

Appendix A. Baywide Summary Tables for the Narragansett Bay Estuary.

Table 1-A. Changes in estuarine emergent wetlands in the Narragansett Bay Estuary: 1950s to 1990s. (Note: Acreage totals reflect acreage affected by each cause so there is double counting of some lost acreage; totals are greater than the actual total loss for these wetlands.)

Table 2-A. Changes in estuarine scrub-shrub wetlands in the Narragansett Bay Estuary: 1950s to 1990s. (Note: Acreage totals reflect acreage affected by each cause so there is double counting of some lost acreage; totals are greater than the actual total loss for these wetlands.)

Table 3-A. Changes in estuarine unconsolidated shores (beaches and tidal flats) in the Narragansett Bay Estuary: 1950s to 1990s. (Note: Acreage totals reflect acreage affected by each cause so there is double counting of some lost acreage; totals are greater than the actual total loss for these wetlands.)

Table 4-A. Changes in vegetated coastal wetlands in the Narragansett Bay Estuary: 1950s to 1990s. (Changes arranged by unique vegetated wetland types; no double counting.)

Table 5-A. Changes in nonvegetated coastal wetlands in the Narragansett Bay Estuary: 1950s to 1990s. (Changes arranged by unique types; no double counting.)

Note: "Coastal processes" includes erosion and accretion related to wave and current action and to sea level changes.

Table 1-A. Changes in estuarine emergent wetlands in the Narragansett Bay Estuary: 1950s to 1990s. (Note: Acreage totals reflect acreage affected by each cause so there is double counting of some lost acreage; totals are greater than the actual total loss for these wetlands.)

<i>Type of Change</i>	<i>Cause of Change</i>	<i>Number of sites</i>	<i>Acres</i>
Loss to Estuarine Water (E1UB*)			
	Boat Traffic	7	5.46
	Coastal processes	29	24.69
	Tidal restriction	10	15.93
	Unknown	4	4.80
Total		50	50.88
Loss to Estuarine Nonvegetated Wetland (E2US*)			
	Coastal processes	31	32.68
	Unknown	7	5.59
Total		38	38.27
Loss to Estuarine Vegetated Streambed (E2SB*)			
	Coastal processes	1	0.54
Total		1	0.54
Loss to Estuarine Vegetated Wetland (E2SS*)			
	<i>Iva frutescens</i> succession	31	47.82
	Succession following ditching	11	25.89
	Tidal restriction	1	0.80
	Unknown	1	4.29
Total		44	78.80
Loss to Palustrine Wetland (P_*)			
	Coastal processes	1	1.09
	<i>Iva frutescens</i> succession	1	1.88
	<i>Phragmites australis</i> invasion	2	6.31
	Succession	6	10.24
	Succession following ditching	15	46.04
	Tidal restriction	18	39.82
	Tidal restriction w/ <i>P. australis</i> invasion	1	1.23
	Unknown	6	4.47
Total		50	111.08
Loss to Upland			
	Agriculture (cropland)	1	3.46
	Agriculture (orchards, nurseries, vineyards, ornamental horticulture)	1	0.47
	Agriculture (pasture and hayfields)	1	0.73
	Barren Land (mixed barren land)	2	4.02
	Barren Land (sand areas other than beaches)	3	7.35

	Barren Land (strip mines, quarries and gravel pits)	1	0.41
	Commercial and Services (commercial and institutional structures)	4	3.34
	Commercial and Services (marinas)	4	12.55
	Commercial and Services (paved surfaces)	4	3.38
	Commercial and Services (recreational structures)	1	3.05
	Commercial and Services (unpaved surfaces)	3	2.47
	Commercial and Services (wharves, piers & shipyards)	1	1.16
	Forest (deciduous)	3	3.31
	Forest (mixed)	4	5.11
	Industrial & Commercial Complexes	1	2.15
	Rangeland (herbaceous cover)	4	14.96
	Rangeland (mixed)	3	9.85
	Rangeland (shrub and brush cover)	17	42.71
	Residential (lawns)	7	13.21
	Residential (single family)	7	22.64
	Transportation, Communications and Utilities	3	25.20
	Unknown	2	0.83
	Urban (golf courses)	5	5.86
	Urban (landfills)	1	1.61
Total		83	189.82
Grand Total Loss (all losses combined)			469.39
Gain from Estuarine Water (E1UB*)			
	Coastal processes	47	34.99
	Excavation re-vegetated	2	1.27
	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	2	1.76
	<i>Phragmites australis</i> invasion	2	0.82
	Succession	1	0.41
	Succession following ditching	5	2.19
	Tidal restriction	3	1.47
	Tidal restriction w/ <i>P. australis</i> invasion	4	6.48
	Unknown	3	3.23
Total		69	52.63

Gain from Estuarine Nonvegetated Wetland (E2US*)

	Coastal processes	24	32.49
	<i>P. australis</i> & <i>Typha angustifolia</i> invasion	1	0.83
	<i>Phragmites australis</i> invasion	2	1.61
	Succession	2	2.40
	Succession following ditching	3	5.30
	Tidal restriction	1	42.03
	Unknown	4	2.46
Total		37	87.12

Gain from Estuarine Vegetated Wetland (E2SS*)

	Coastal processes	1	0.26
	<i>P. australis</i> & <i>Typha angustifolia</i> invasion	1	3.31
	<i>Phragmites australis</i> invasion	6	15.07
	Succession following ditching	5	11.94
	Tidal restriction	1	0.29
	Unknown	3	2.53
Total		17	33.40

Gain from Palustrine Wetland (P_*)

	Excavation	1	1.06
	Impoundment	1	0.96
	<i>Phragmites australis</i> invasion	1	0.96
	Succession following ditching	2	2.69
	Tidal restriction w/ <i>P. australis</i> invasion	2	3.12
Total		7	8.80

Gain from Upland

	Coastal processes	7	7.83
	<i>Phragmites australis</i> invasion	3	1.50
	Succession following ditching	2	1.17
	Tidal restriction	1	1.00
	Tidal restriction w/ <i>P. australis</i> invasion	1	0.34
	Unknown	3	4.56
Total		17	16.40

Changes in Vegetated Type

	Coastal processes	1	0.14
	<i>Iva frutescens</i> succession	1	1.04
	<i>P. australis</i> & <i>Typha angustifolia</i> invasion	17	35.7
	<i>Phragmites australis</i> invasion	57	82.18
	Succession following ditching	28	54.61
	Tidal restriction	8	25.39
	Tidal restriction w/ <i>P. australis</i> invasion	27	47.51
	Unknown	28	33.99
Total		167	280.56

Table 2-A. Changes in estuarine scrub-shrub wetlands in the Narragansett Bay Estuary: 1950s to 1990s. (Note: Acreage totals reflect acreage affected by each cause so there is double counting of some lost acreage; totals are greater than the actual total loss for these wetlands.)

<i>Type of Change</i>	<i>Cause of Change</i>	<i>Number of sites</i>	<i>Acres</i>
Loss to Estuarine Emergent Wetland (E2EM*)			
	Succession following ditching	5	11.94
	<i>Phragmites australis</i> invasion	6	15.07
	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	1	3.31
	Unknown	3	2.53
	Tidal restriction	1	0.29
Total		16	33.14
Loss to Upland			
	Agriculture (cropland)	1	0.55
	Commercial and Services (commercial and institutional structures)	1	0.80
	Commercial and Services (paved surfaces)	1	0.87
	Commercial and Services (recreational structures)	1	0.33
	Forest (mixed)	1	1.63
	Industrial & Commercial Complexes	1	0.86
	Rangeland (shrub and brush cover)	1	0.38
	Residential (single family)	1	0.54
Total		8	5.97
Gain from Estuarine Nonvegetated Wetland (E2US*)			
	Coastal processes	1	0.77
Total		1	0.77
Gain from Estuarine Vegetated Wetland (E2EM*)			
	Succession following ditching	11	25.89
	<i>Iva frutescens</i> succession	31	47.82
	Tidal restriction	1	0.80
	Unknown	1	4.29
Total		44	78.80

Table 3-A. Changes in estuarine unconsolidated shores (beaches and tidal flats) in the Narragansett Bay Estuary: 1950s to 1990s. (Note: Acreage totals reflect acreage affected by each cause so there is double counting of some lost acreage; totals are greater than the actual total loss for these wetlands.)

