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Performance Measures for Florida Bay.

Members of the Florida Bay PMC and selected Scientists met May 21-21, 2002 to define DRAFT Florida Bay performance measures (PM's). PM's were identified for geographic zones within the Bay. The following summarizes the pm for each zone.

1. North-eastern Transitional
2. Eastern Bay
3. Central Bay
4. Western Bay
5. North-central Transitional
6. Southern Bay
7. Outer Bay
8. Southwest Shelf (plum)
9. Back Country
10. Lower Keys Oceanside
11. Middle Keys Oceanside
12. Upper Keys Oceanside
13. Barnes Sound
14. Blackwater and Little Blackwater (Hunt added Tarpon Basin and Little Buttonwood Sound to this area when making the maps)
15. Lakes
16. Flamingo Channel
17. Whitewater Bay

Zone 1

Suite of Performance Measures for SAV in Zone 1

Metric	Performance measure	Units	Targets
SAV	coverage	Area (or % area/suitable area)	No change annually Lower seasonal variability
SAV	density	Braun/Banquet Or blades/M^2	No increase in b/b 1-2 units.
SAV	biomass		No change
SAV	Productivity → Healthy SAV	P/R	
SAV	species richness	Percent change in cover	Greater percent of Rupia and Greater seasonal percent of Chara Thallasia percent decrease

**Weighting factors need to be included.

Suite of Performance Measures for Physical Characteristics in Zone1

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	5-15 for Joe, Long 15-25 Little Mad reduced frequency of rapid change / variance increased lower frequency (seasonal / interannual) change extend wet season by changing slope of salinity curve to a shallower curve both up and down
PC	Light	Extinction coefficient	No change, not a decrease in light penetration
PC	Suspended Sediments	Mg/l (mass/volume)	No change but could tolerate a small increase.
PC	Sediment transport		N/a

Salinity variations are linked to hydroperiods of the marsh

Suite of Performance Measures for Water Quality in Zone 1

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	0-3
WQ	TP	Micromoles (concentrations)	No change
WQ	TN	(concentrations)	Decrease from base
WQ	DIN	(concentrations)	Decrease from base
WQ	Silicate	(concentrations)	nc, small increase ok
WQ	Species composition		?
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

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Base is standard data set.
(Blooms) = above a 2 mg/l in east fl bay and 3 in west

Suite of Performance Measures for HTL in Zone 1

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	decrease from base </=0.6/hr
	Juvenile success	#/area	0
Snook	A	CPU	>0.3
	J	#/area	>0
TZFFC or FBFFC	# fish		Increase from base
	Fish Biomass		Increase from base
	Species comp		Shift to fw species
LOB	Juv. abundance		nc
RSB	Nest Numbers		Nc but increase ok
	Nest Success	Chicks/nest	nc
Pink Shrimp	Harvest		nc
	# per m^2 during Sept-Nov		nc
Crocs	RE – for nests		Needs discussion
	Nest Success (# hatchlings)		Needs Discussion
	Juv. Abundance		Needs Discussion

Zone 2

Suite of Performance Measures for SAV in Zone 2

Metric	Performance measure	Units	Targets
SAV	coverage	area	Greater than or equal to 90% total area coverage. [CHART SAYS NO CHANGE}
SAV	density	Braun/Banquet Or blades/M^2	No increase beyond 1-2 b/b units from present.
SAV	biomass		Limit to 10-20% increase
SAV	Productivity → Healthy SAV	P/R	Mean >1.
SAV	species richness		Greater percent in Haladule. Greater heterogeneity.

**Weighting factors need to be included.

Suite of Performance Measures for PC in Zone 2

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	15-30; reduced higher frequency variance increased lower frequency (seasonal, interannual) change
PC	Light	Extinction coefficient	N/C – no decrease in light penetration
PC	Suspended Sediments	Mg/l (mass/volume)	No change but could tolerate a small increase.
PC	Sediment transport		N/a

Suite of Performance Measures for Water Quality in Zone 2

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	Mg/l	0-2
WQ	TP	Micromoles (concentrations)	No change
WQ	TN	(concentrations)	Decrease from base
WQ	DIN	(concentrations)	Decrease from base

WQ	Silicate	(concentrations)	nc, small increase ok
WQ	Species composition		No increase in cyano
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 2

