

Transect 0: Downstream REFE| Wells 1 at 0m, Well 2 at 5m Well 3 at 25m

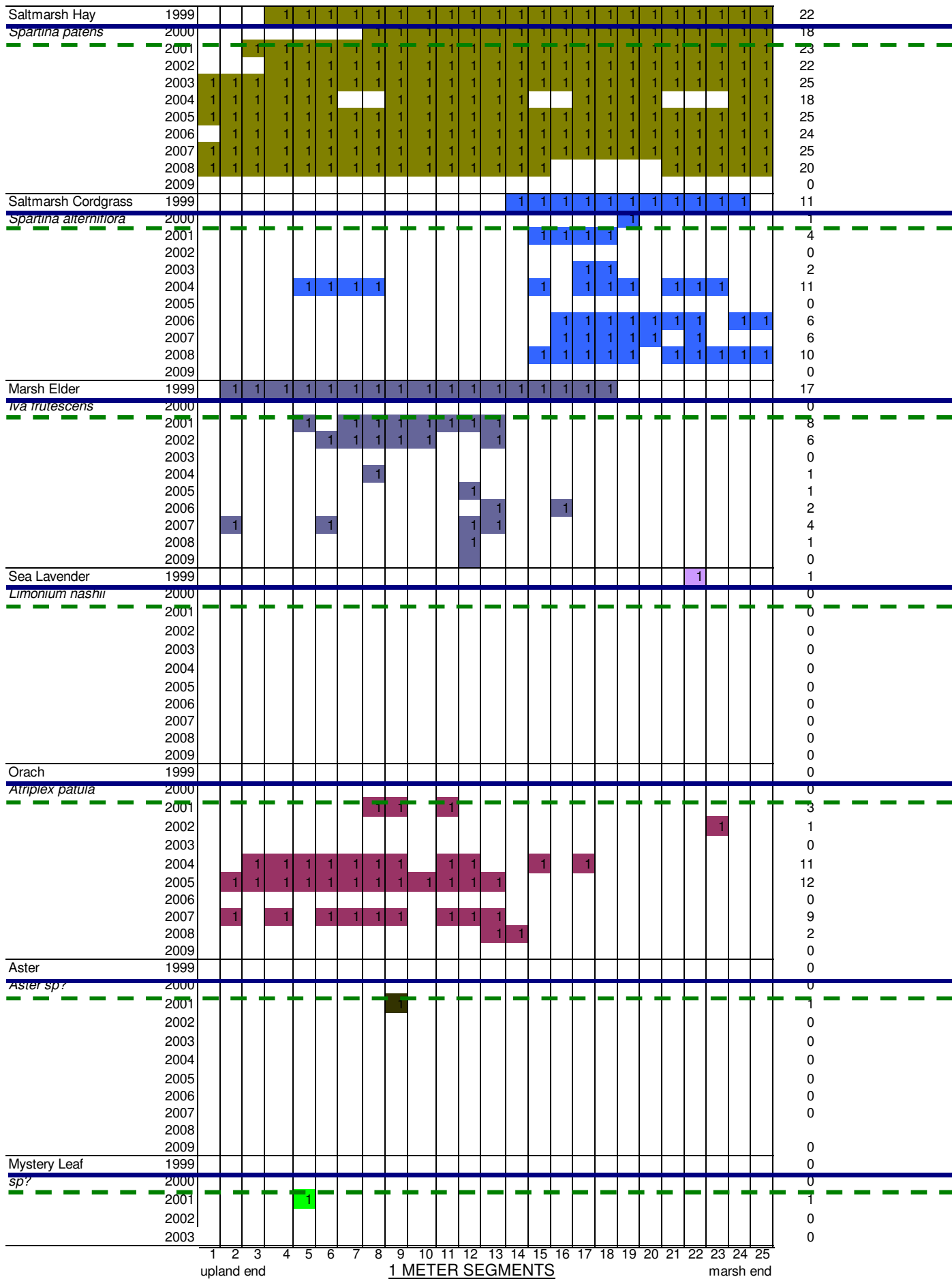
Observers and dates

1999 L. Duff 10/5/99 2003 Duff, Magnuson, Chase, Romona M. 2005 Chmura & students
 2000 Nancy, G. Chmura 10/18/00 Data for meters 1-8 is missing
 2001 LD, ADR, 10/25/01 2006 La France HS
 2002 Chmura and students 2004 Chmura and students 10/30 2007 LaFrance HS
 2008 LaFrance HS

