Appendix F Field Validation Data Summary and Data Sheets

Field Validation Data

The field validation approach involved assessing several categories of functional indicators within each of the Nearshore Assessment Units (NAUs) in June 2008. Within each of the categories (e.g., vegetation, driftwood, etc.), a series of functional measures were scored by two observers. Calculations of the mean scores for each of the functional indicators as well as for the overall NAU were performed at the laboratory.

The first table reflects a summary of the scores derived from the field validation task. The score associated with each of the functional indicators was obtained by calculating the mean of the functional attributes assessed within an indicator. The total NAU score is equal to the sum of each of the functional indicator scores. Refer to the methods section within this report for further clarification.

Following the summary table are the datasheets which were used during the field reconnaissance.

			Bea	ach Sco	ores	1	Ro	cky Be	ach		ı	ı	ı	ı	Pocket	t/Delta	Scores	S	ı	ı	ı	ı			
Geomorphic	NAU	Flats	Driftwood	Veg	Eelgrass	Wrack	Substrate	Organisms	Veg	Flats	Barrier	Veg	Wrack	Driftwood	Marsh	Flood	Shade	ShadeLM	Bare	Pannes	Fresh	Pform	Total NAU	Proportion	Functional
Туре	ID					<u> </u>																	Score	of Total	Rating
Rocky Shore Rocky Beach	178 80						1.7 2.4	2.8 4.0	2.1 4.0														7 10	0.44 0.70	Moderate High
Drowned Channel	211	5.0	0.6		0.0	0.0		4.U 	4.U 	4.4		3.0	0.0	1.8	2.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	30	0.70	Moderate
Pocket Estuary	114	3.7			2.5	4.1					4.3	3.5		3.7	4.3	3.0	3.0	1.0	1.0	1.0	5.0	5.0	45	0.50	Moderate
Pocket Beach	81	3.4	1.0	3.9	3.4	3.0																	15	1.0	High
Delta	18	4.4	3.0	4.2	3.3	1.0																	16	0.64	Moderate - High
Sed. Source/ Transpt Beach	117	0.4	0.8	1.1	0.0	1.6																	4	0.15	Low - Moderate
Sed. Source/ Transpt Beach	155	2.4	1.5	0.5	0.6	2.7																	8	0.31	Moderate
Sed. Source/ Transpt Beach	156	4.0	1.6	1.0	3.0	3.0																	13	0.51	Moderate
Delta Lagoon	148	3.6	2.8	2.8	1.8	2.7																	14	0.55	Moderate
Sed. Source/ Transpt Beach	116	1.3	2.3	3.3	1.3	4.1																	12	0.49	Moderate
Sed. Source/ Transpt Beach	151	5.0	2.5	3.7	2.0	3.3																	16	0.66	High
Sed. Source/ Transpt Beach	149	3.0	4.0	4.9	2.8	2.7																	17	0.70	High
Sed. Source/ Transpt Beach	150	4.1	3.3	4.5	2.2	3.0																	17	0.68	High

Code	Physical Function Indicator	Score	Guidance
1. Flats	A) Percent of NAU that has flats beyond 0 MLLW 0 = no flats observable 1 = <25 % 3 = 25-75 % 5 = >75 %	A =	After walking the length of the NAU, estimate the percent of the length that has flats out beyond the 0 MLLW (based on the tide at the time).
	B) Average width of flats at three locations within NAU 1 = < 50 m 3 = 50-100 m 5 = >100 m	B1 = B2 = B3 = B avg =	to shore) at three locations (near each end and in the middle). Average the three values (1, 3, or
	C) Dominant substrate of flats (below 0 MLLW) at three locations within NAU 1 = gravel, cobble, boulder 3 = mixed coarse (sand, gravel, cobble) 5 = sand	C1 = C2 = C3 = C avg =	At the same three locations as in B, determine the dominant substrate of the flats.). Average the three values (1, 3, or 5) for the final value of C.
	Time:	score 1:	Calculate: A + (B avg + C avg)
	Tide estimate (ft relative to MLLW):	certainty 1:	Provide certainty score for estimates 1 = highly uncertain 3 = moderately certain 5 = certain