Type of Change	Cause of Change	Number of sites	Acres
Loss to Estuarine Water (E1UB*)	Coastal processes	50	248.63
	Unknown	2	1.46
	Total	52	250.09
Loss to Estuarine Emergent Vegetated Wetland (E2EM*)	Coastal processes	18	19.08
	Succession following ditching	1	3.28
	<i>Phragmites australis</i> invasion	2	1.61
	Succession	3	44.42
	Tidal restriction	1	42.03
	Unknown	3	1.86
Total	28	112.27	
Loss to Estuarine Scrub-Shrub Vegetated Wetland (E2SS*)	Coastal processes	1	0.77
	Total	1	0.77
Loss to Palustrine Wetland (P_*)	Succession	3	9.44
	Tidal restriction	2	3.10
	Tidal restriction w/ <i>P. australis</i> invasion	2	8.01
	Unknown	1	0.97
	Total	8	21.52
Loss to Upland	Agriculture (other)	1	7.92
	Barren Land (mixed barren land)	2	2.71
	Barren Land (sand areas other than beaches)	3	11.88
	Commercial and Services (marinas)	4	4.04
	Commercial and Services (paved surfaces)	2	0.75
	Forest (mixed)	2	1.00
	Industrial	1	1.19
	Rangeland (mixed)	5	24.17

	Rangeland (shrub and brush cover)	4	7.78
	Residential (single family)	7	2.71
	Transportation, Communications and Utilities	3	6.73
	Urban (golf courses)	5	34.40
Total		39	105.28
Gain from Estuarine Water (E1UB*)			
	Coastal processes	90	125.60
	Tidal restriction	8	5.64
	Unknown	9	9.27
Total		107	140.51
Gain from Estuarine Emergent Vegetated Wetland (E2EM*)			
	Coastal processes	31	32.68
	Unknown	5	3.88
Total		36	36.56
Gain from Estuarine Reef or Rocky Shore (E2R*)			
	Coastal processes	3	1.24
	Jetty/groin removal	1	0.26
Total		4	1.49
Gain from Upland			
	Coastal processes	18	27.15
	Jetty/groin removal	1	0.52
	Unknown	5	6.29
Total		24	33.96
Changes in Nonvegetated Type			
	Coastal processes	38	35.37
	Unknown	3	13.16
Total		41	48.53

Table 4-A. Changes in vegetated coastal wetlands in the Narragansett Bay Estuary: 1950s to 1990s.

<i>Type of Change</i>	<i>1950s Type</i>	<i>1990s Type</i>	<i>Cause of Change</i>	<i>Number of Sites</i>	<i>Acres</i>
Loss of Vegetated Coastal Wetland	E2EM1/US2N	E1UBL	Coastal processes	1	2.07
	Subtotal loss			1	2.07
	E2EM1N	DUNE	Coastal processes	1	1.35
	E2EM1N	E1UBL	Boat Traffic	4	2.91
	E2EM1N	E1UBL	Coastal processes	8	8.43
	E2EM1N	E1UBL	Unknown	1	3.62
	E2EM1N	E2US2P	Coastal processes	4	3.02
	E2EM1N	E2US2P	Unknown	1	0.26
	E2EM1N	E2US3M	Coastal processes	2	2.86
	E2EM1N	E2US3N	Unknown	1	0.37
	E2EM1N	UPLAND	Residential (single family)	1	0.45
	E2EM1N	UPLAND	Residential (lawns)	1	0.91
	E2EM1N	UPLAND	Commercial and Services (marinas)	4	2.12
	E2EM1N	UPLAND	Forest (mixed)	1	0.58
	Subtotal loss			29	26.87
E2EM1Nh	E1UBL6h	Tidal restriction	5	4.42	
E2EM1Nh	E1UBLh	Tidal restriction	2	2.84	
Subtotal loss			7	7.26	
E2EM1P	DUNE	Coastal processes	6	3.86	
E2EM1P	E1UBL	Boat traffic	3	2.56	
E2EM1P	E1UBL	Coastal processes	14	11.45	
E2EM1P	E1UBL	Unknown	3	1.18	

E2EM1P	E2SB3N	Coastal processes	1	0.54
E2EM1P	E2US2/1N	Coastal processes	1	1.31
E2EM1P	E2US2N	Coastal processes	4	6.04
E2EM1P	E2US2Ns	Coastal processes	1	2.47
E2EM1P	E2US2P	Coastal processes	4	2.97
E2EM1P	E2US2P	Unknown	3	3.24
E2EM1P	E2US3M	Coastal processes	10	10.47
E2EM1P	PAB4Vh	Tidal restriction	1	0.32
E2EM1P	PEM1E	Tidal restriction	1	0.24
E2EM1P	PEM1Rh	Tidal restriction	1	0.63
E2EM1P	PFO1C	Succession	1	0.53
E2EM1P	PSS1/EM1R	Succession	1	3.83
E2EM1P	PSS1R	Coastal processes	1	1.09
E2EM1P	PSS1R	Tidal restriction	1	1.04
E2EM1P	PSS1R	Succession	2	3.81
E2EM1P	PSS1Rd	Succession following ditching	1	3.41
E2EM1P	UPLAND	Agriculture (cropland)	2	3.46
E2EM1P	UPLAND	Agriculture (pasture and hayfields)	2	0.73
E2EM1P	UPLAND	Barren Land (mixed barren land)	2	2.80
E2EM1P	UPLAND	Barren Land (sand areas other than beaches)	5	5.65
E2EM1P	UPLAND	Barren Land (strip mines, quarries and gravel pits)	1	0.41
E2EM1P	UPLAND	Commercial and Services (commercial and institutional structures)	2	1.46
E2EM1P	UPLAND	Commercial and Services (marinas)	10	7.53
E2EM1P	UPLAND	Commercial and Services (paved surfaces)	2	1.77
E2EM1P	UPLAND	Commercial and Services (recreational structures)	2	3.05
E2EM1P	UPLAND	Commercial and Services (unpaved surfaces)	3	1.32
E2EM1P	UPLAND	Forest (deciduous)	1	1.01
E2EM1P	UPLAND	Forest (mixed)	2	0.73
E2EM1P	UPLAND	Rangeland (herbaceous cover)	4	6.88
E2EM1P	UPLAND	Rangeland (mixed)	8	8.53
E2EM1P	UPLAND	Rangeland (shrub and brush cover)	19	16.32
E2EM1P	UPLAND	Residential (lawns, includes non-residential lawns)	10	9.76
E2EM1P	UPLAND	Residential (single family)	18	15.36
E2EM1P	UPLAND	Transportation, Communications and Utilities	11	22.40
E2EM1P	UPLAND	Unknown	1	0.52
E2EM1P	UPLAND	Urban (golf courses)	4	4.64
E2EM1P	UPLAND	Urban (landfills)	1	1.61

Subtotal loss			170	176.89
E2EM1P6	E1UBL	Coastal processes	1	0.34
E2EM1P6	E2US4M	Unknown	1	1.41
E2EM1P6	PEM5R	<i>Phragmites australis</i> invasion	1	5.42
E2EM1P6	PSS1R	Unknown	1	0.48
E2EM1P6	PUBH	Tidal restriction	1	0.31
E2EM1P6	UPLAND	Forest (deciduous)	1	1.04
E2EM1P6	UPLAND	Forest (mixed)	2	3.80
E2EM1P6	UPLAND	Rangeland (shrub and brush cover)	2	2.41
E2EM1P6	UPLAND	Unknown	1	0.30
E2EM1P6	UPLAND	Urban (golf courses)	2	0.88
Subtotal loss			13	16.39
E2EM1P6d	PFO1R	Succession following ditching	1	0.29
E2EM1P6d	PSS1R	Succession following ditching	2	1.32
E2EM1P6d	PUBVh	Tidal restriction	1	0.39
E2EM1P6d	UPLAND	Rangeland (shrub and brush cover)	1	0.71
E2EM1P6d	UPLAND	Residential (lawns,includes non-residential lawns)	1	0.47
Subtotal loss			6	3.17
E2EM1P6dh	PEM1F	Succession following ditching & Tidal restriction	1	0.31
E2EM1P6dh	PEM1Rh	Succession following ditching & Tidal restriction	1	6.99
E2EM1P6dh	PFO1C	Succession following ditching & Tidal restriction	1	1.97
E2EM1P6dh	PSS1Eh	Succession following ditching & Tidal restriction	1	6.93
E2EM1P6dh	UPLAND	Commercial and Services (commercial and institutional structures)	1	0.54
E2EM1P6dh	UPLAND	Commercial and Services (paved surfaces)	1	0.26
Subtotal loss			6	17.00
E2EM1P6h	PFO1C	Tidal restriction	1	1.30
E2EM1P6h	PFO1R	Tidal restriction	1	1.19
E2EM1P6h	PSS1R	Tidal restriction	1	1.07
E2EM1P6h	UPLAND	Commercial and Services (commercial and institutional structures)	1	1.35
E2EM1P6h	UPLAND	Commercial and Services (paved surfaces)	2	1.35
E2EM1P6h	UPLAND	Residential (single family)	1	1.80
Subtotal loss			7	8.04