SPECIES

SPECIES	Year	1 METER SEGMENTS																									# of intervals present in		
		upland end	1	2	3	4	5	6	7	8	ditch	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24	25
Phragmites <i>Phragmites australis</i>	1999	1	1	1	1	1	1	1	1																				8
	2000	1	1	1	1	1	1	1	1																				6
	2001	1	1	1	1	1	1	1	1																				7
	2002	1	1	1	1	1	1	1	1																				7
	2003	1	1	1	1	1	1	1	1																				6
	2004	1	1	1	1	1	1	1	1																				7
	2005	1	1	1	1	1	1	1	1																				8
	2006	1	1	1	1	1	1	1	1																				5
	2007	1	1	1	1	1	1	1	1																				6
	2008	1	1	1	1	1	1	1	1																				4
2009																												0	
Spikegrass <i>Distichlis spicata</i>	1999							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
	2000					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19
	2001					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
	2002					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
	2003					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
	2004					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
	2005					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
	2006					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
	2007					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19
	2008					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
2009																												0	
Saltmarsh Hay <i>na patens</i>	1999					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21	
	2000					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	
	2001					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	
	2002					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	
	2003					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	
	2004					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	
	2005					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	
	2006					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21	
	2007					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	
	2008					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	
2009																											0		
Saltmarsh Cordgrass <i>Spartina alterniflora</i>	1999					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	
	2000					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	
	2001					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	
	2002					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
	2003					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	
	2004					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	
	2005					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	2006					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	
	2007					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	
	2008					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17	
2009																											0		

■ = immature



Location: Ipswich, Jeffrey's Neck/ Little Neck Transect 1 Upstream

Massachusetts Audubon Society, Endicott Center
 Long Range Phragmites Study
 Location: Ipswich Little Neck Road
 Rock ledge under peat

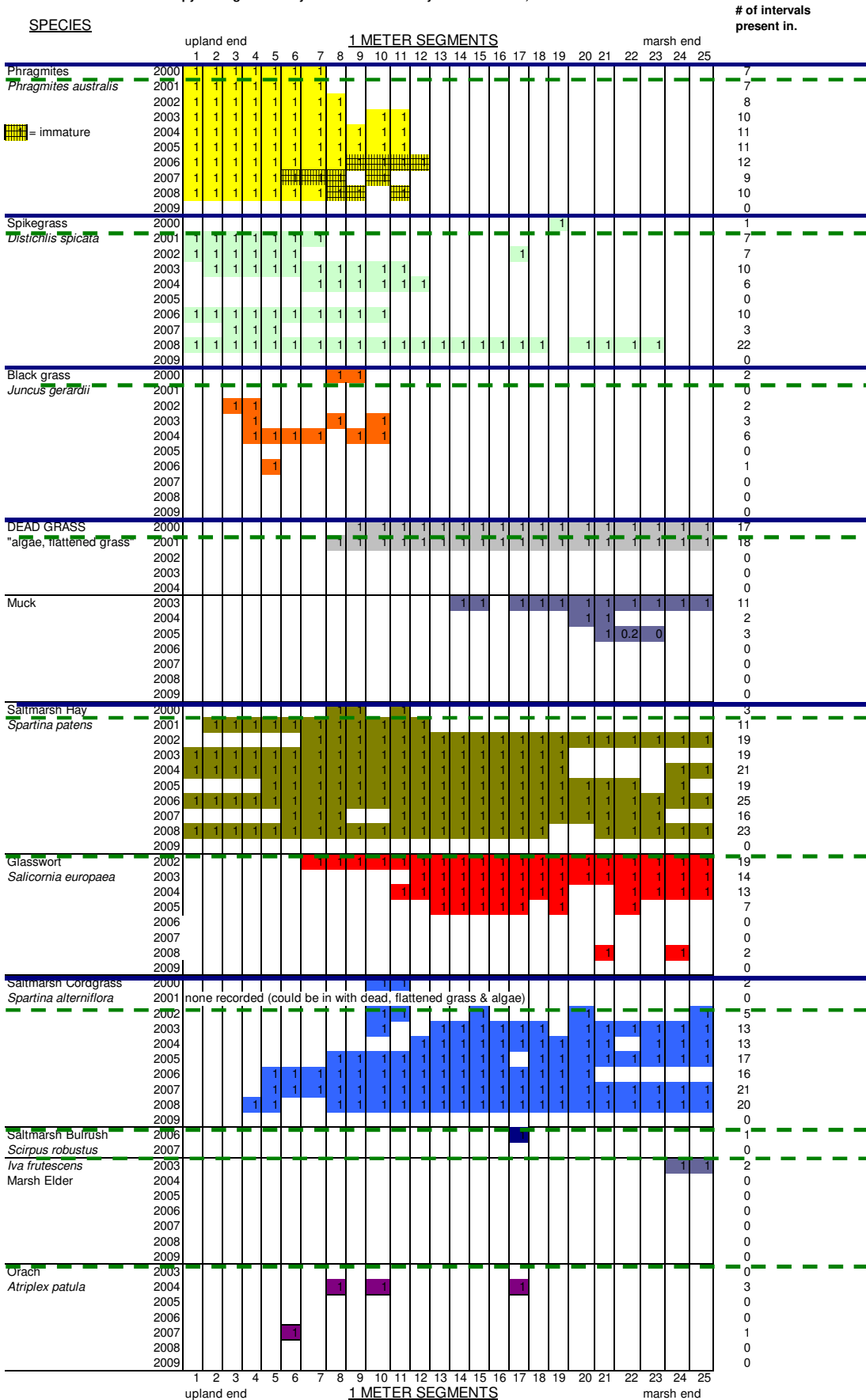
This site was flooded during the spring of 2000 due to a collapsed culvert.
 Much of the vegetation was killed as a result.