Code	Ecological Function Indicator	Score	Guidance
2.			
Driftwood	A) Percent of NAU that has drift logs above 0 MLLW 0 = no LWD observable 1 = <25 %	A =	After walking the length of the NAU, estimate the percent of the length that has LWD present
	3 = 25-75 % 5 = >75 %	B1 =	above 0 MLLW.
		B2 =	At the same three locations as in 2B above, use distance range
	B) Average width of drift log accumulation at three locations within NAU 1 = < 2 m	B3 =	finder or meter tape to estimate the width of LWD accumulation
	3 = 2 - 7 m 5 = > 7 m	B avg =	(perpendicular to shore). Average the three values (1, 3, or 5) for the final value of B.
	C) Composition of drift logs at three locations within NAU 1 = cut logs only 3 = mixed (cut logs, natural logs, root wads) 5 = natural logs	C1 = C2 = C3 =	At the same three locations as in B, determine the composition of the LWD. Average the three values (1, 3, or 5) for the final value of C.
	D) Number of LWD pieces lying perpendicular to shore in NAU =	C avg =	
	1 = 1-5/100 m shoreline $3 = 6-10/100 m shoreline$ $1 = 1-5/100 m shoreline$ $3 = 6-10/100 m shoreline$ $5 = >10/100 m shoreline$	D =	Calculate: A + B avg + C avg +D
	3 = 710/100m shoreme	, score 2.	Provide certainty score for estimates 1 = highly uncertain
	Time:	certainty 2:	3 = moderately certain 5 = certain
	Tide estimate (ft relative to MLLW):		

Code	Ecological Function Indicator	Score	Guidance
3. Veg			
	A) Percent of NAU that has vegetation in the backshore	A =	After walking the length of the
	0 = no vegetation within 75 meters of shoreline		NAU, estimate the percent of the
	1 = <25 %	B1 =	length that has backshore veg
	3 = 25-75 %		above OHW mark.
	5 = >75 %	B2 =	
			At the same three locations as in
		B3 =	2B above, use distance range
	B) Adjacent or separated from the shoreline at three locations within NAU		finder or meter tape to estimate
	1 = separated (>10m between OHW mark and start of vegetation)	B avg =	the distance from OHW to veg
	5 = adjacent (<10m between OHW mark and start of vegetation)		(perpendicular to shore). Average
		C1 =	the three values (1, 3, or 5) for the
			final value of B.
	C) Composition of vegetation at three locations within NAU	C2 =	At the constitute of the property of the prope
	0 = no vegetation within 75 meters of shoreline	62	At the same three locations as in B,
	1 = grass/landscaped 3 = immature trees/shrubs	C3 =	determine the composition of the
	5 = mature trees/strubs 5 = mature trees (may also include shrubs)	C avg =	veg. Average the three values (1, 3, or 5) for the final value of C.
	3 – Mature trees (may also miciade simubs)	C avg	of 3) for the final value of C.
		D1 =	At the same three locations as in B,
		D1	determine the amount that the veg
	D) Estimate distance overhanging the intertidal zone at three locations within NAU	D2 =	hangs over the intertidal zone.
	0 = no overhanging veg		Average the three values (1, 3, or
	1 = < 2m	D3 =	5) for the final value of C.
	3 = 2 - 3m		,
	5 = > 3m	Davg =	Calculate: A + (Bavg + Cavg + Davg)
		score 3:	, 5 5 5,
			Provide certainty score for
	Time:	-	estimates
		certainty 3:	1 = highly uncertain
	Tide estimate (ft relative to MLLW):		3 = moderately certain
			5 = certain