E2EM1Pd	E1UBL	Coastal processes	5	2.37
E2EM1Pd	E1UBLh	Tidal restriction	1	3.16
E2EM1Pd	E2US2P	Coastal processes	4	2.23
E2EM1Pd	PEM1Rh	Succession following ditching & Tidal restriction	1	4.25
E2EM1Pd	PEM5/SS1R	Tidal restriction w/ P. australis invasion & Succession following ditching	1	1.23
E2EM1Pd	PFO1R	Succession following ditching	1	1.96
E2EM1Pd	PFO1R	Succession following ditching & Iva frutescens succession	1	1.88
E2EM1Pd	PSS1/EM5R	Succession following ditching & Phragmites australis invasion	1	0.89
E2EM1Pd	PSS1R	Succession following ditching	2	1.49
E2EM1Pd	PSS1R	Unknown	1	0.47
E2EM1Pd	PSS1Rd	Succession following ditching	1	2.74
E2EM1Pd	PUBVh	Succession following ditching & Tidal restriction	2	10.33
E2EM1Pd	UPLAND	Agriculture (orchards, nurseries, vineyards, ornamental horticulture)	1	0.47
E2EM1Pd	UPLAND	Barren Land (sand areas other than Beaches)	2	1.03
E2EM1Pd	UPLAND	Commercial and Services (marinas)	1	1.46
E2EM1Pd	UPLAND	Commercial and Services (unpaved surfaces)	1	1.15
E2EM1Pd	UPLAND	Industrial & Commercial Complexes	1	2.15
E2EM1Pd	UPLAND	Rangeland (herbaceous cover)	1	0.31
E2EM1Pd	UPLAND	Rangeland (shrub and brush cover)	5	8.30
E2EM1Pd	UPLAND	Residential (lawns, includes non-residential lawns)	1	0.41
E2EM1Pd	UPLAND	Residential (single family)	5	4.46
E2EM1Pd	UPLAND	Rangeland (shrub and brush cover) & Succession following ditching	1	1.91
E2EM1Pd	UPLAND	Transportation, Communications and Utilities	2	2.80
E2EM1Pd	UPLAND	Urban (golf courses)	1	0.32
Subtotal loss			43	57.76
E2EM1Ph	E1UBLh	Tidal restriction	2	5.51
E2EM1Ph	UPLAND	Commercial and Services (wharves, piers & shipyards)	1	1.16
E2EM1Ph	UPLAND	Forest (deciduous)	1	1.26
E2EM1Ph	UPLAND	Rangeland (shrub and brush cover)	2	1.74
Subtotal loss			6	9.67
E2EM1Phs	PEM1Rh	Tidal restriction & Succession	1	1.66
E2EM1Phs	PFO1R	Tidal restriction & Succession	1	0.41
E2EM1Phs	UPLAND	Rangeland (mixed), Tidal restriction & Succession	1	1.32
Subtotal loss			3	3.39

E2EM1Ps	E2US2P	Coastal processes	1	1.31
E2EM1Ps	UPLAND	Barren Land (mixed barren land)	1	1.22
E2EM1Ps	UPLAND	Barren Land (sand areas other than Beaches)	1	0.67
E2EM1Ps	UPLAND	Commercial and Services (marinas)	1	1.44
E2EM1Ps	UPLAND	Rangeland (herbaceous cover)	1	7.77
E2EM1Ps	UPLAND	Rangeland (shrub and brush cover)	3	8.87
Subtotal loss			8	21.27
E2EM5P	PSS1R	Unknown	1	1.92
E2EM5P	PUBHh	Tidal restriction	1	0.43
E2EM5P	UPLAND	Rangeland (shrub and brush cover)	2	1.71
E2EM5P	UPLAND	Residential (lawns,includes non-residential lawns)	2	1.65
Subtotal loss			5	3.79
E2EM5P6h	UPLAND	Rangeland (shrub and brush cover)	1	0.72
E2EM5P6h	UPLAND	Residential (single family)	1	0.57
Subtotal loss			2	1.29
E2SS1P	UPLAND	Commercial and Services (commercial and institutional structures)	1	0.80
E2SS1P	UPLAND	Commercial and Services (paved surfaces)	1	0.87
E2SS1P	UPLAND	Commercial and Services (recreational structures)	1	0.33
E2SS1P	UPLAND	Rangeland (shrub and brush cover)	1	0.38
E2SS1P	UPLAND	Residential (single family)	1	0.54
Subtotal loss			5	2.92
E2SS1Pd	UPLAND	Agriculture (cropland)	1	0.55
E2SS1Pd	UPLAND	Forest (mixed)	1	1.63
E2SS1Pd	UPLAND	Industrial & Commercial Complexes	1	0.86
Subtotal loss			3	3.04
TOTAL LOSS			314	361
OF VEGETATED				
COASTAL				
WETLAND				

**Gain in
Vegetated
Coastal
Wetland**

E1UBL6h	E2EM1/5P6h	Unknown	1	0.56
E2US4M6	E2EM1/5P6h	<i>P. australis</i> & <i>Typha angustifolia</i> invasion	1	0.83
PALUSTRINE FARMED	E2EM1/5P6h	Tidal restriction w/ <i>P. australis</i> invasion & Impoundment	1	0.44
U - Forest	E2EM1/5P6h	Succession following ditching & Impoundment	1	0.34
Subtotal gain			4	2.17
E1UBL	E2EM1N	Coastal processes	22	12.85
E2US2P	E2EM1N	Coastal processes	4	1.68
E2US2P	E2EM1N	Unknown	1	0.48
E2US2Ps	E2EM1N	Coastal processes	1	1.35
U - Rangeland	E2EM1N	Coastal processes	1	1.11
U - Forest	E2EM1N	Unknown	1	0.30
Subtotal gain			30	17.76
E1UBL	E2EM1P	Coastal processes	18	19.02
E1UBL	E2EM1P	Unknown	1	0.26
E1UBLx	E2EM1P	Excavation re-vegetated	2	1.27
E2US2M	E2EM1P	Coastal processes	2	0.55
E2US2N	E2EM1P	Coastal processes	1	3.93
E2US2P	E2EM1P	Coastal processes	3	2.54
E2US2Ps	E2EM1P	Coastal processes	1	1.86
E2US4M	E2EM1P	Coastal processes	5	12.06
E2US4Md	E2EM1P	Coastal processes & Succession following ditching	1	1.36
PUBHx	E2EM1P	Excavation, unknown use	1	1.06
U - Agriculture	E2EM1P	Coastal processes	1	3.77
U - Barren Land	E2EM1P	Unknown	1	3.21
U - Rangeland	E2EM1P	Coastal processes	1	0.44
Subtotal gain			38	51.32
E1UBL6	E2EM1P6	Coastal processes	2	0.94
E2US3M6	E2EM1P6	Coastal processes	1	0.26