Transect 2 - Upstream

Observers and dates

2000 Duff, Ips High 10/18/00 2003 Duff/Magnuson collected 4/9/04 06 Duff HS
 2001 LD, ADR, 10/25/01 2004 Duff, Ips High 10/6/04 08 Duff HS
 2002 Duff/Students 2005 Duff and Ips High 11/9/05

01 note: Between M 11-25 whispy unid. grasses may have been from last year-unable to ID, too late in season?



Massachusetts Audubon Society, Endicott Center
 Long Range Phragmites Study
 Location: Ipswich Little Neck Road
 Rock ledge under peat

This site was flooded during the spring of 2000 due to a collapsed culvert.
 Much of the vegetation was killed as a result.
 Transect 3

Observers and dates

2000 Duff, Ips High 10/18/00 2003 Duff, Magnuson (data collected 4/8/04)
 2001 LD, ADR, 10/25/01 2005 Duff and HS students 2008 Duff HS
 2002 Duff, Chmura, students 2006 Duff HS 2007 Duff HS

08
 5
 6
 06

01 note: Between M 11-25 whispy unid. grasses may have been from last year-unable to ID, too late in season?

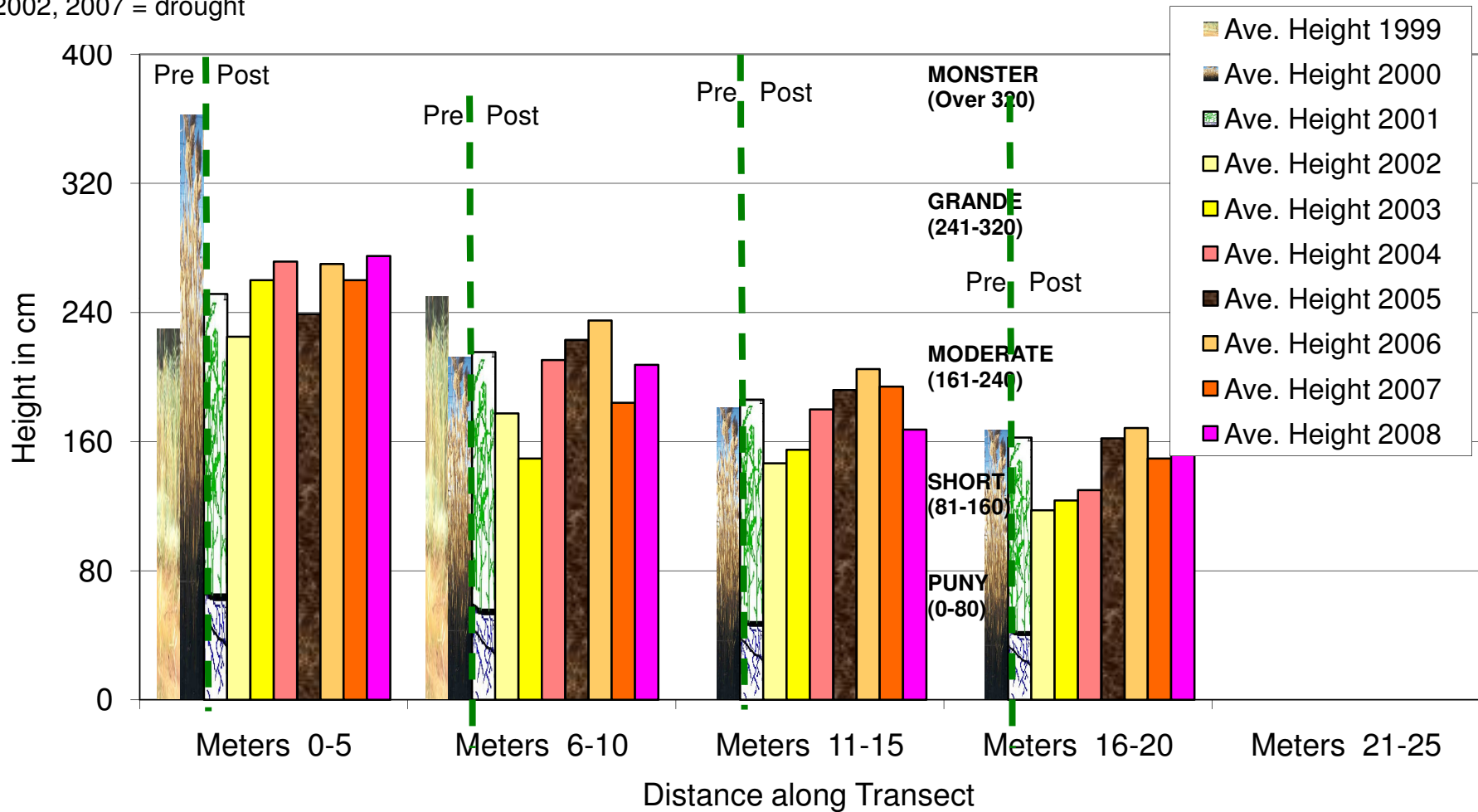
All Post Restoration Site Restored in 2001