Code	Ecological Function Indicator	Score	Guidance
4.			After walking the length of the
Eelgrass	A) Percent of NAU that has eelgrass in the intertidal zone	A =	NAU, estimate the percent of the
	0 = no eelgrass		length that has eelgrass.
	1 = <25 %	B1 =	
	3 = 25-75 %		At the same three locations as in
	5 = >75 %	B2 =	2B above, use distance range
			finder or meter tape to estimate
		B3 =	the width of the eelgrass meadow
	B) Average width of eelgrass at three locations within NAU		(perpendicular to shore). Average
	1 = < 20 m	B avg =	the three values (1, 3, or 5) for the
	3 = 20- 50 m		final value of B.
	5 = >50 m	C1 =	
			At the same three locations as in B,
		C2 =	determine the distribution of the
			eelgrass within the meadow.
		C3 =	Average the three values (1, 3, or
	C) Patchy or continuous eelgrass at three locations within NAU		5) for the final value of C.
	1 = sparse	C avg =	
	3 = patchy (>5m between patches)		At the same three locations as in
	5 = continuous (<5m between patches)	D1 =	B, determine the composition of
			the eelgrass meadow. Average the
		D2 =	three values (1, 3, or 5) for the
			final value of D.
		D3 =	
	D) Composition of eelgrass at three locations within NAU		Calculate: A + (Bavg + Cavg +
	0 = no eelgrass	Davg =	Davg)
	3 = eelgrass and other macroalgae		
	5 = eelgrass only	score 4	Provide certainty score for
			estimates
	Time:		1 = highly uncertain
		certainty 4:	3 = moderately certain
	Tide estimate (ft relative to MLLW):		5 = certain

Code	Ecological Function Indicator	Score	Guidance
5. Wrack	A) Percent of NAU that has drift wrack above 0 MLLW 0 = no wrack observable 1 = <25 %	A =	After walking the length of the NAU, estimate the percent of the length that has wrack.
	3 = 25-75 % 5 = >75 %	B1 = B2 =	At the same three locations as in 2B above, use meter tape to estimate the width of the wrack
	B) Average width of wrack accumulation at three locations within NAU $1 = < 1 \text{ m}$ $3 = 1-3 \text{ m}$ $5 = > 3 \text{ m}$	B3 = B avg =	(perpendicular to shore). Average the three values (1, 3, or 5) for the final value of B.
	C) Composition of wrack at three locations within NAU 0 = none 1 = ulva 5 = mixed (macroalgae, marsh detritus, small wood)	C1 = C2 = C3 = C avg =	At the same three locations as in B, determine the composition of the wrack. Average the three values (1, 3, or 5) for the final value of C.
	Time: Tide estimate (ft relative to MLLW):	score 3:	Calculate: A + (Bavg + Cavg + Davg) Provide certainty score for estimates 1 = highly uncertain 3 = moderately certain 5 = certain

Code	Physical Function Indicator	Score	Guidance
1. Flats			
	A) Percent of NAU that has flats beyond 0 MLLW 0 = no flats observable 1 = <25 % 3 = 25-75 % 5 = >75 %	A = B1 =	After walking the perimeter of the NAU (pocket estuary), estimate the percent of the length that has flats out beyond the 0 MLLW (based on the tide at the time).
	B) Average width of flats at three locations within pocket estuary as a percentage of total width (from upland to upland0 0 = no flats observable 1 = <25 % 3 = 25-75 % 5 = >75 %	B2 = B3 = B avg =	Use distance range finder to estimate the width (perpendicular to shore) at three locations (near mouth, mid estuary, and upper end). Average the three values (1, 3, or 5) for the final value of B.
	C) Dominant substrate of flats (below 0 MLLW) at three locations within NAU 1 = mixed coarse (sand, gravel, cobble) 3 = sand 5 = mud	C1 = C2 = C3 = C avg =	At the same three locations as in B, determine the dominant substrate of the flats.). Average the three values (1, 3, or 5) for the final value of C.
		score 1:	Calculate: A + (B avg + C avg) Provide certainty score for estimates 1 = highly uncertain 3 = moderately certain 5 = certain

