

**SEACAR Northwest Meeting Summary and
Outcomes March 21–22, 2017
FDEP Carr Building**



Prepared For

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Acronyms and Abbreviations

Acronym	Definition
AP	Aquatic Preserve
Chl a	Chlorophyll a
DOC	Dissolved Organic Carbon
FCMP	Florida Coastal Management Program
FDACS	Florida Department of Agriculture & Consumer Services
FDEP	Florida Department of Environmental Protection
FCO	Florida Coastal Office
FL	Florida
FPCP	Florida Panhandle Coastal Program
FWC	Florida Fish and Wildlife Conservation Commission
HAB	Harmful Algal Bloom
NERR	National Estuarine Research Reserve
NNC	Numeric Nutrient Criteria
NPS	National Park Service
NW	Northwest
PFLCC	Peninsular Florida Landscape Conservation Cooperative
RESTORE	Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States
SAV	Submerged Aquatic Vegetation
SEACAR	Statewide Ecosystem Assessment of Coastal and Aquatic Resources
TKN	Total Kjeldahl Nitrogen
TSS	Total Suspended Solids
USFWS	U.S. Fish and Wildlife Service
WQ	Water Quality

1 SEACAR Facilitation Overview

SEACAR (Statewide Ecosystem Assessment of Coastal Aquatic Resources) meetings were facilitated by Normandeau Associates, Inc. during the months of March and April 2017. The SEACAR Northwest (NW) Region meetings were held on 21 and 22 March 2017 at the Florida Department of Environmental Protection (FDEP) Carr Building, 3800 Commonwealth Blvd, Tallahassee, FL 32303. On 21 March, the meeting times were 9:00 a.m. to 4:30 p.m. On 22 March, the SEACAR Steering Team and the Normandeau facilitation team met in the morning for a Day 1 debrief and to discuss strategies for following workshops. A list of Day 1 meeting participants is provided in Appendix A.

At the start of both days, the project lead, Cheryl Parrott Clark, provided an overview of the SEACAR pilot study to give the project background. This was followed by presentations by regional Florida Coastal Office (FCO) staff describing resources at each FCO managed area in the region. Finally, Mrs. Clark provided a description of the indicator selection process.

1.1 SEACAR Meeting Goals

1. Resource Assessment Teams will establish ecological indicators, using current knowledge, for habitats in the Florida Coastal Office's (FCO) managed areas (including Aquatic Preserves [APs], National Estuarine Research Reserves [NERR], etc.)
2. Resource Assessment Teams will work cooperatively to provide consensus on indicators and product format
3. An analysis of the statuses and trends of coastal resources will be conducted at a locally relevant scale, to support state and local programs, planning and decision making
4. Relevant statuses and trends will be communicated to local and state decision makers and provide the best available science
5. Data will be integrated into a Decision Support Tool that promotes resource management

1.2 SEACAR Indicator Selection Criteria

1. Show statewide and site specific trends over time
2. Allow comparisons between sites and across the state
3. Illustrate habitat change over time driven by biotic and abiotic factors which define community structure
4. Allow data/results to directly inform and/or be utilized in local and state natural resource management decisions, submerged land planning and/or restoration
5. Allow for site and/or regional specific environments and conditions (while being comparable statewide)

1.3 Statewide Preliminary Indicators

The following preliminary indicators were suggested during webinars prior to the SEACAR workshops. An asterisk denotes an indicator that overlaps multiple regions.

- Dissolved Oxygen
- Turbidity/Clarity *
- Salinity
- Nutrients *

- % Cover *
- % Live
- Acreage
- Species composition
- Algae (Harmful Algal Bloom [HAB], Chlorophyll [Chl] a, etc.)
- Health

2 Day 1 Meeting

The purpose of the Day 1 meeting was to collect Data Team recommendations for priority indicators to be considered for inclusion in the NW Region Habitat index.

The following goals were accomplished during the meeting:

1. Get collaborative agreement on regional indicators
2. Confirm which indicators have already been analyzed
3. Assess data gaps

2.1 Day 1 Collaborative Agreement on Regional Indicators

The following process was followed to reach collaborative agreement on indicators for the NW Region:

1. Data Team members listed their top three indicators for the region
2. Data Team members discussed the list resulting from the previous activity in order to clarify and condense the indicator list
3. Data Team members listed pros and cons of the refined indicators from the previous activity
4. Data Team members discussed pros and cons of the refined indicators so they would be able to make a more informed vote on their top indicators

2.1.1 Data Team Initial List of Top Indicators

The tables below list the indicators provided by the Data Team, organized by index. The first column lists all indicators originally presented by the Data Team, while the second column shows the revised list of indicators after discussion to clarify, condense, or add to the list.