E2US3M6	E2EM1P6	Unknown	1	0.66
U - Rangeland	E2EM1P6	Unknown	1	1.05
E1UBLh	E2EM1P6h	Tidal restriction	2	1.06
Subtotal gain			5	2.91
E1UBL	E2EM1Pd	Coastal processes & Succession following ditching	5	2.19
E2US2P	E2EM1Pd	Coastal processes & Succession following ditching	2	0.66
E2US2Ps	E2EM1Pd	Succession & Coastal processes	1	1.87
E2US3Md	E2EM1Pd	Succession following ditching & Coastal processes	1	3.28
E2US4Mx	E2EM1Pd	Unknown	1	0.61
U - Barren Land	E2EM1Pd	Succession following ditching	1	0.83
Subtotal gain			11	9.43
E1UBLh	E2EM1Ph	Succession	1	0.41
E1UBLh	E2EM1Ph	Tidal restriction	1	0.40
E1UBLh	E2EM1Ph	Unknown	1	2.42
U - Rangeland	E2EM1Ph	Tidal restriction & Coastal processes	1	1.00
Subtotal gain			4	4.23
E1UBL6	E2EM5/1P6	<i>P. australis and Typha angustifolia invasion</i>	2	1.76
Subtotal gain			2	1.76
E1UBL	E2EM5P	<i>Phragmites australis invasion</i>	2	0.82
E2US2N	E2EM5P	Coastal processes & Phragmites australis invasion	1	1.08
E2US2Ps	E2EM5P	Unknown	1	0.72
U - Commercial and Services	E2EM5P	Coastal processes & Phragmites australis invasion	1	0.37
U - Rangeland	E2EM5P	Coastal processes & Phragmites australis invasion	1	0.79
Subtotal gain			6	3.79
DUNE	E2EM5P6	Coastal processes & Phragmites australis invasion	1	0.33
E2US2N6hs	E2EM5P6	Tidal restriction & Succession	1	42.03
E2US2Ps	E2EM5P6	Succession & Phragmites australis invasion	1	0.53
Subtotal gain			3	42.88
E1UBL6h	E2EM5P6h	Tidal restriction w/ <i>P. australis</i> invasion	3	5.81
Palustrine farmed	E2EM5Pdh	Succession following ditching & Tidal restriction w/ <i>P. australis</i> invasion	2	2.68

Subtotal gain			5	8.49
E1UBL6h	E2EM5Ph	Tidal restriction w/ <i>P. australis</i> invasion	1	0.66
PFO1R	E2EM5Ph	Impoundment & <i>Phragmites australis</i> invasion	1	0.96
Subtotal gain			2	1.62
E2US2P	E2SS1P	Coastal processes	1	0.77
Subtotal gain			1	0.77
TOTAL GAIN OF COASTAL VEGETATED WETLAND			111	147.11

Change in Coastal Vegetated Type

E2EM1/5P6	E2EM5/1P6	<i>Phragmites australis</i> invasion	1	5.28
E2EM1/5P6	E2EM5/1P6h	Unknown	1	1.21
E2EM1/5P6h	E2EM5P6h	Tidal restriction w/ <i>P. australis</i> invasion	1	0.81
E2EM1/5Pd	E2SS1Pd	Succession following ditching & <i>Iva frutescens</i> succession	1	5.11
E2EM1/5Pdh	E2EM5Pdh	Succession following ditching & Tidal restriction w/ <i>P. australis</i> invasion	1	4.25
Subtotal change in type			5	16.66
E2EM1N	E2EM1P	Unknown	10	15.72
E2EM1N	E2EM1Pd	Succession following ditching	3	3.34
E2EM1N	E2EM5P	<i>Phragmites australis</i> invasion	1	0.50
E2EM1N	E2SS1P	<i>Iva frutescens</i> succession	2	0.91
E2EM1N6	E2EM1/5P6h	Tidal restriction w/ <i>P. australis</i> invasion	1	1.53
E2EM1N6	E2EM5/1P6h	Tidal restriction w/ <i>P. australis</i> invasion	1	0.97
E2EM1Nd	E2EM1Pd	Succession following ditching	1	1.33
E2EM1Nh	E2EM1P6h	Tidal restriction	1	0.49
E2EM1Nh	E2EM1Ph	Tidal restriction	1	0.59
Subtotal change in type			21	25.38

E2EM1P	E2EM1/SS1P	<i>Iva frutescens</i> succession	1	1.03
E2EM1P	E2EM1N	Unknown	6	1.54
E2EM1P	E2EM1Pd	Succession following ditching	1	1.04
E2EM1P	E2EM1Ph	Tidal restriction	1	0.23
E2EM1P	E2EM5/1P	<i>Phragmites australis</i> invasion	1	1.35
E2EM1P	E2EM5/1Pd	Succession following ditching & <i>Phragmites australis</i> invasion	1	0.71
E2EM1P	E2EM5P	<i>Phragmites australis</i> invasion	24	22.55
E2EM1P	E2EM5P	Unknown	1	0.89
E2EM1P	E2EM5P6	<i>Phragmites australis</i> invasion	1	3.19
E2EM1P	E2EM5P6d	Succession following ditching & <i>Phragmites australis</i> invasion	1	1.82
E2EM1P	E2EM5P6h	Tidal restriction w/ <i>P. australis</i> invasion	1	0.47
E2EM1P	E2EM5P6h	Unknown	1	0.39
E2EM1P	E2EM5Ph	Tidal restriction w/ <i>P. australis</i> invasion	1	0.57
E2EM1P	E2SS1P	<i>Iva frutescens</i> succession	14	13.54
Subtotal change in type			55	49.34
E2EM1P6	E2EM1/5P6	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	1	1.17
E2EM1P6	E2EM1/5P6h	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	6	18.29
E2EM1P6	E2EM5/1P6	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	1	4.26
E2EM1P6	E2EM5/1P6h	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	2	8.56
E2EM1P6	E2EM5P6	<i>Phragmites australis</i> invasion	3	2.20
E2EM1P6	E2EM5P6	Unknown	1	0.99
E2EM1P6	E2EM5P6h	Tidal restriction w/ <i>P. australis</i> invasion	2	0.81
E2EM1P6	E2EM5Pd	Succession following ditching & <i>Phragmites australis</i> invasion	1	1.36
E2EM1P6d	E2EM1/5P6h	Succession following ditching & Tidal restriction w/ <i>P. australis</i> invasion	1	12.08
E2EM1P6d	E2EM1P6	Succession following ditching	2	1.71
E2EM1P6d	E2EM5P6d	Succession following ditching & <i>Phragmites australis</i> invasion	1	1.32
E2EM1P6h	E2EM5P6h	Tidal restriction w/ <i>P. australis</i> invasion	2	1.04
Subtotal change in type			23	53.77
E2EM1Pd	E2EM1/5P6h	Tidal restriction w/ <i>P. australis</i> invasion	2	5.22
E2EM1Pd	E2EM1P	Succession following ditching	1	3.13
E2EM1Pd	E2EM1P6h	Tidal restriction	1	4.62
E2EM1Pd	E2EM1Ph	Tidal restriction	1	2.57

E2EM1Pd	E2EM5/1P6	<i>Phragmites australis invasion</i>	2	8.05
E2EM1Pd	E2EM5/1P6d	<i>Phragmites australis invasion</i>	1	4.39
E2EM1Pd	E2EM5P	Succession following ditching & <i>Phragmites australis</i> invasion	7	12.99
E2EM1Pd	E2EM5P	Unknown	1	0.56
E2EM1Pd	E2EM5P6	Unknown	1	4.10
E2EM1Pd	E2EM5P6d	<i>Phragmites australis invasion</i>	2	1.75
E2EM1Pd	E2EM5P6h	Succession following ditching & Tidal restriction w/ <i>P. australis</i> invasion	1	0.26
E2EM1Pd	E2EM5Pd	<i>Phragmites australis invasion</i>	9	9.31
E2EM1Pd	E2EM5Pd	Unknown	2	2.57
E2EM1Pd	E2EM5Pdh	Tidal restriction w/ <i>P. australis</i> invasion	5	12.80
E2EM1Pd	E2EM5Ph	Succession following ditching & Tidal restriction w/ <i>P. australis</i> invasion	2	1.39
E2EM1Pd	E2SS1P	Succession following ditching & <i>Iva frutescens</i> succession	9	16.34
E2EM1Pd	E2SS1P	Unknown	1	4.28
E2EM1Pd	E2SS1Pd	<i>Iva frutescens</i> succession	3	6.65
E2EM1Pd	E2SS1Ph	Tidal restriction & <i>Iva frutescens</i> succession	1	0.80
E2EM1Pdh	E2EM1Ph	Succession following ditching	1	2.76
E2EM1Pdh	E2EM5Ph	Succession following ditching	1	0.78
E2EM1Pdh	E2EM5Ph	Succession following ditching & Tidal restriction w/ <i>P. australis</i> invasion	1	0.62
Subtotal change in type			55	105.93
E2EM1Ph	E2EM1P6	Tidal restriction	1	0.76
E2EM1Ph	E2EM1P6	Unknown	1	0.36
E2EM1Ph	E2EM5P6h	Tidal restriction w/ <i>P. australis</i> invasion	1	0.67
E2EM1Ph	E2EM5Ph	Tidal restriction w/ <i>P. australis</i> invasion	2	1.25
E2EM1Ph	E2EM5Ph	Unknown	1	0.78
E2EM1Ps	E2EM1P6h	Tidal restriction	1	14.27
E2EM1Ps	E2EM1Pd	Succession following ditching	1	3.62
E2EM1Ps	E2EM5P	<i>Phragmites australis invasion</i>	1	5.25
E2EM1Ps	E2EM5P6	Unknown	1	3.80
E2EM1Ps	E2SS1Pd	Succession following ditching & <i>Iva frutescens</i> succession	1	4.39
Subtotal change in type			11	35.15
E2EM5/1P6	E2EM1/5P6h	Tidal restriction w/ <i>P. australis</i> invasion	1	2.40
Subtotal change in type			1	2.40