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	Decrease from base <0.6?
	Juvenile success	#/area	Increase from base
Snook	A	CPUE	Increase from base >0.3
	J	#/area	Increase from base
FBFFC	# fish		Increase from base
	Fish Biomass		Increase from base Assoc. with s/g beds
	Species comp		Shift to benthic from pelagic
LOB	Juv. abundance		nc
RSB	Nest Numbers		≥500
	Nest Success	chicks per nest	≥ 1.5 (mean for >75% of years)
Pink Shrimp	Harvest		nc
	# per m^2		nc
Crocs	RE		Needs discussion

	Nest Success		Needs Discussion
	Juv. Abundance		Needs Discussion

Zone 3

Suite of Performance Measures for SAV in Zone 3

Metric	Performance measure	Units	Targets
SAV	coverage	area	Of suitable bottom, 100% coverage.
SAV	density	Braun/Banquet Or blades/M^2	B/B moderate (2-3).
SAV	biomass		No change, +/- error.
SAV	Productivity → Healthy SAV	P/R	Mean >1.
SAV	species richness		Greater richness with increased percent in Halodule. Greater heterogeneity. (BB of 2-3 is for community)

Suite of Performance Measures for Physical Characteristics in Zone 3

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	25-40; reduced higher frequency variance, increased low frequency (seasonal, interannual) variance. Not 0.
PC	Light	Extinction coefficient	Increase light penetration
PC	Suspended Sediments	Mg/l (mass/volume)	Reduce
PC	Sediment transport		N/a

Suite of Performance Measures for Water Quality in Zone 3

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	0-5
WQ	TP	Micromoles (concentrations)	Decrease from base
WQ	TN	(concentrations)	Decrease
WQ	DIN	(concentrations)	Decrease from base
WQ	Silicate	(concentrations)	increase
WQ	Species composition		Decrease in cyano % of total and shift to diatoms.
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
	Chlorophyll Magnitude		minimize

Suite of Performance Measures for Higher Trophic Levels in Zone 3

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	Increase ≥ 1.0
	Juvenile success	#/area	increase
Snook	A	CPUE	Increase >0.3
	J	#/area	Increase
FBFFC	# fish		increase
	Fish Biomass		increase
	Species comp		Shift to canopy (demersal)

LOB	Juv. abundance		10% increase
RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		nc
	# per m^2		>5
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv. Abundance		Needs Discussion

Zone 4

Suite of Performance Measures for SAV in Zone 4

Metric	Performance measure	Units	Targets
SAV	coverage	area	No change
SAV	density	Braun/ Banquet Or blades/M^2	Thal. Mod to high .
SAV	biomass		No change +/- error.
SAV	Productivity → Healthy SAV	P/R	Mean >1.
SAV	species richness		Greater percent in Halodule. Greater heterogeneity (some Halodule).

Suite of Performance Measures for PC in area 4

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	30-40, increased low frequency (seasonal and interannual) range, variance. Not 0. [Mean will probably decrease freshwater inputs from SRS and TS.]
PC	Light	Extinction coefficient	nc
PC	Suspended Sediments	Mg/l (mass/volume)	nc
PC	Sediment transport		nc

Suite of Performance Measures for Water Quality in Zone 4

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	0-3
WQ	TP	Micromoles (concentrations)	nc
WQ	TN	(concentrations)	nc
WQ	DIN	(concentrations)	nc
WQ	Silicate	(concentrations)	nc
WQ	Species composition		Decrease in cyano % of total. , shift to diatoms
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

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Suite of Performance Measures for HTL in Zone 4

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	Increase ≥ 1.1
	Juvenile success	#/area	increase
Snook	A	CPUE	nc
	J	#/area	increase
FBFFC	# fish		increase
	Fish Biomass		increase
	Species comp		increase
LOB	Juv. abundance		30% increase
RSB	Nest Numbers		≥ 400 nest or number of years ≥ 400
	Nest Success		≥ 1.5 chicks per nest during 75% of years
Pink Shrimp	Harvest		
	# per m^2		>17
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv. Abundance		Needs Discussion