Table 2-1. Data Team Initial List of Top Indicators for Salt Marsh

NW Region <i>Preliminary Indicators</i>	NW Region <i>Revised Indicators</i>
Color/ Dissolved Organic Carbon (DOC)/ Total Kjeldahl Nitrogen (TKN)	Color/DOC/TKN
% Change in Cover	Acreage

Table 2-2. Data Team Initial List of Top Indicators for SAV

NW Region <i>Preliminary Indicators</i>	NW Region <i>Revised Indicators</i>
% Cover	% Cover
% Change Cover	<i>Removed during pro/con discussion</i>

NW Region <i>Preliminary Indicators</i>	NW Region <i>Revised Indicators</i>
Species Composition	Species Composition (seagrass and/or macro algae)

Table 2-3. Data Team Initial List of Top Indicators for Seagrass

NW Region <i>Preliminary Indicators</i>	NW Region <i>Revised Indicators</i>
% Cover	% Cover SAV (seagrass and/or macro algae)
Acreage	Acreage SAV (seagrass and/or macro algae)

Table 2-4. Data Team Initial List of Top Indicators for Oyster

NW Region <i>Preliminary Indicators</i>	NW Region <i>Revised Indicators</i>
% Cover	% Cover
% Live	Density Live
% Change in Cover	Acreage

Table 2-5. Data Team Initial List of Top Indicators not Assigned to an Index

NW Region <i>Preliminary Indicators</i>	NW Region <i>Revised Indicators</i>
Salinity	Salinity
Dissolved Oxygen	Dissolved Oxygen
Clarity (turbidity, Chl a)	Clarity (turbidity, color, TSS, sediment, Chl a, light attenuation, Secchi)
Turbidity/Clarity	
Light attenuation/Turbidity	
Nutrients	Nutrients
Species Composition	Species Composition (potential to add other species including exotic, invasive, harvested)
Algae Chl a	<i>Removed during pro/con discussion</i>

2.1.2 Data Team List of Indicator Pros and Cons for Each Habitat Index

To inform indicator discussions, the Data Team provided pros and cons for the list of revised indicators.

Table 2-6. Data Team Indicator Pros and Cons for NW Region

Pros	Cons
Dissolved Oxygen Pros <ul style="list-style-type: none"> • Easy to measure • Everybody collects it • Important for animals and plants 	Dissolved Oxygen Cons <ul style="list-style-type: none"> • Variable (depends on depth, time of day, location, etc.) • Proper instrument calibration and verification • Need intensive monitoring to detect trends
Salinity Pros <ul style="list-style-type: none"> • Everybody collects it • Easy to measure • Consistent units • Affects many species 	Salinity Cons <ul style="list-style-type: none"> • Need intensive monitoring to detect trends
Clarity (turbidity, color, TSS, sediment, Chl a, light attenuation, Secchi) Pros <ul style="list-style-type: none"> • Easy to measure • Important Water Quality (WQ) parameter for seagrass • Multiple ways to measure 	Clarity (turbidity, color, TSS, sediment, Chl a, light attenuation, Secchi) Cons <ul style="list-style-type: none"> • Specific measurements variable • Not much data for TSS • Light attenuation more difficult to measure • Currently measured many different ways • Difficult concept to explain/inconsistent terminology
Salt marsh color/DOC/TKN Pros <ul style="list-style-type: none"> • Good indicator of either a loss of native habitat or extent 	Salt marsh color/DOC/TKN Cons <ul style="list-style-type: none"> • Time and space specific
Nutrients Pros <ul style="list-style-type: none"> • Lots of different agencies/universities across all regions collecting data • Highly linked to ecological condition 	Nutrients Cons <ul style="list-style-type: none"> • Expensive to process • Need intensive monitoring to detect trends • Not a direct measurement of biological condition
% Cover SAV (seagrass and/or macro algae) Pros <ul style="list-style-type: none"> • Direct measurement of an important resource • Measured by many people • Only measured once a year • Specifically mentioned in statutes as a resource to protect • Can have species specific info (% cover vs acreage) • Capture seagrass scarring 	% Cover SAV (seagrass and/or macro algae) Cons <ul style="list-style-type: none"> • Takes a long time to measure • Restricted to sites that you monitor (% cover vs acreage)
Live Oyster Density Pros <ul style="list-style-type: none"> • Directly measuring important biological community 	Live Oyster Density Cons <ul style="list-style-type: none"> • Difficult to measure

Pros	Cons
Acreage SAV (seagrass and/or macro algae) Pros <ul style="list-style-type: none"> • Can be measured remotely • Gets comprehensive measurement of a region 	Acreage SAV (seagrass and/or macro algae) Cons <ul style="list-style-type: none"> • Not seeing finer scale changes • Expensive (but check new European satellite used at Lake Jackson) • Sensitive to changes in technology
Acreage Marsh Pros <ul style="list-style-type: none"> • See Acreage SAV 	Acreage Marsh Cons <ul style="list-style-type: none"> • See Acreage SAV
Acreage Oyster Pros <ul style="list-style-type: none"> • See Acreage SAV 	Acreage Oyster Cons <ul style="list-style-type: none"> • Difficult to be accurate • See Acreage SAV
Species Composition (potential to add other species including exotic, invasive, harvested) Pros <ul style="list-style-type: none"> • For harvested species, lots of available information • For harvested species, relatable to the public 	Species Composition (potential to add other species including exotic, invasive, harvested) Cons <ul style="list-style-type: none"> • For harvested species, confounded by harvest • For harvested species, potentially contentious issues
Species Composition SAV (seagrass and/or macro algae) Pros <ul style="list-style-type: none"> • Helps understand species distribution • Already collected with % cover • Helps understand patterns of diversity • Helps understand species dominance • Helps understand point in successional process • Can indicate WQ changes 	Species Composition SAV (seagrass and/or macro algae) Cons <ul style="list-style-type: none"> • Doesn't necessarily reflect system health • Labor and time intensive • Doesn't provide larger picture of coverage (overall loss or gain)