Code	Physical Function Indicator	Score	Guidance
2. Barrier	A) Condition of barrier 1 = highly modified 3 = somewhat modified 5 = natural condition	A =	
	B) Connection of pocket estuary to salt water 0 = no connection 1 = intermittent connection (e.g. tide gate or culvert that is too high) 3 = constricted connection (e.g. through man-made structure such as a culvert or bridge) 5 = natural connection	B =	
	C) Hydrodynamic potential in pocket estuary provided by channel 1 = inundation only during high tide 3 = inundation during high and moderate tides 5 = inundation during most or all tides	C1 =	Calculate: A + (B avg + C avg) Provide certainty score for
		certainty 1:	estimates 1 = highly uncertain 3 = moderately certain 5 = certain

Code	Ecological Function Indicator	Score	Guidance
3. Driftwood			
	A) Percent of NAU that has drift logs above 0 MLLW	A =	After walking the length of the
	0 = no LWD observable		NAU, estimate the percent of the
	1 = <25 %		length that has LWD present
	3 = 25-75 %	B1 =	above 0 MLLW.
	5 = >75 %		
		B2 =	At the same three locations as in
			1B above, use distance range
	B) Average width of drift log accumulation at three locations within NAU	B3 =	finder or meter tape to estimate
	1 = < 2 m or > 20 m		the width of LWD accumulation
	3 = 2 - 7 m	B avg =	(perpendicular to shore).
	5 = > 7 m		Average the three values (1, 3, or
		C1 =	5) for the final value of B.
	C) Composition of drift logs at three locations within NAU	C2 =	At the same three locations as in
	1 = cut logs only		B, determine the composition of
	3 = mixed (cut logs, natural logs, root wads)	C3 =	the LWD. Average the three
	5 = natural logs		values (1, 3, or 5) for the final
		C avg =	value of C.
	D) Number of pieces of large woody debris (LWD) in wetland's tidal channel network	D =	To count, the LWD must have a
	1 = 0, or no channels present		minimum diameter >15 cm and a
	3 = 1-10	E =	length >2 m
	5 = >10		1
		score 3:	Calculate: A + (B avg + C avg +D +
	E) Number of LWD projecting at least 1m above the wetland surface:		E)
	0 = 0		
	1 = 1 - 9		Provide certainty score for
	3 = 10-30	certainty 3:	estimates
	5 = >30		1 = highly uncertain
			3 = moderately certain
			5 = certain

Code	Ecological Function Indicator	Score	Guidance
4. Veg			
	A) Percent of NAU that has vegetation in the backshore	A =	After walking the length of the
	0 = no vegetation within 75 meters of shoreline		NAU, estimate the percent of the
	1 = <25 %	B1 =	length that has backshore veg
	3 = 25-75 %		above OHW mark.
	5 = >75 %	B2 =	
			At the same three locations as in
		B3 =	2B above, use distance range
	B) Adjacent or separated from the shoreline at three locations within NAU		finder or meter tape to estimate
	1 = separated (>10m between OHW mark and start of vegetation)	B avg =	the distance from OHW to veg
	5 = adjacent (<10m between OHW mark and start of vegetation)		(perpendicular to shore). Average
		C1 =	the three values (1, 3, or 5) for the
			final value of B.
	C) Composition of vegetation at three locations within NAU	C2 =	
	0 = no vegetation within 75 meters of shoreline		At the same three locations as in B,
	1 = grass/landscaped	C3 =	determine the composition of the
	3 = immature trees/shrubs		veg. Average the three values (1, 3,
	5 = mature trees (may also include shrubs)	C avg =	or 5) for the final value of C.
		D1 =	
	D) Estimate distance overhanging the intertidal zone at three locations within NAU		At the same three locations as in B,
	0 = no overhanging veg	D2 =	determine the amount that the veg
	1 = < 2m		hangs over the intertidal zone.
	3 = 2 – 3m	D3 =	Average the three values (1, 3, or
	5 = > 3m		5) for the final value of C.
		Davg =	
		score 4:	Calculate: A + (Bavg + Cavg + Davg)
			Provide certainty score for
		 	estimates
		certainty 4:	_
		Certainty 4:	1 = highly uncertain
			3 = moderately certain
			5 = certain