Zone 5

Suite of Performance Measures for SAV in Zone 5

Metric	Performance measure	Units	Targets
SAV	coverage	area	No change annually, decrease (?) or increase (?) seasonal/coverage variability – [PROB DECREASE OF SEASONAL VARIABILTY WITH RESTORATION OF OLIGOHALINE ZONE, AS PER ZONE 1].
SAV	density	Braun/Banquet Or blades/M^2	Maintain mid level BB. No increase in density. [CHART SAYS NO CHANGE]
SAV	biomass		No change
SAV	Productivity → Healthy SAV	P/R	Increase, without target
SAV	species richness	Percent change in cover	Annually, no change

**Weighting factors need to be included.
High seasonal die-offs of seagrasses
Hot
Seasonal variability in freshwater flow therefore salinities
Debate about the seasonal variability of freshwater flows.
Things come and go here because of the high variability of salinities.
Mesohaline component

Suite of Performance Measures for PC in Zone 5

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	10-40 reduced higher frequency increased lower frequency
PC	Light	Extinction coefficient	Correlated to phytoplankton. A little more extinction, less penetration is ok
PC	Suspended Sediments	Mg/l (mass/volume)	nc
PC	Sediment transport		nc

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Suite of Performance Measures for Water Quality in Zone 5

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	0-5
WQ	TP	Micromoles (concentrations)	Decrease from base
WQ	TN	(concentrations)	Decrease from base
WQ	DIN	(concentrations)	Decrease from base
WQ	Silicate	(concentrations)	Increase from base
WQ	Species composition		Decrease in cyano % of total; some shift to diatoms?
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 5

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	>1.1
	Juvenile success	#/area	increase
Snook	A	CPUE	>0.3 increase
	J	#/area	increase
FBFFC	# fish		increase
	Fish Biomass		increase
	Species comp		euryhaline

LOB	Juv. abundance		nc
RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		
	# per m^2		>5
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv. Abundance		Needs Discussion

Zone 6

Suite of Performance Measures for SAV in Zone 6

Metric	Performance measure	Units	Targets
SAV	coverage	area	nc
SAV	density	Braun/Banquet Or blades/M^2	nc
SAV	biomass		Some decrease ok
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	nc

**Weighting factors need to be included.

Suite of Performance Measures for Physical Characteristics in Zone 6

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	25-35; increased lower frequency
PC	Light	Extinction coefficient	Nc, but more extinction, less penetration is ok
PC	Suspended Sediments	Mg/l (mass/volume)	Nc – if Lignumvitae is opened, short term change only increases sed. temporarily
PC	Sediment transport		Nc – if lv is opened, short term change only increases sed. Temporarily (minimize total transport)

Use Peter Swart's data – coral data.

Suite of Performance Measures for Water Quality in Zone 6

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	0-2
WQ	TP	Micromoles (concentrations)	nc
WQ	TN	(concentrations)	decrease
WQ	DIN	(concentrations)	decrease
WQ	Silicate	(concentrations)	nc
WQ	Species (plankton) composition		nc
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 6

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	>1.0

	Juvenile success	#/area	increase
Snook	A	CPUE	>0.3
	J	#/area	increase
FBFFC	# fish		nc
	Fish Biomass		nc
	Species comp		More reef fish
LOB	Juv. abundance		20% increase
RSB	Nest Numbers		≥ 200 to include islands – Barnes, Buchanan, Twin
	Nest Success		≥ 1.5 chicks per nest during 75% of years
Pink Shrimp	Harvest		
	# per m^2		>7
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 7

Suite of Performance Measures for SAV in Zone 7

Metric	Performance measure	Units	Targets
SAV	coverage	area	nc
SAV	density	Braun/Banquet Or blades/M^2	nc

SAV	biomass		nc
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	nc

**Weighting factors need to be included.

Suite of Performance Measures for PC in Zone 7

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	nc
Pc	Light	Extinction coefficient	nc
PC	Suspended Sediments	Mg/l (mass/volume)	nc
PC	Sediment transport		nc

Suite of Performance Measures for Water Quality in Zone 7

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	0-3
WQ	TP	Micromoles (concentrations)	nc – assuming water comes down coast more everglades influenced? Less Gulf therefore nc (or decrease)
WQ	TN	(concentrations)	nc
WQ	DIN	(concentrations)	nc
WQ	Silicate	(concentrations)	nc
WQ	Species (plankton) composition		nc
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize

WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 7

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	nc
	Juvenile success	#/area	nc
Snook	A	CPUE	nc
	J	#/area	nc
FBFFC	# fish		nc
	Fish Biomass		nc
	Species comp		nc
LOB	Juv. abundance		nc
RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		
	# per m^2		nc
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 8