E2EM5P	E2EM1N	Coastal processes	1	0.14
E2EM5P	E2EM5P6h	Tidal restriction w/ <i>P. australis</i> invasion	1	0.27
Subtotal change in type			2	0.42
E2EM5P6	E2EM1/5P6	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	5	2.00
E2EM5P6	E2EM1/5P6h	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	2	1.36
E2EM5P6	E2EM1/5P6h	Tidal restriction	1	1.80
E2EM5P6	E2EM1/5P6h	Unknown	1	1.01
Subtotal change in type			9	6.16
E2SS1P	E2EM1P	Unknown	2	2.28
E2SS1P	E2EM1Pdh	Succession following ditching & Tidal restriction	1	0.29
E2SS1P	E2EM5/1P	<i>P. australis</i> and <i>Typha angustifolia</i> invasion	1	3.30
E2SS1P	E2EM5P	<i>Phragmites australis</i> invasion	1	5.32
E2SS1P	E2EM5P6	<i>Phragmites australis</i> invasion	2	5.33
Subtotal change in type			7	16.52
E2SS1Pd	E2EM1Pd	Succession following ditching	1	7.23
E2SS1Pd	E2EM5P	Succession following ditching & <i>Phragmites australis</i> invasion	2	1.62
E2SS1Pd	E2EM5P6	Succession following ditching & <i>Phragmites australis</i> invasion	1	2.80
E2SS1Ph	E2EM1P6	Unknown	1	0.26
Subtotal change in type			5	11.90
TOTAL			194	323.64
CHANGE IN VEGETATED COASTAL WETLAND TYPE				

**No Change in
Vegetated
Coastal
Wetland**

E2EM1/5P	E2EM1/5P	1	1.63
E2EM1/5P6	E2EM1/5P6	1	0.50
E2EM1/5P6h	E2EM1/5P6h	9	12.02
E2EM1/5Pdh	E2EM1/5Pdh	1	0.69
Subtotal no change		12	14.84
E2EM1/SS1P	E2EM1/SS1P	2	2.63
E2EM1/SS1Pdh	E2EM1/SS1Pdh	1	3.23
Subtotal no change		3	5.86
E2EM1/US1N	E2EM1/US1N	2	2.37
E2EM1/US2P	E2EM1/US2P	1	0.27
E2EM1/US3N	E2EM1/US3N	3	3.43
Subtotal no change		6	6.06
E2EM1N	E2EM1N	344	245.73
E2EM1N6	E2EM1N6	2	0.36
E2EM1N6h	E2EM1N6h	1	0.45
E2EM1Nd	E2EM1Nd	1	0.67
E2EM1Nh	E2EM1Nh	8	6.22
Subtotal no change		356	253.42
E2EM1P	E2EM1P	329	945.03
E2EM1P6	E2EM1P6	64	117.91
E2EM1P6d	E2EM1P6d	3	9.03
E2EM1P6dh	E2EM1P6dh	1	3.10
E2EM1P6h	E2EM1P6h	9	16.36
E2EM1Pd	E2EM1Pd	85	1286.90

E2EM1Pdh	E2EM1Pdh	7	91.18
E2EM1Ph	E2EM1Ph	16	25.81
Subtotal no change		514	2495.32
E2EM5/1P	E2EM5/1P	3	6.97
E2EM5/1P6	E2EM5/1P6	5	19.35
E2EM5/SS1P	E2EM5/SS1P	1	3.27
Subtotal no change		9	29.59
E2EM5P	E2EM5P	62	105.74
E2EM5P5	E2EM5P6	16	30.46
E2EM5P6d	E2EM5P6d	1	0.66
E2EM5P6dh	E2EM5P6dh	3	2.47
E2EM5P6h	E2EM5P6h	15	27.62
E2EM5Pd	E2EM5Pd	4	9.12
E2EM5Ph	E2EM5Ph	2	8.47
Subtotal no change		103	184.55
E2SS1/EM1P	E2SS1/EM1P	1	0.65
E2SS1P	E2SS1P	77	89.53
E2SS1Pd	E2SS1Pd	5	17.76
E2SS1Pdh	E2SS1Pdh	1	1.59
E2SS1Ph	E2SS1Ph	1	0.34
Subtotal no change		85	109.87
TOTAL NO CHANGE IN VEGETATED COASTAL WETLAND		1088	3099.50

Table 5-A. Changes in nonvegetated coastal wetlands in the Narragansett Bay Estuary: 1950s to 1990s.

<i>Type of Change</i>	<i>1950s Type</i>	<i>1990s Type</i>	<i>Cause of Change</i>	<i>Number of Sites</i>	<i>Acres</i>
Loss of Nonvegetated Coastal Wetland					
	E2RF2N	E1UBL	Coastal processes	3	1.94
	Subtotal loss			3	1.94
	E2US2/EM1P	UPLAND	Residential (single family)	2	0.49
	Subtotal loss			2	0.49
	E2US2M	E1UBL	Coastal processes	4	62.33
	E2US2M	E2EM1P	Coastal processes	2	0.55
	E2US2Ms	E1UBL	Coastal processes	2	34.21
	Subtotal loss			8	97.10
	E2US2N	E1UBL	Coastal processes	13	42.45
	E2US2N	E1UBL	Unknown	1	0.58
	E2US2N	E2EM1P	Coastal processes	1	3.93
	E2US2N	E2EM5P	Coastal processes & Phragmites australis invasion	1	1.08
	E2US2N	UPLAND	Commercial and Services (paved surfaces)	1	0.49
	E2US2N	UPLAND	Residential (single family)	1	0.26
	Subtotal loss			18	48.79
	E2US2N6h	PUBHh	Unknown	1	0.97
	E2US2N6hs	E2EM5P6	Tidal restriction & Succession	1	42.03
	E2US2N6hs	UPLAND	Agriculture (pasture and hayfields)	1	7.92
	E2US2N6hs	UPLAND	Rangeland (shrub and brush cover)	1	3.42
	E2US2N6hs	UPLAND	Urban (golf courses)	4	27.77
	E2US2Ns	E1UBL	Unknown	1	0.88
	Subtotal loss			9	82.98