Ecological Function Indicator	Score	Guidance
A) Percent of NAU that has drift wrack above 0 MLLW 0 = no wrack observable	A =	After walking the length of the NAU, estimate the percent of the
	D1 -	length that has wrack.
	B1	At the same three locations as in
	B2 =	1B above, use meter tape to estimate the width of the wrack
B) Average width of wrack accumulation at three locations within NAU $1 = < 1 \text{ m}$	B3 =	(perpendicular to shore). Average the three values (1, 3, or 5) for the
3 = 1-3 m	B avg =	final value of B.
5 = > 3 m		
	C1 =	
0 = none	C2 =	At the same three locations as in B, determine the composition of the
1 = ulva		wrack. Average the three values (1,
5 = mixed (macroalgae, marsh detritus, small wood)	C3 =	3, or 5) for the final value of C.
	C avg =	
	score 5:	Calculate: A + (Bavg + Cavg + Davg)
		Provide certainty score for
		estimates
	certainty 5:	1 = highly uncertain
		3 = moderately certain 5 = certain
	 0 = no wrack observable 1 = <25 % 3 = 25-75 % 5 = >75 % B) Average width of wrack accumulation at three locations within NAU 1 = < 1 m 3 = 1-3 m 5 = > 3 m C) Composition of wrack at three locations within NAU 0 = none 	0 = no wrack observable 1 = <25 % 3 = 25-75 % 5 = >75 % B1 = B2 = B) Average width of wrack accumulation at three locations within NAU 1 = < 1 m 3 = 1-3 m 5 = > 3 m C1 = C) Composition of wrack at three locations within NAU 0 = none 1 = ulva 5 = mixed (macroalgae, marsh detritus, small wood) Cavg = C avg =

Code	Ecological Function	Indicator	ı				Score	Guidance
6. Marsh								
	A) Percent of NAU th		nergent	marsh			A =	After walking the area of the NAU, estimate the percent of
	0 = no mars	sn					D4	the estuary that has marsh.
	1 = <25 %						B1 =	At the came three locations as in 1D above use distance
	3 = 25-75 % 5 = >75 %)					B2 =	At the same three locations as in 1B above use distance range finder to estimate the width (perpendicular to shore)
	3-2/370						DZ	of the marsh relative to the total width (from upland to
							B3 =	upland). Average the three values (1, 3, or 5) for the final
	B) Average width of	marsh at	three lo	cations w	ithin no	rket	D3	value of B.
	estuary as a percent				-		B avg =	value of B.
	0 = no mars			(iana to t	apianao	score 6	
	1 = <25 %							Calculate: A + (Bavg + Cavg + Davg)
	3 = 25-75 %	,)						, , , , , , , , , , , , , , , , , , , ,
	5 = >75 %							Provide certainty score for estimates
							certainty 6:	1 = highly uncertain
								3 = moderately certain
								5 = certain
7.	Imagine the wetland	l under ea	ach tidal	condition	listed b	elow.	0 = 0 - 1	Assume conditions are averaged over the period February-
Tidal							1 = 2-8	June. If the site cannot be visited repeatedly, answer this
Innundatio	What % of the wetla		•	•			3 = 9 -16	based on visual estimation of the topography of the wetland
n	channels) is likely to	be acces	sible to y	oung ana	dromou	s fish?	5 = >15	relative to the tidal amplitude reported from the closest
								monitoring station in the or improved local data where
	Select one number f						Score 7:	available.
	use their sum with the box.	ne scale c	on the rig	int to gen	erate a s	core for		
	the box.	0%	1-	10-	50-	>90%		
	during:	(none	10%	50%	90%	79070	certainty 7:	
	during.)	1070	3070	3070		certainty 7.	
	Monthly low tide	0	4	5	6	7		
	Daily low tide	0	3	4	5	6		
	Daily high tide	0	2	3	4	5		
	Monthly high	0	1	2	3	4		
	tide							