Suite of Performance Measures for SAV in Zone 8

Metric	Performance measure	Units	Targets
SAV	coverage	area	nc
SAV	density	Braun/Banquet Or blades/M^2	nc
SAV	biomass		nc
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	nc

**Weighting factors need to be included.

Suite of Performance Measures for PC in Zone 8

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	Nc – perhaps some lower nearshore shark river slough
PC	Light	Extinction coefficient	nc
PC	Suspended Sediments	Mg/l (mass/volume)	nc
PC	Sediment transport		nc

Suite of Performance Measures for Water Quality in Zone 8

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	0-5
WQ	TP	Micromoles (concentrations)	nc
WQ	TN	(concentrations)	nc
WQ	DIN	(concentrations)	nc

WQ	Silicate	(concentrations)	nc
WQ	Species (plankton) composition		No HABs
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 8

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	nc
	Juvenile success	#/area	nc
Snook	A	CPUE	nc
	J	#/area	nc
FBFFC	# fish		nc
	Fish Biomass		nc
	Species comp		nc
LOB	Juv. abundance		nc
RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		nc
	# per m^2		nc
Crocs	RE		Needs Discussion

	Nest Success		Needs Discussion
	Juv. Abundance		Needs Discussion

Zone 9

Suite of Performance Measures for SAV in Zone 9

Metric	Performance measure	Units	Targets
SAV	coverage	area	No influence
SAV	density	Braun/Banquet Or blades/M^2	No influence
SAV	biomass		No influence
SAV	Productivity → Healthy SAV	P/R	No influence
SAV	species richness	Percent change in cover	No influence

**Weighting factors need to be included.

PC for Zone 9 - nc

WQ for Zone 9 – chl 0-2. nc for rest

Suite of Performance Measures for HTL in Zone 9

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	nc
	Juvenile success	#/area	nc
Snook	A	CPUE	nc
	J	#/area	nc
FBFFC	# fish		nc
	Fish Biomass		nc

	Species comp		nc
LOB	Juv. abundance		nc
RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		
	# per m^2		nc
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 10

Suite of Performance Measures for SAV in Zone 10

Metric	Performance measure	Units	Targets
SAV Basin10	coverage	area	nc
	density	Braun/Banquet Or blades/M^2	nc
	biomass		nc
	Productivity → Healthy SAV	P/R	nc
	species richness	Percent change in cover	nc

**Weighting factors need to be included.

PC for Zone 10 – nc

WQ for Zone 10 – chl 0-2 nearshore, 0-1 offshore – beyond hawk channel.

Suite of Performance Measures for HTL in Zone 10

Metric	Performance measure	Units	Targets

RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		
	# per m^2		nc
Crocs	RE		
	Nest Success		
	Juv Abundance		
Sea Trout	Adult Abundance	CPUE	nc
	Juvenile success	#/area	nc
Snook	A	CPUE	nc
	J	#/area	nc
FBFFC	# fish		nc
	Fish Biomass		nc
	Species comp		nc
LOB	Juv. abundance		nc

Zone 11

Suite of Performance Measures for SAV in Zone 11

Metric	Performance measure	Units	Targets
SAV	coverage	area	NC
SAV	density	Braun/Banquet Or blades/M^2	nc
SAV	biomass		nc
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	nc

**Weighting factors need to be included.

PC for Zone 11 - nc

WQ for Zone 11 – same as Zone10

Suite of Performance Measures for HTL in Zone 11

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	nc
	Juvenile success	#/area	nc
Snook	A	CPUE	nc
	J	#/area	nc
FBFFC	# fish		nc
	Fish Biomass		nc
	Species comp		nc
LOB	Juv. abundance		nc
RSB	Nest Numbers		nc

	Nest Success		nc
Pink Shrimp	Harvest		
	# per m^2		nc
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 12

Suite of Performance Measures for SAV in Zone 12

Metric	Performance measure	Units	Targets
SAV	coverage	area	nc
SAV	density	Braun/Banquet Or blades/M^2	nc
SAV	biomass		nc
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	nc

**Weighting factors need to be included.

Suite of Performance Measures for PC in Zone 12

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	Nc(for coral reef system)/ nc nearshore
PC	Light	Extinction coefficient	nc
PC	Suspended Sediments	Mg/l (mass/volume)	Temp increase. As 6

PC	Sediment transport		No long-term increase in transport and short term min and manageable.