SPECIES	Year	1 METER SEGMENTS																									# of intervals present in
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Phragmites <i>Phragmites australis</i>	2002	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
	2003	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
	2004	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
	2005	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13
	2006	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
	2007	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
	2008	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
	2009																										0
	Spikegrass <i>Distichlis spicata</i>	2002																									8
2003						1			1	1	1	1	1							1	1	1	1	1	1	1	13
2004										1	1	1	1	1								1	1	1	1	1	9
2005										1	1	1	1	1							1	1	1	1	1	1	12
2006										1	1	1	1	1													3
2007										1	1	1	1	1									1	1	1	1	8
2008										1	1	1	1	1						1		1	1	1	1	1	10
2009																											0
Black grass <i>Juncus gerardii</i>		2002																									7
	2003																									4	
	2004																									7	
	2005																									6	
	2006																									4	
	2007																									3	
	2008																									0	
	2009																									0	
	Saltmarsh Hay <i>Spartina patens</i>	2002																									12
2003		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	
2004		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23	
2005		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24	
2006		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23	
2007		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	
2008		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	
2009																										0	
Glasswort <i>Salicornia europaea</i>		2002																									13
	2003																									3	
	2004																									6	
	2005																									0	
	2006																									0	
	2007																									2	
	2008																									2	
	2009																									0	
	Marsh Elder <i>Iva frutescens</i>	2002																									0
2003																										0	
2004																										2	
2005																										0	
2006																										0	
2007																										1	
2008																										0	
2009																										0	
Olney Three-square <i>Scirpus americanus</i>		2002																									0
	2003																									0	
	2004																									0	
	2005																									1	
	2006																									0	
	2007																									0	
	2008																									0	
	2009																									0	
	Saltmarsh Bulrush <i>Scirpus robustus</i>	2002																									1
2003																										0	
2004																										0	
2005																										0	
2006																										0	
2007																										2	
2008																										4	
2009																										0	
Orach <i>Atriplex patula</i>		2002																									0
	2003																									0	
	2004																									2	
	2005																									0	
	2006																									0	
	2007																									2	
	2008																									4	
	2009																									0	
	Saltmarsh Cordgrass <i>Spartina alterniflora</i>	2002																									7
2003																										16	
2004																										15	
2005																										14	
2006																										0	
2007																										16	
2008																										20	
2009																										0	

Not recorded

Average *Phragmites* Heights, Transect # 1 Littleneck Rd.
Ipswich, MA
Years 1999-2008

1999= drought
2000= site nearby was ponded.
2001= site was restored in spring.
2002, 2007 = drought



Average *Phragmites* Heights, Transect # 3, Littleneck Rd.

Ipswich, MA
Years 2002-2008

2001= site was restored in spring.
2002= drought
2007 = drought. 2008 = wet.

