface water temperature to the closest hundredth degree Celsius; (xx.xx °C)
- s) **SPC/SAL:** conductivity/ salinity readings taken at the surface to the closest hundredth (xx.xx mS/xx.xx ppt)
- t) **SpH:** surface water pH to the closest hundredth (x.xx)
- u) **SDO%:** surface water dissolved oxygen % to the closest tenth percent (xx.x%)
- v) **BWT:** bottom water temperature in degrees celcius taken to the closest hundredth (xx.xx°C)
- w) **BpH:** bottom water pH to the closest hundredth (x.xx)
- x) **BPC/SAL:** conductivity/ salinity readings taken at the bottom to the closest hundredth (xx.xx mS/xx.xx ppt)
- y) **BDO%:** bottom water dissolved oxygen % to the closest tenth percent (xx.x%)
- z) **HABTXT:** Habitat texture.
 - i) **COSG:** Continuous seagrass
 - ii) **PASG:** Patchy seagrass
 - iii) **BARE:** No Seagrass
- aa) **% Cover:** Estimated cover by seagrass in 10 % increments
- bb) **OWQ:** Optical water quality

Contacts

Role	Name	Phone	Email
Project Manager	Paul Carlson	727.502.4915 (Office) 727.896.8626 (Cell)	Paul.Carlson@myfwc.com
Project Data manager	Laura Yarbrow	727.896.4934 (Office)	Laura.Yarbrow@myfwc.com
Field PI	Michael Poniatowski	727.502.4916 (Office) 727.433.3440 (Cell)	Mike.Poniatowski@myfwc.com
Field Crew	Sheila Scolaro	727.502.4966 (Office)	Sheila.Scolaro@myfwc.com

NFWF 2016

ESTUARY: TAMPA BAY COLLECTOR: John Smith DATE: 01/01/2016 TIME REF: EDT

STATION	TPA01	LAT	30.12345	Ship: TSS	Y	Kit #:	1234
TIME	23:59	LONG	087.12345	Ship: COTURB	Y	MARK:	123
TIDE HT (FT)	+1.6 R	DEPTH (CM)	123	Ship: UNF NUTS	Y	Li-Cor	Y
		SECCHI (CM)	101	Keep: TURB	Y		

SWT	20.12	SPC/SAL	32.12/20.01	SpH	7.00	SDO%	94.2
BWT	20.34	BPC/SAL	32.34/20.23	BpH	7.02	BDO%	95.3
HABTXT	COSG	%COVER	20%				

SEAGRASS PRESENT? YES NO Comments:

BOTTOM TYPE: SAND MUD CLAY HARD

STATION		LAT		Ship: TSS		Kit #:	
TIME		LONG		Ship: COTURB		MARK:	
TIDE HT (FT)		DEPTH (CM)		Ship: UNF NUTS		Li-Cor	
		SECCHI (CM)		Keep: TURB			

SWT		SPC/SAL		SpH		SDO%	
BWT		BPC/SAL		BpH		BDO%	
HABTXT		%COVER					

SEAGRASS PRESENT? YES NO Comments:

BOTTOM TYPE: SAND MUD CLAY HARD

STATION		LAT		Ship: TSS		Kit #:	
TIME		LONG		Ship: COTURB		MARK:	
TIDE HT (FT)		DEPTH (CM)		Ship: UNF NUTS		Li-Cor	
		SECCHI (CM)		Keep: TURB			

SWT		SPC/SAL		SpH		SDO%	
BWT		BPC/SAL		BpH		BDO%	
HABTXT		%COVER					

SEAGRASS PRESENT? YES NO Comments:

BOTTOM TYPE: SAND MUD CLAY HARD

HABTXT: COSG- Continuous; PASG- Patchy; BARE. % COVER BY 10%

TIME REF: EST; EDT; CST; CDT;

NFWF 2016

ESTUARY: _____ **COLLECTOR:** _____ **DATE:** _____ **TIME REF:** _____

STATION		LAT		Ship: TSS	Kit #:
TIME		LONG		Ship: COTURB	MARK:
TIDE HT (FT)		DEPTH (CM)		Ship: UNF NUTS	Li-Cor
		SECCHI (CM)		Keep: TURB	

SWT		SPC/SAL		SpH		SDO%
BWT		BPC/SAL		BpH		BDO%
HABTXT		%COVER				

SEAGRASS PRESENT? YES NO _____ **Comments:** _____
 BOTTOM TYPE: SAND MUD CLAY HARD

STATION		LAT		Ship: TSS	Kit #:
TIME		LONG		Ship: COTURB	MARK:
TIDE HT (FT)		DEPTH (CM)		Ship: UNF NUTS	Li-Cor
		SECCHI (CM)		Keep: TURB	

SWT		SPC/SAL		SpH		SDO%
BWT		BPC/SAL		BpH		BDO%
HABTXT		%COVER				

SEAGRASS PRESENT? YES NO _____ **Comments:** _____
 BOTTOM TYPE: SAND MUD CLAY HARD

STATION		LAT		Ship: TSS	Kit #:
TIME		LONG		Ship: COTURB	MARK:
TIDE HT (FT)		DEPTH (CM)		Ship: UNF NUTS	Li-Cor
		SECCHI (CM)		Keep: TURB	

SWT		SPC/SAL		SpH		SDO%
BWT		BPC/SAL		BpH		BDO%
HABTXT		%COVER				

SEAGRASS PRESENT? YES NO _____ **Comments:** _____
 BOTTOM TYPE: SAND MUD CLAY HARD

HABTXT: COSG- Continuous; PASG- Patchy; BARE. % COVER BY 10%

TIME REF: EST; EDT; CST; CDT;