Code	Ecological Function Indicator		Score	Guidance	
8. Shade	Percent of the entire wetland's vegetated area that is shaded by trees or topography: 1 = <1 % 3 = 1-10 % 5 = >10 %	Score 8:	To count, it must be shaded for 4+ hours during an average cloudless day. Include parts of the <i>internal channe</i> l network that are inundated most days and are shaded by deep incision, logs, or undercut banks. <i>Internal channels</i> included both tributary channels (flowing from uplands) and blind channels (flooding with the incoming tide).		
9. ShadeLM	[skip if no low marsh is present]. Percent of just the low marsh that is shaded by trees or topography. 1 = <1 % 3 =1-10 % 5 =>10 %	Score 9:	see above. "Low marsh" is defined as areas flooded by the tide during the majority of days during most months of the year. Low marsh is not limited just to areas that flood every day.		
10. Bare	Area of pannes, shallow pools, mudflats, and other bare areas wider than >2 m and located within the wetland: $0 = 0$ $1 = 4-100 \text{ m}^2$ $3 = 100-2500 \text{ m}^2$ $5 = > 2500$	Score 10:	Pannes are shallow mostly-bare depressions in the marsh surface and aren't currently a part of tidal channels. Assess condition as at low tide.		
11. Pannes	Area just of pannes and shallow isolated pools (not mudflats) Use same scale as above.		Isolated = lacking o	a surface connection to other waters de	

Code	Ecological Function Indicator	Score	Guidance
12.	Types of freshwater sources that feed the wetland internally	Sum is:	Perennial tributaries flow year-round most years.
Fresh		0 = 0 - 1	Intermittent tributaries flow seasonally and have
	Select the maximum score in <u>each</u> group and then sum the two	1 = 2 - 3	recognizable channels extending uphill at least twice the
	maxima:	3 = 4 - 6	width of the tidal marsh. Non-tidal wetlands are typically
		5 = 7 - 8	dominated by alder, willow, cattail, skunk cabbage, slough
	Group A: Flowing into the wetland:		sedge, small-fruited bulrush, and water parsley (some of
	a) perennial fresh tributary 4	Score 12:	these occur to a lesser degree in tidal wetlands). Adjoining
	b) intermittent fresh tributary or stormwater pipe 2		means present within 10m.
	c) neither 0		
	Group B: Adjoining on the uphill side:	certainty 12:	
	a) large* non-tidal freshwater wetland, pond, or 4		
	spring		
	b) small non-tidal wetland, seep, or <i>hydric</i> soil patch 3		
	c) other land cover, and tidal wetland is not an 1		
	island		
	d) tidal wetland occupies nearly all of an island 0		
	* wider than the tidal wetland (width measured perpendicular to slope)		
13.	Number of easily-recognizable vegetation structures present	0 = 0-2	"Nurse logs" are large logs or stumps present on the marsh
Pform	within the wetland. Check all that predominate over at least 100	1 = 3	surface which, because of the elevated substrate they
	sq.ft:	3 = 4 - 5	provide, protect germinating plants on top of the log from
	large robust grasslike plants (e.g., bulrush, cattail)	5 = 6	potentially lethal long-duration flooding and high salinity
	other large native grasslike plants (mostly >8 inches long, e.g.,	Score 13:	potentially retiral long danation modeling and mg. retirally
	Deschampsia, Hordeum, Juncus)	3001C 13.	
	fleshy, succulent plants (e.g., pickleweed)		
	other non-woody plants (e.g., saltmarsh aster, other forbs)		
	nurse logs supporting plants taller than 1 ft	certainty 13:	
	submersed aquatics (e.g., wigeongrass or eelgrass) in internal	Certainty 15.	
	channels or pools or externally within 50 ft.		
	chamics of pools of externally within 50 ft.		
]			