E2US2P	DUNE	Coastal processes	2	0.84
E2US2P	E1UBL	Coastal processes	19	16.87
E2US2P	E2EM1N	Coastal processes	4	1.68
E2US2P	E2EM1N	Unknown	1	0.48
E2US2P	E2EM1P	Coastal processes	3	2.54
E2US2P	E2EM1Pd	Coastal processes & Succession following ditching	2	0.66
E2US2P	E2SS1P	Coastal processes	1	0.77
E2US2P	PEM1Rh	Tidal restriction	1	1.68
E2US2P	UPLAND	Barren Land (mixed barren land)	2	2.71
E2US2P	UPLAND	Barren Land (sand areas other than Beaches)	1	1.29
E2US2P	UPLAND	Commercial and Services (marinas)	3	2.78
E2US2P	UPLAND	Rangeland (shrub and brush cover)	1	0.78
E2US2P	UPLAND	Residential (single family)	1	0.36
Subtotal loss			41	33.42
E2US2P6hs	PEM1R	Succession & Tidal restriction	1	1.42
E2US2P6hs	UPLAND	Rangeland (shrub and brush cover)	1	2.07
Subtotal loss			2	3.49
E2US2Ps	E1UBL	Coastal processes	4	9.81
E2US2Ps	E2EM1N	Coastal processes	1	1.35
E2US2Ps	E2EM1P	Coastal processes	1	1.86
E2US2Ps	E2EM1Pd	Coastal processes & Succession	1	1.86
E2US2Ps	E2EM5P	Unknown	1	0.72
E2US2Ps	E2EM5P6	<i>Phragmites australis</i> invasion	1	0.53
E2US2Ps	PEM5/SS1Rh	Succession & Tidal restriction w/ <i>P. australis</i> invasion	1	1.39
E2US2Ps	PEM5Rh	Succession & Tidal restriction w/ <i>P. australis</i> invasion	1	6.62
E2US2Ps	UPLAND	Barren Land (sand areas other than Beaches)	2	10.59
E2US2Ps	UPLAND	Commercial and Services (paved surfaces)	1	0.26
E2US2Ps	UPLAND	Forest (mixed)	2	1.00
E2US2Ps	UPLAND	Industrial	1	1.19
E2US2Ps	UPLAND	Rangeland (mixed)	5	24.17
E2US2Ps	UPLAND	Residential (single family)	3	1.59
E2US2Ps	UPLAND	Transportation, Communications and Utilities	3	6.73
E2US2Ps	UPLAND	Urban (golf courses)	1	6.64
E2US2Ps	UPLAND	Vegetation change, other	1	1.51

Subtotal loss			30	77.81
E2US3M	E1UBL	Coastal processes	8	82.87
E2US3M	UPLAND	Commercial and Services (marinas)	1	1.25
E2US3M6	E2EM1P6	Coastal processes	1	0.26
E2US3M6	E2EM1P6	Unknown	1	0.66
E2US3Md	E2EM1Pd	Succession following ditching & Coastal processes	1	3.28
Subtotal loss			12	88.32
E2US4M	E2EM1P	Coastal processes	5	12.06
E2US4M6	E2EM1/5P6h	<i>P. australis and Typha angustifolia invasion</i>	1	0.83
E2US4Md	E2EM1P	Coastal processes & Succession following ditching	1	1.35
E2US4Ms	E1UBL	Coastal processes	1	0.26
E2US4Ms	PEM1R	Succession & Coastal processes	1	4.13
E2US4Mx	E2EM1Pd	Unknown	1	0.60
Subtotal loss			10	19.24
E2US4N	UPLAND	Barren Land (sand areas other than Beaches)	1	1.29
Subtotal loss			1	1.29
TOTAL LOSS OF NONVEGETATED COASTAL WETLAND			136	454.86

***Gain of Nonvegetated
Coastal Wetland***

E1UBL	E2RF2N	Oyster colonization	2	1.81
Subtotal gain			2	1.81
E1UBL	E2RS2Pr	Jetty/groin construction	2	0.52
Subtotal gain			2	0.52
DUNE	E2SB2N	Coastal processes	1	0.46
Subtotal gain			1	0.46
E2EM1P	E2SB3N	Coastal processes	1	0.54
Subtotal gain			1	0.54

E1UBL	E2US1N	Coastal processes	2	13.49
Subtotal gain			2	13.49
E1UBL	E2US1P	Coastal processes	2	4.19
E1UBL	E2US1P	Unknown	1	0.37
Subtotal gain			3	4.55
E2EM1P	E2US2/1N	Coastal processes	1	1.31
Subtotal gain			1	1.31
DUNE	E2US2M	Coastal processes	1	1.03
E1UBL	E2US2M	Coastal processes	8	15.79
E1UBL	E2US2M	Unknown	1	0.94
U - Commercial and Services	E2US2M		1	3.35
Subtotal gain			11	21.11
E1UBL	E2US2N	Coastal processes	22	17.49
E1UBL	E2US2N	Unknown	1	1.12
E2EM1P	E2US2N	Coastal processes	4	6.04
E2EM1P	E2US2Ns	Spoil deposition & Coastal processes	1	2.46
U - Agriculture	E2US2N	Coastal processes	1	0.72
U - Agriculture	E2US2Ns	Coastal processes & Spoil deposition	3	11.84
U - Barren Land	E2US2N	Coastal processes	1	3.42
U - Barren Land	E2US2Ns	Unknown	1	0.43
U - Commercial and Services	E2US2N	Coastal processes	1	0.45
U - Residential	E2US2N	Unknown	1	0.47
Subtotal gain			36	44.43
DUNE	E2US2P	Coastal processes	1	3.03
DUNE	E2US2P	Unknown	2	2.03
E1UBL	E2US2P	Coastal processes	30	27.43
E1UBL	E2US2P	Unknown	3	3.28
E2EM1N	E2US2P	Coastal processes	4	3.02
E2EM1N	E2US2P	Unknown	1	0.26

E2EM1P	E2US2P	Coastal processes	4	2.97
E2EM1P	E2US2P	Unknown	2	2.14
E2EM1P	E2US2P	<i>Phragmites australis</i> invasion	1	1.10
E2EM1Pd	E2US2P	Coastal processes	4	2.23
E2EM1Ps	E2US2P	Spoil deposition	1	1.31
E2RS2Pr	E2US2P	Jetty/groin removal	1	0.26
U - Barren Land	E2US2P	Coastal processes	2	2.94
U - Commercial and Services	E2US2P	Coastal processes	2	1.05
U - Commercial and Services	E2US2P	Structure removed	1	0.52
U - Rangeland	E2US2P	Coastal processes	2	0.59
U - Residential	E2US2P	Coastal processes	2	1.29
U - Trans., Communications and Utilities	E2US2P	Coastal processes	1	0.44
U - Unknown	E2US2P	Coastal processes	1	0.36
Subtotal gain			65	56.23
E1UBL	E2US3M	Coastal processes	11	31.67
E1UBL	E2US3M	Unknown	3	2.69
E2EM1N	E2US3M	Coastal processes	2	2.86
E2EM1P	E2US3M	Coastal processes	10	10.47
Subtotal gain			26	47.68
E1UBL	E2US3N	Coastal processes	16	31.89
E1UBL	E2US3N6h	Tidal restriction	2	0.51
E1UBL	E2US3Nh	Tidal restriction	4	3.41
E1UBL6	E2US3N6	Coastal processes	3	1.30
E1UBL6	E2US3N6h	Tidal restriction	2	1.72
E1UBL6	E2US3N6h	Unknown	1	1.24
E2EM1N	E2US3N	Unknown	1	0.37
E2RF2N	E2US3N	Coastal processes	3	1.24
Subtotal gain			32	41.68
E2EM1P6	E2US4M	Unknown	1	1.41
Subtotal gain			1	1.41

M1UBL	M2RS2Pr	Jetty/groin construction	1	0.71
Subtotal gain			1	0.71
E1UBL6	M2US2P	Coastal processes	1	0.41
Subtotal gain			1	0.41
TOTAL GAIN OF NONVEGETATED COASTAL WETLAND			184	235.80

***Change in Nonvegetated
Coastal Type***

E2US2M	E2US2N	Coastal processes	2	1.25
E2US2M	E2US2P	Coastal processes	3	2.22
E2US2M	E2US3N	Coastal processes	1	0.77
E2US2Ms	E2US2P	Coastal processes	1	0.94
Subtotal change in type			7	5.18
E2US2N	E2US2M	Coastal processes	1	0.63
E2US2N	E2US2P	Coastal processes	3	1.74
E2US2N	E2US3M	Coastal processes	1	1.12
E2US2N	E2US3M	Unknown	1	12.44
Subtotal change in type			6	15.93
E2US2P	E2US2/1N	Coastal processes	1	1.61
E2US2P	E2US2M	Coastal processes	2	1.78
E2US2P	E2US2N	Coastal processes	14	13.51
E2US2P	E2US2N	Unknown	2	0.72
E2US2P	E2US3M	Coastal processes	2	1.27
E2US2P	E2US4N	Coastal processes	1	0.08
E2US2Ps	E2US2N	Coastal processes	3	4.43
E2US2Ps	E2US2P	Spoil deposition	3	3.54
Subtotal change in type			28	26.93
E2US3M	E2US2P	Coastal processes	1	0.54
Subtotal change in type			1	0.54