2.1.3 Data Team List of Priority Indicators

Following a discussion about indicator pros and cons, members of the Data Team discussed prioritizing the indicators within each aquatic preserve. The Data Team discussed which of the AP's had similar hydrology, watersheds and habitats which could be grouped to identify priority indicators. Managed areas were grouped as follows:

- Yellow River Marsh AP, Rocky Bayou AP
- Fort Pickens AP, St Andrews AP, St Joseph AP
- Alligator Harbor, Apalachicola National Estuarine Research Reserve
- Big Bend Seagrasses AP, St. Martins Marsh AP

Local experts will be contacted to refine the indicators for each group of managed areas.

The Data Team chose the following priority indicators based on two NW Region APs.

Big Bend Seagrasses + St. Martins Marsh AP

- Clarity (turbidity, color, TSS, sediment, Chl a, light attenuation, Secchi)
- Nutrients
- Dissolved Oxygen
- % Cover SAV (seagrass and/or macro algae) + Species Composition SAV (seagrass and/or macro algae)
- Acreage SAV (seagrass and/or macro algae)
- Acreage Marsh

2.2 Data Gaps

The following data gaps were identified during discussions following voting on top indicators.

- Big Bend data gap for hardbottom habitat

3 Day 2 Meeting

The Day 2 meeting was cancelled because only one Partner Team member who had not been at the Day 1 meeting was registered. Instead, the SEACAR Steering Team and the Normandeau facilitation team met in the morning for a Day 1 debrief and to discuss strategies for following workshops. The group discussed plans to present information in such a way that it was clearer what was being asked of the Data and Partner Teams. To further this objective, a list of project end goals would be provided by SEACAR staff.

To help focus discussions and minimize confusion for the remaining workshops, the group determined Data and Partner teams should suggest indicators for each habitat in the region. A printout of the habitat indices with a list of potential indicators determined previously in webinars for each region would be provided at the start of the day. Notes would be included with the printout to clarify and define terminology (e.g. Ambient Water Quality = DO, temperature, salinity, pH).

4 Appendices

Appendix A. Meeting Participants

First Name	Last Name	Email	Organization	Area of Research	Managed Area	Attendance
Ann	Lazar	ann.lazar@dep.state.fl.us	FDEP, FCMP			Day 1
Dan	Tonsmeire	dan@apalachicolariverkeeper.org	Apalachicola Riverkeeper		Apalachicola	Day 1
Derek	Fussell	derek.fussell@myfwc.com	FWC	Invasive plant management	Lake Jackson	Day 1
Drew	Bartlett		FDEP	Deputy Secretary Ecosystem Projects		Day 1
Jenna	Harper	Jennifer.Harper@dep.state.fl.us	Apalachicola NERR	Regional administrator, AP manager	NW region APs, Apalachicola NERR	Day 1
Jill	Fleiger	jillian.fleiger@freshfromflorida.com	FDACS - Division of Aquaculture	Environmental administrator of shellfish classification and monitoring		Day 1
Jonathan	Brucker	Jonathan.Brucker@dep.state.fl.us	Central Panhandle Aquatic Preserves	AP manager, seagrass, WQ,	Central Panhandle APs	Day 1
Joy	Jackson	joy.jackson@dep.state.fl	FDEP	Aquatic Ecology and Quality Assurance, helped develop NNC for coastal and freshwater waters		Day 1
Kathy	Goodin	kathy_goodin@natureserve.org	NatureServe	Director marine program. Principal investigator for NOAA RESTORE grants.		Day 1
Kelly	Irick	kelly_irick@nps.gov	NPS	Chief of science, monitoring WQ and seagrasses	Gulf Islands National Seashore	Day 1
Kevin	Claridge	Kevin.Claridge@dep.state.fl.us	FDEP	Director Florida Coastal Office	statewide	Day 1
Melody	Ray-Culp	melody_ray-culp@fws.gov	USFWS		Living Shoreline Initiative of the FPCP	Day 1
Nia	Wellendorf	nijole.wellendorf@dep.state.fl.us	FDEP	NNC, bioassessment methods (freshwater mostly)		Day 1

SEACAR NW Meeting Summary and Outcomes

First Name	Last Name	Email	Organization	Area of Research	Managed Area	Attendance
Sarah	Friedl	sarah.friedl@myfwc.com	PFLCC/FWC	PFLCC		Day 1
Timothy	Jones	Timothy.W.Jones@dep.state.fl.us	FDEP	AP manager	Big Bend APs, St. Martins Marsh AP	Day 1