Code	Physical Function Indicator	Score	Guidance
14. Flats			
	A) Percent of NAU that has flats beyond 0 MLLW		After walking the length of the
Seaward	0 = no flats observable		NAU, estimate the percent of the
of the	1 = <25 %	A =	length that has flats out beyond
Berm	3 = 25-75 %		the 0 MLLW (based on the tide at
20	5 = >75 %		the time).
		B1 =	
	B) Average width of flats at three locations within NAU	B2 =	Use distance range finder to
	1 = < 50 m		estimate the width (perpendicular
	3 = 50-100 m	B3 =	to shore) at three locations (near
	5 = >100 m		each end and in the middle).
		B avg =	Average the three values (1, 3, or
			5) for the final value of B.
	C) Dominant substrate of flats (below 0 MLLW) at three locations within NAU		
	1 = gravel, cobble, boulder		
	3 = mixed coarse (sand, gravel, cobble)	C1 =	At the same three locations as in
	5 = sand		B, determine the dominant
		C2 =	substrate of the flats.). Average
			the three values (1, 3, or 5) for the
		C3 =	final value of C.
	Times	6.51.5	
	Time:	C avg =	
	Tide estimate (ft relative to MLLW):	score 1:	Calculate: A + (B avg + C avg)
]
			Provide certainty score for
		certainty	estimates
		1:	1 = highly uncertain
			3 = moderately certain
			」 5 = certain

Code	Ecological Function Indicator	Score	Guidance
15. LWD			
	A) Percent of NAU that has drift logs above 0 MLLW	A =	After walking the length of the
Seaward	0 = no LWD observable		NAU, estimate the percent of the
of the	1 = <25 %		length that has LWD present
Berm	3 = 25-75 %	B1 =	above 0 MLLW.
	5 = >75 %		
		B2 =	At the same three locations as in
			2B above, use distance range
	B) Average width of drift log accumulation at three locations within NAU	B3 =	finder or meter tape to estimate
	1 = < 2 m		the width of LWD accumulation
	3 = 2 - 7 m	B avg =	(perpendicular to shore). Average
	5 = > 7 m		the three values (1, 3, or 5) for the
			final value of B.
		C1 =	
	C) Composition of drift logs at three locations within NAU		
	1 = cut logs only	C2 =	
	3 = mixed (cut logs, natural logs, root wads)		At the same three locations as in
	5 = natural logs	C3 =	B, determine the composition of
			the LWD. Average the three
	D) Nivershow of LM/D misses heigh manner disvious to show in NALL	C avg =	values (1, 3, or 5) for the final
	D) Number of LWD pieces lying perpendicular to shore in NAU =		value of C.
	1 = ?/100m shoreline	D =	Calculation and scoring to be
	3 = ?/100m shoreline	5	determined later
	length of NAU 5 = ?/100m shoreline	score 2:	determined later
	5 1/20011 of the contract of t		Calculate: A + (B avg + C avg +D)
			(2 2.8 2 2.8 2 7
			Provide certainty score for
	Time:	certainty 2:	estimates
			1 = highly uncertain
	Tide estimate (ft relative to MLLW):		3 = moderately certain
	· · · · · · · · · · · · · · · · · · ·		5 = certain

Code	Ecological Function Indicator	Score	Guidance
16. Veg			
	A) Percent of NAU that has vegetation in the backshore	A =	After walking the length of the
	0 = no vegetation within 75 meters of shoreline		NAU, estimate the percent of the
Seaward	1 = <25 %	B1 =	length that has backshore veg
of the	3 = 25-75 %		above OHW mark.
Berm	5 = >75 %	B2 =	
20			At the same three locations as in
		B3 =	2B above, use distance range
	B) Adjacent or separated from the shoreline at three locations within NAU		finder or meter tape to estimate
	1 = separated (>10m between OHW mark and start of vegetation)	B avg =	the distance from OHW to veg
	5 = adjacent (<10m between OHW mark and start of vegetation)		(perpendicular to shore). Average
		C1 =	the three values (1, 3, or 5) for the
			final value of B.
	C) Composition of vegetation at three locations within NAU	C2 =	
	0 = no vegetation within 75 meters of shoreline		At the same three locations as in
	1 = grass/landscaped	C3 =	B, determine the composition of
	3 = immature trees/shrubs		the veg. Average the three values
	5 = mature trees (may also include shrubs)	C avg =	(1, 3, or 5) for the final value of C.
		D1 =	At the same three locations as in
	D) Estimate distance overhanging the intertidal zone at three locations within NAU		B, determine the amount that the
	0 = no overhanging veg	D2 =	veg hangs over the intertidal zone.
	1 = < 2m		Average the three values (1, 3, or
	3 = 2 – 3m	D3 =	5) for the final value of C.
	5 = > 3m		
		Davg =	Calculate: A + (Bavg + Cavg +
		score 3:	Davg)
	Time:		Provide certainty score for
			estimates
	Tide estimate (ft relative to MLLW):	certainty 3:	1 = highly uncertain
			3 = moderately certain
			5 = certain