Short term during construction and erosive phases
WQ for Zone 12 – same as Zone 10
Suite of Performance Measures for HTL in Zone 12

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	nc
	Juvenile success	#/area	nc
Snook	A	CPUE	nc
	J	#/area	nc
FBFFC	# fish		nc
	Fish Biomass		nc
	Species comp		nc
LOB	Juv. abundance		nc
RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		
	# per m^2		nc
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 13

Suite of Performance Measures for SAV in Zone 13

Metric	Performance measure	Units	Targets
SAV	coverage	area	No change, lower seasonal variability [DISAGREE – SHOULD BE INCREASE IN SEASONAL VARIABILITY; somewhat lower short term variability – prev derived from C111 discharges]
SAV	density	Braun/Banquet Or blades/M^2	No change, decrease of one unit ok
SAV	biomass		nc
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	Increase biodiversity, greater ruppia and halodule and decrease % of thal.

**Weighting factors need to be included.

Suite of Performance Measures for PC in Zone 13

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	Discussion needed Coordination with RECOVER
PC	Light	Extinction coefficient	"
PC	Suspended Sediments	Mg/l (mass/volume)	"
PC	Sediment transport		"

Suite of Performance Measures for Water Quality in Zone 13

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	Need to look up – as in zone 2
WQ	TP	Micromoles (concentrations)	Further study

WQ	TN	(concentrations)	Further study
WQ	DIN	(concentrations)	Further study
WQ	Silicate	(concentrations)	Further study
WQ	Species (plankton) composition		Further study
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

Zone13 – reduce the incidence of low DO

Suite of Performance Measures for HTL in Zone 13

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	<0.6, < base
	Juvenile success	#/area	increase
Snook	A	CPUE	> 0.3
	J	#/area	increase
FBFFC	# fish		Like 2
	Fish Biomass		Like 2
	Species comp		Shift to Benthic
LOB	Juv. abundance		nc
RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		

	# per m^2		nc
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 14

Suite of Performance Measures for SAV in Zone 14

Metric	Performance measure	Units	Targets
SAV	coverage	area	nc
SAV	density	Braun/Banquet Or blades/M^2	nc
SAV	biomass		nc
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	nc

**Weighting factors need to be included.

Suite of Performance Measures for PC in Zone 14

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	Blckwtr – as in 2 Little blckwtr halfway btwn 1 and 2
PC	Light	Extinction coefficient	nc
PC	Suspended Sediments	Mg/l (mass/volume)	nc
PC	Sediment transport		nc

Suite of Performance Measures for Water Quality in Zone 14

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	as in zone 2
WQ	TP	Micromoles (concentrations)	Further study
WQ	TN	(concentrations)	Further study
WQ	DIN	(concentrations)	Further study
WQ	Silicate	(concentrations)	Further study
WQ	Species (plankton) composition		Further study
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 14

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	Same as 13
	Juvenile success	#/area	Same as 13
Snook	A	CPUE	Same as 13
	J	#/area	Same as 13
FBFFC	# fish		Same as 13
	Fish Biomass		Same as 13
	Species comp		Same as 13
LOB	Juv. abundance		Same as 13

RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		
	# per m^2		nc
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 15

Suite of Performance Measures for SAV in Zone 15

Metric	Performance measure	Units	Targets
SAV	coverage	area	Increase. less inter-annual and seasonal variability. 100% cover (of suitable area)
SAV	density	Braun/Banquet Or blades/M^2	Increase 1 BB unit
SAV	biomass		
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	Less is ok? Greater Chara and Eutricularia

**Weighting factors need to be included.
Left blank – not enough knowledge
Eutricularia issue – Rudnick

Suite of Performance Measures for PC in Zone 15.