M2US2P	M2US2N	Coastal processes	2	5.97
Subtotal change in type			2	5.97
TOTAL CHANGE IN NONVEGETATED WETLAND TYPE			44	55.00

No Change in Nonvegetated Coastal Wetland

E2RF2N	E2RF2N		2	4.33
E2RF2Nh	E2RF2Nh		3	3.17
Subtotal no change			5	7.50
E2RS1N	E2RS1N		29	29.15
Subtotal no change			29	29.15
E2RS1P	E2RS1P		54	97.12
Subtotal no change			54	97.12
E2RS2N	E2RS2N		38	75.60
E2RS2Nr	E2RS2Nr		4	1.13
Subtotal no change			42	76.73
E2RS2P	E2RS2P		7	12.64
E2RS2Pr	E2RS2Pr		12	2.98
Subtotal no change			19	15.62
E2SB2N	E2SB2N		1	0.17
E2SB3N	E2SB3N		2	1.87
Subtotal no change			3	2.04
E2US1/2N	E2US1/2N		1	2.75
E2US1N	E2US1N		25	52.07
Subtotal no change			26	54.82

E2US1P	E2US1P	15	55.15
Subtotal no change		15	55.15
E2US2/1N	E2US2/1N	16	39.29
E2US2/EM1N	E2US2/EM1N	2	5.94
Subtotal no change		18	45.23
E2US2M	E2US2M	18	231.31
Subtotal no change		18	231.31
E2US2N	E2US2N	240	380.02
Subtotal no change		240	380.02
E2US2P	E2US2P	225	515.62
Subtotal no change		225	515.62
E2US3M	E2US3M	35	138.24
Subtotal no change		35	138.24
E2US3N	E2US3N	45	65.23
E2US3N6	E2US3N6	1	0.59
E2US3N6h	E2US3N6h	2	1.66
E2US3Nd	E2US3Nd	1	2.76
Subtotal no change		49	70.24
E2US4M	E2US4M	23	36.64
E2US4Md	E2US4Md	2	0.93
E2US4Mh	E2US4Mh	1	0.61
Subtotal no change		26	38.19
E2US4N	E2US4N	2	1.64
Subtotal no change		2	1.64
M2RS1N	M2RS1N	73	122.92
Subtotal no change		73	122.92
M2RS1P	M2RS1P	76	192.96

Subtotal no change			76	192.96
M2RS2N	M2RS2N		12	19.40
M2RS2Nr	M2RS2Nr		1	0.41
Subtotal no change			13	19.81
M2RS2P	M2RS2P		3	8.90
Subtotal no change			3	8.90
M2US1N	M2US1N		2	5.91
Subtotal no change			2	5.90
M2US1P	M2US1P		4	9.57
Subtotal no change			4	9.57
M2US2M	M2US2M		1	2.28
Subtotal no change			1	2.28
M2US2N	M2US2N		14	94.92
Subtotal no change			14	9.00
M2US2P	M2US2P		14	76.96
Subtotal no change			14	76.96
TOTAL NO CHANGE IN NONVEGETATED COASTAL WETLAND			1006	2206.9 0

Appendix B. Summary Tables for Individual Study Areas

Table 1-B. Trends in estuarine wetlands for Allins Cove from the 1930s to the 1950s and from the 1950s to the 1990s.

Table 2-B. Trends in estuarine wetlands for Calf Pasture Point from the 1930s to the 1950s and from the 1950s to the 1990s.

Table 3-B. Trends in estuarine wetlands for Jacobs Point from the 1930s to the 1950s and from the 1950s to the 1990s.

Table 4-B. Trends in estuarine wetlands for Palmer River from the 1930s to the 1950s and from the 1950s to the 1990s.

Table 5-B. Trends in estuarine wetlands for Sachuest Point from the 1930s to the 1950s and from the 1950s to the 1990s.

Table 6-B. Trends in estuarine wetlands for Wesquage Pond from the 1930s to the 1950s and from the 1950s to the 1990s.

Table 1-B. Trends in estuarine wetlands for Allins Cove from the 1930s to the 1950s and from the 1950s to the 1990s (excluding type changes within the wetland class).

Wetland Type* Change /Cause	1930-50 Acres Changed	Change/Cause	1950-90 Acres Changed**
Unconsolidated Shore	-1.6	EWH/Coastal Processes	-0.6
EEM/Coastal Processes	-1.2	U/Residential (lawn)	-0.4
Dune/Coastal Processes	+0.4	EWH/Coastal Processes	+0.8
EWH/Coastal Processes	+0.3	EEM/Coastal Processes	+1.5
Dune/Coastal Processes			+10.9
EWH/Coastal Processes			+0.6
EWH/Unknown			+2.1
EEM/Coastal Processes			
<i>Net Change</i>	<i>-2.1</i>		<i>+14.9</i>
Emergent Wetland	-3.7	EWH/Coastal Processes	-2.1
EUS/Coastal Processes	-0.3	EUS/Coastal Processes	-0.6
EWH/Unknown	-6.9	U/Golf course	-0.6
Dune/Coastal Processes	+0.4	EWH/Unknown	-3.2
U/Residential (single-family)	+0.2	EWH/Coastal Processes	-3.4
U/Golf course	+0.4	ESS/Unknown	-5.5
ESS/Ditching	+0.3	ESS/Phragmites invasion	-4.3
		PEM/Tidal Restriction/Ditching	+3.3
EWH/Coastal Processes			+0.6
EUS/Coastal Processes			+0.3
Dune/Coastal Processes			
<i>Net Change</i>	<i>-9.6</i>		<i>-15.5</i>
Scrub-Shrub Wetland	-0.4	EEM/Unknown	+5.5
EEM/Ditching	-0.3	EEM/Phragmites invasion	
<i>Net Change</i>	<i>-0.7</i>		<i>+5.5</i>
<i>NET CHANGE ALL</i>	<i>-12.4</i>		<i>+4.9</i>

*EWH = estuarine deepwater habitat; EUS = Estuarine Unconsolidated Shore; EEM = Estuarine Emergent Wetland; ESS = Estuarine Scrub-Shrub Wetland; PEM = Palustrine Emergent Wetland; U = Upland.

** Note: For losses (-) habitat designated is type changed to, whereas for gains (+) habitat designated is the former habitat (i.e., changed from).

Table 2-B. Trends in estuarine wetlands for Calf Pasture Point from the 1930s to the 1950s and from the 1950s to the 1990s (excluding type changes within the wetland class).

Wetland Type* Change/Cause	1930-50 Acres Changed	Change/Cause	1950-90 Acres Changed**	
Unconsolidated Shore	-2.7	EWH/Coastal Processes	-51.5	
EWH/Coastal Processes	-4.4	U/Barren Land (mixed)	-7.1	
EEM/Coastal Processes	-9.9	U/Commercial&Services	-1.4	
EEM/Coastal Process/Ditching	+13.0	EWH/Coastal Processes	-25.7	
U/Rangeland	+52.8	EWH/Spoil Deposition	+2.4	
EWH/Coastal Processes	+2.2	EEM/Coastal Processes	+1.3	
EEM/Spoil Deposition	+6.5	EEM/Spoil Deposition	+2.5	
U/Coastal Processes			+0.3	
ERS/Jetty-groin Removal				
<i>Net Change</i>	<i>+57.5</i>		<i>-79.2</i>	
Emergent Wetland	-1.6	EWH/Coastal Processes	-0.9	
Dune/Coastal Processes	-1.7	EWH/Tidal Restriction	-2.8	
EWH/Coastal Processes	-2.2	EUS/Coastal Processes	-6.6	
PEM/Phragmites invasion	-6.5	EUS/Spoil Deposition	-1.3	
EUS/Spoil Deposition	-0.8	U/Agriculture (hay/pasture)	-1.2	
U/Rangeland	-33.9	U/Barren Land (mixed)	-1.6	U/Urban
(landfill)	-3.8	U/Commercial&Services	-2.4	U/Forest
(mixed)	-9.0	U/Rangeland (mixed)	-0.2	U/Golf
Course	-1.5	U/Transp., Commun, & Util.	-5.6	
PSS/Spoil Deposition	-4.0	U/Ditching	-1.9	
PSS/Unknown	+3.3	EWH/Coastal Processes	-4.4	
ESS/Ditching	+0.4	EWH/Unknown	+8.4	
EUS/Coastal Processes	+0.3	EWH/Phragmites		

<i>Net Change</i>	-61.1		-20.4
Scrub-Shrub	-5.2	U/Barren Land (mixed)	+4.4
EEM/Ditching			
<i>NET CHANGE ALL</i>	-8.7		-95.2

*EWH = estuarine deepwater habitat; EUS = Estuarine Unconsolidated Shore; EEM = Estuarine Emergent Wetland; ESS = Estuarine Scrub-Shrub Wetland; ERS = Estuarine Rocky Shore; PEM = Palustrine Emergent Wetland; PSS = Palustrine Scrub-Shrub Wetland; U = Upland.