Code	Ecological Function Indicator	Score	Guidance
17.			
Eelgrass	A) Percent of NAU that has eelgrass in the intertidal zone	A =	After walking the length of the
	0 = no eelgrass		NAU, estimate the percent of the
Seaward	1 = <25 %	B1 =	length that has eegrass.
of the	3 = 25-75 %		
Berm	5 = >75 %	B2 =	At the same three locations as in
			2B above, use distance range
		B3 =	finder or meter tape to estimate
	B) Average width of eelgrass at three locations within NAU		the width of the eelgrass meadow
	1 = < 20 m	B avg =	(perpendicular to shore). Average
	3 = 20- 50 m		the three values (1, 3, or 5) for the
	5 = >50 m	C1 =	final value of B.
		C2 =	At the same three locations as in
	C) Patchy or continuous eelgrass at three locations within NAU		B, determine the distribution of
	1 = sparse	C3 =	the eelgrass within the meadow.
	3 = patchy (>5m between patches)	_	Average the three values (1, 3, or
	5 = continuous (<5m between patches)	C avg =	5) for the final value of C.
		D4	A
	D) Composition of coloress at three locations within NALL	D1 =	At the same three locations as in
	D) Composition of eelgrass at three locations within NAU 0 = no eelgrass	D2 -	B, determine the composition of the eelgrass meadow. Average the
	3 = eelgrass and other macroalgae	D2 =	three values (1, 3, or 5) for the
	5 = eelgrass only	D3 =	final value of D.
	5 – eeigrass only	D3	illial value of D.
		Davg =	Calculate: A + (Bavg + Cavg +
		score 4	Davg)
		30010 4	24481
	Time:		Provide certainty score for
			estimates
	Tide estimate (ft relative to MLLW):	certainty 4:	1 = highly uncertain
			3 = moderately certain
			5 = certain

Code	Ecological Function Indicator	Score	Guidance
18. Wrack			
	A) Percent of NAU that has drift wrack above 0 MLLW	A =	After walking the length of the
	0 = no wrack observable		NAU, estimate the percent of the
Seaward	1 = <25 %		length that has wrack.
of the	3 = 25-75 %	B1 =	
Berm	5 = >75 %		At the same three locations as in
		B2 =	2B above, use meter tape to
			estimate the width of the wrack
	B) Average width of wrack accumulation at three locations within NAU	B3 =	(perpendicular to shore). Average
	1 = < 1 m		the three values (1, 3, or 5) for the
	3 = 1-3 m	B avg =	final value of B.
	5 = > 3 m		
		C1 =	
	C) Composition of wrack at three locations within NAU		At the same three locations as in
	0 = none	C2 =	B, determine the composition of
	1 = ulva		the wrack. Average the three
	5 = mixed (macroalgae, marsh detritus, small wood)	C3 =	values (1, 3, or 5) for the final
			value of C.
		C avg =	
	Time:	score 3:	1
			Calculate: A + (Bavg + Cavg +
	Tide estimate (ft relative to MLLW):		Davg)
	,		3,
		certainty 3:	Provide certainty score for
			estimates
			1 = highly uncertain
			3 = moderately certain
			5 = certain