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	0-10 w/ increased proportion of time as oligohaline; extension of wet season; more gradual changes; [decreased seasonal and interannual variability]

PC	Light	Extinction coefficient	nc
PC	Suspended Sediments	Mg/l (mass/volume)	nc
PC	Sediment transport		nc

Suite of Performance Measures for Water Quality in Zone 15

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	Needs discussion
WQ	TP	Micromoles (concentrations)	Further study
WQ	TN	(concentrations)	Further study
WQ	DIN	(concentrations)	Further study
WQ	Silicate	(concentrations)	Further study
WQ	Species (plankton) composition		Further study
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 15

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	decrease
	Juvenile success	#/area	none
Snook	A	CPUE	increase
	J	#/area	increase
FBFFC	# fish		unknown

	Fish Biomass		unknown
	Species comp		Shift to fw spp
LOB	Juv. abundance		nc
RSB	Nest Numbers		>0 [with increase at Cuthbert rookery]
	Nest Success		>0 [>1.5 as above for Cuthbert Lake]
Pink Shrimp	Harvest		
	# per m^2		nc
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 16

Suite of Performance Measures for SAV for Zone 16

Metric	Performance measure	Units	Targets
SAV	coverage	area	Nc – no harm
SAV	density	Braun/Banquet Or blades/M^2	nc
SAV	biomass		nc
SAV	Productivity → Healthy SAV	P/R	nc
SAV	species richness	Percent change in cover	nc

**Weighting factors need to be included.

Suite of Performance Measures for PC in Zone 16

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	Nc (but would expect greater seasonal and interannual variability?]
PC	Light	Extinction coefficient	nc
PC	Suspended Sediments	Mg/l (mass/volume)	nc
PC	Sediment transport		nc

Suite of Performance Measures for Water Quality in Zone 16

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	0-5
WQ	TP	Micromoles (concentrations)	decrease
WQ	TN	(concentrations)	nc
WQ	DIN	(concentrations)	nc
WQ	Silicate	(concentrations)	Nc, increase with increased flow from srs is ok
WQ	Species (plankton) composition		No HABs
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize
WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 16

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	nc
	Juvenile success	#/area	nc

Snook	A	CPUE	nc
	J	#/area	nc
FBFFC	# fish		nc
	Fish Biomass		nc
	Species comp		nc
LOB	Juv. abundance		nc
RSB	Nest Numbers		nc
	Nest Success		nc
Pink Shrimp	Harvest		
	# per m^2		>25
Crocs	RE		Needs Discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Zone 17

Suite of Performance Measures for SAV In Zone 17

Metric	Performance measure	Units	Targets
SAV	coverage	area	Needs discussion
SAV	density	Braun/Banquet Or blades/M^2	Needs discussion
SAV	biomass		Needs discussion

SAV	Productivity → Healthy SAV	P/R	Needs discussion
SAV	species richness	Percent change in cover	Needs discussion

**Weighting factors need to be included.
Did not complete, Whitewater outside of study area? Question for PDT

Suite of Performance Measures for physical characteristics for Zone 17

Metric	Performance measure	Units	Targets
PC	Salinity	ppt	Lower salinities – 5-15 (mouth of north river).
PC	Light	Extinction coefficient	nc
PC	Suspended Sediments	Mg/l (mass/volume)	nc
PC	Sediment transport		nc

Suite of Performance Measures for Water Quality in Zone 17

Metric	Performance measure	Units	Targets
WQ	Chlorophyll	µg/l	Needs discussion
WQ	TP	Micromoles (concentrations)	Further study
WQ	TN	(concentrations)	Further study
WQ	DIN	(concentrations)	Further study
WQ	Silicate	(concentrations)	Further study
WQ	Species (plankton) composition		
WQ	Chlorophyll area extent		minimize
WQ	Chlorophyll temporal duration		minimize

WQ	Chlorophyll Magnitude		minimize

Suite of Performance Measures for HTL in Zone 17

Metric	Performance measure	Units	Targets
Sea Trout	Adult Abundance	CPUE	< 1.0
	Juvenile success	#/area	increase
Snook	A	CPUE	>4.0
	J	#/area	increase
FBFFC	# fish		nc
	Fish Biomass		nc
	Species comp		Decrease marine and increase estuarine / euryhaline.
LOB	Juv. abundance		nc
RSB	Nest Numbers		Needs discussion
	Nest Success		Needs discussion
Pink Shrimp	Harvest		
	Juvenile # per m^2		Needs discussion (>15)
Crocs	RE		Needs discussion
	Nest Success		Needs Discussion
	Juv Abundance		Needs Discussion

Other Performance Measures

Contaminants – no increase across the board.

Hard Bottom Community – Hunt

Crocodiles – Miller
Coral Reefs – Keller
Soil Accretion - Rudnick