**For losses (-) habitat designated is type changed to, whereas for gains (+) habitat designated is the former habitat.

Table 3-B. Trends in estuarine wetlands for Jacobs Point from the 1930s to the 1950s and from the 1950s to the 1990s (excluding type changes within the wetland class).

Wetland Type* Change/Cause	1930-50 Acres Changed	Change/Cause	1950-90 Acres Changed**
Unconsolidated Shore	0	na	+1.4
EUS/Coastal Processes			+0.6
EWH/Coastal Processes			+2.0
<i>Net Change</i>	<i>0</i>		
Emergent Wetland	-2.6	U/Agriculture	-2.0
U/Rangeland			-0.4
U/Residential (lawn)			-1.4
EUS/Coastal Processes			-1.8
ESS/Ditching			+10.0
ESS/Ditching			+2.7
ESS/Phragmites invasion			+7.1
<i>Net Change</i>	<i>-2.6</i>		
Scrub-Shrub Wetland	0	na	-10.0
EEM/Ditching			-2.7
EEM/Phragmites invasion			+1.8
EEM/Ditching			-10.9
<i>Net Change</i>	<i>0</i>		
<i>NET CHANGE ALL</i>	<i>-2.6</i>		<i>-1.8</i>

*EWH = estuarine deepwater habitat; EUS = Estuarine Unconsolidated Shore; EEM = Estuarine Emergent Wetland; ESS = Estuarine Scrub-Shrub Wetland; U = Upland; na - not applicable.

** Note: For losses (-) habitat designated is type changed to, whereas for gains (+) habitat designated is the former habitat (i.e., changed from).

Table 4-B. Trends in estuarine wetlands for the Palmer River System from the 1930s to the 1950s and from the 1950s to the 1990s (excluding type changes within the wetland class).

Wetland Type* Change/Cause	1930-50 Acres Changed	Change/Cause	1950-90 Acres Changed**
Unconsolidated Shore EEM/Unknown	+0.6	U-Barren Land/Unknown	-0.6
			+0.5
			EWH/Unknown
			+1.7
EWH/Coastal Processes <i>Net Change</i>	+0.6		+1.6
Emergent Wetland	-0.5	EWH/Coastal Processes	-1.9
U/Residential (single-family)	-0.6	U/Barren Land (mixed)	-0.4
U/Residential Lawn	-0.4	U/Residential (single-family)	-0.6
U/Commercial&Services	-0.7	U/Commercial&Services	-1.1
ESS/Succession	-1.2	PEM/Tidal Restriction	+6.9
ESS/Phragmites-Ditching			+1.4
EWH/Coastal Processes			+0.9
EWH/Coastal Processes-Ditching			+0.6
EUS/Unknown			+0.8
U/Barren Land-Spoil-Ditching <i>Net Change</i>	-3.4		+6.6
Scrub-Shrub Wetland	0	N/A	-0.4
U/Rangeland			-6.9
EEM/Phragmites-Ditching			+1.1
EEM/Succession <i>Net Change</i>	0		-6.2
NET CHANGE ALL	-2.8		+2.0

* EWH =estuarine deepwater habitat; EUS = Estuarine Unconsolidated Shore; EEM = Estuarine Emergent Wetland; ESS = Estuarine Scrub-Shrub Wetland; U = Upland.

** Note: For losses (-) habitat designated is type changed to, whereas for gains (+) habitat designated is the former habitat (i.e., changed from).

Table 5-B. Trends in estuarine wetlands for Sachuest Point from the 1930s to the 1950s and from the 1950s to the 1990s (excluding type changes within the wetland class).

Wetland Type* Change/Cause	1930-50 Acres Changed	Change/Cause	1950-90 Acres Changed**
Unconsolidated Shore	-3.2	EEM/Coastal Processes	+1.0
U-Residential/Coastal Processes	-2.5	EEM/Phragmites invasion	+1.3
U-Recreation/Coastal Process& Structure Removal	-0.5	U/Commercial&Services	+0.5
EWH/Coastal Processes			
<i>Net Change</i>	-6.2		+2.8
Emergent Wetland	-1.2	U/Residential (lawn)	-4.4
Commercial&Services	-1.2	U/Residential (single-family)	-9.0
Rangeland (herbaceous)	-1.0	U/Commercial&Services	-12.3
Rangeland (shrub)	-1.4	U/Transp., Commun.,& Utili.	-0.7
Barren Land (sand)	+3.2	EUS/Coastal Processes	+1.0
EWH/Unknown	+2.5	EUS/Phragmites invasion	
	+5.3	ESS/Spoil Deposition	
<i>Net Change</i>	+6.2		-25.4
Scrub-Shrub Wetland	-5.3	EEM/Spoil Deposition	0
<i>Net Change</i>	-5.3		0
NET CHANGE ALL	-5.3		-22.6

* EWH = estuarine deepwater habitat; EUS = Estuarine Unconsolidated Shore; EEM = Estuarine Emergent Wetland; ESS = Estuarine Scrub-Shrub Wetland U = Upland.

** Note: For losses (-) habitat designated is type changed to, whereas for gains (+) habitat designated is the former habitat.

Table 6-B. Trends in estuarine wetlands for Wesquage Pond from the 1930s to the 1950s and from the 1950s to the 1990s (excluding type changes within the wetland class).

Wetland Type* Change/Cause	1930-50 Acres Changed	Change/Cause	1950-90 Acres Changed**
Streambed	0	na	+0.5
Dune/Coastal Processes			
<i>Net Change</i>	0		+0.5
Rocky Shore	0	na	+0.3
EWH/Jetty-groin Construction			
<i>Net Change</i>	0		+0.3
Unconsolidated Shore	-47.6	EWH/Tidal Restriction	-1.1
U/Residential (single-family)			
	-0.8	EEM/Tidal Restriction	
	-0.5	Dune/Coastal Processes	
	-0.3	ESS/Tidal Restriction	
	+0.3	EWH/Coastal Processes	
<i>Net Change</i>	-48.9		-1.1
Emergent Wetland	+0.2	EWH/Tidal Restriction	-4.4
EWH/Tidal Restriction			
	+0.8	EUS/Tidal Restriction	-2.7
U/Commercial&Services (paved)			-0.6
U/Residential (single-family)			-1.5
U/Rangeland (shrub)			+0.6
EWH/Unknown			+0.8
EWH/Tidal Restriction			+3.6
EWH/Tidal Restriction-Phragmites			+0.3
ESS/Unknown			
<i>Net Change</i>	+1.0		-3.9
Scrub-Shrub Wetland	-0.4	U/Commercial&Services	-0.3
EEM/Unknown			
	+0.3	EUS/Tidal Restriction	
<i>Net Change</i>	-0.1		-0.3
<i>NET CHANGE ALL</i>	-48.0		-4.5

* EWH = estuarine deepwater habitat; EUS = Estuarine Unconsolidated Shore; EEM = Estuarine Emergent Wetland; U = Upland; na - not applicable.

** Note: For losses (-) habitat designated is type changed to, whereas for gains (+) habitat designated is the former habitat.