water

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Table S1. Location (latitude /longitude) information for each study site reporting wetland biomass and productivity data in coastal Louisiana. Sites are displayed per hydrological basin in **Figure 1**. Text in parenthesis in the reference column indicates the specific description (location name, identification, sampling habitat) listed in the original source.

ID	Study type	Latitude	Longitude	Reference (Location ID)
1.1	Biomass/Productivity	29°54'47.34"N	93°22'31.97"W	Edwards and Mills (2005) (C99) [82]
1.2	Biomass/Productivity	29°55'10.27"N	93°20'37.20"W	Edwards and Mills (2005) (C83)
1.3	Biomass/Productivity	29°54'39.17"N	93°22'52.29"W	Edwards and Mills (2005) (NAT1)
1.4	Biomass/Productivity	29°53'35.42"N	93°21'39.36"W	Edwards and Mills (2005) (NAT2)
1.5	Biomass/Productivity	29°53'44.96"N	93°22'5.99"W	Edwards and Mills (2005) (C96)
1.6	Biomass/Productivity	29°54'16.91"N	93°21'56.37"W	Edwards and Mills (2005) (C93)
2	Biomass	30°11'8.15"N	89°35'11.63"W	Ford & Grace (1998) [108]
3.1	Biomass	29°40'30.00"N	92°48'45.00"W	Gabrey and Afton (2001) (burned) [96]
3.2	Biomass	29°37'54.63"N	92°32'2.57"W	Gabrey and Afton (2001) (I)
3.3	Biomass	29°34'39.07"N	92°31'25.38"W	Gabrey and Afton (2001) (S)
4.1	Biomass	29°32'30.20"N	91°27'15.80"W	Evers (1998) (Wax Lake Delta) [115]
4.2	Biomass	29°27'15.50"N	91°20'16.40"W	Evers (1998) (Atchafalaya)
5	Biomass	29°26'55.73"N	91°20'24.89"W	Fuller et al. (1985) [107]
6	Biomass	29°30'15.33"N	91°13'24.58"W	Carpenter et al. (2007) (2) [116]
7	Biomass	29°31'14.99"N	90°48'7.90"W	Tobin et al. (2014) [111]
8	Biomass	29°15'20.71"N	90°40'18.65"W	Reed and Cahoon (1992) [79]
9.1	Biomass	29°30'2.49"N	90°25'2.64"W	Hopkinson et al. (1978) (*Sagittaria falcata)* [59]
9.2	Biomass	29°26'3.48"N	90°21'23.63"W	Hopkinson et al. (1978) (*Spartina patens)*
10	Biomass/Productivity	29°30'14.10"N	90°14'59.85"W	Kaswadji et al. (1990) [85]
11	Productivity	29°41'18.18"N	91° 6'48.22"W	Day et al. (2006) [135]
12.1	Biomass	29°55'15.90"N	90°42'12.93"W	Conner and Day (1992) (Impounded) [141]
12.2	Biomass	29°53'56.18"N	90°42'52.48"W	Conner and Day (1992) (Natural)
12.3	Biomass	29°55'41.36"N	90°41'35.60"W	Conner and Day (1992) (Crayfish Farm)
12.4	Biomass	29°54'32.92"N	90°42'35.57"W	Conner and Day (1992) (Restored)
13.1	Biomass	29°21'46.31"N	90°15'56.09"W	Ramsey et al. (2014) (2) [73]
13.2	Biomass	29°22'10.97"N	90°14'15.18"W	Ramsey et al. (2014) (3)
13.3	Biomass	29°19'53.79"N	90°16'27.32"W	Ramsey et al. (2014) (397)

13.4	Biomass	29°19'36.31"N	90°16'56.55"W	Ramsey et al. (2014) (978A)
14	Biomass/Productivity	29°17'43.75"N	90° 9'48.46"W	Hopkinson et al. (1978) (*Juncus roemerianus)* [59]
15	Productivity	29°13'45.39"N	90° 7'16.56"W	Kirby and Gosselink (1976) (1) [60]
16	Biomass/Productivity	29° 9'34.40"N	90°10'34.49"W	Hopkinson et al. (1978) *Distichlis spicata)* [59]
17	Biomass/Productivity	29° 6'32.57"N	90°10'59.33"W	Hopkinson et al. (1978) (*Spartina alterniflora))* [59]
18.1	Biomass	29°11'0.96"N	90°14'27.45"W	Tong et al. (2013) (BR) [78]
18.2	Biomass	29°10'59.43"N	90°14'29.19"W	Tong et al. (2013) (AR)
19	Biomass	29°18'40.81"N	90° 3'47.41"W	Delaune (1979) [62]
20	Biomass/Productivity	29°11'7.30"N	90° 5'26.73"W	Hopkinson et al. (1978) (*Spartina cynosuroides)* [59]
21	Biomass	29°45'34.23"N	90°50'30.60"W	Izdepski et al. (2009) [119]
22	Biomass	29°46'35.83"N	90°37'51.84"W	Sasser et al. (1995) [114]
23.1	Biomass/Productivity	29°55'16.47"N	90°49'27.26"W	Conner and Day (1976) (BHL) [61]
23.2	Biomass/Productivity	29°54'1.72"N	90°42'38.50"W	Conner & Day (1976) (CT)
23.4	Biomass/Productivity	29°53'30.73"N	90°31'10.88"W	Hopkinson et al. (1978) (*Phragmites spp.)* [59]
23.5	Biomass/Productivity	29°53'32.49"N	90°31'6.11"W	Hopkinson et al. (1978) (Method)
24	Biomass	29°51'8.61"N	90°17'58.61"W	Carpenter et al. (2007) (1) [116]
25.1	Biomass/Productivity	29°49'8.98"N	89°55'59.65"W	Day et al. (2013) (N1) [84]
25.2	Biomass/Productivity	29°49'19.68"N	89°54'41.79"W	Day et al. (2013) (N2)
25.3	Biomass/Productivity	30° 5'0.74"N	89°53'17.84"W	Cramer et al. (1981) (A) [98]
24	Biomass	30°11'15.65"N	89°35'17.72"W	Ford and Grace (1998) [110]
24.1	Biomass	30°11'17.14"N	89°35'33.80"W	Taylor and Grace (1995) (Bb) [93]
24.2	Biomass	30°13'37.21"N	89°37'30.64"W	Taylor and Grace (1995) (A)
24.3	Biomass	30°12'55.95"N	89°36'29.11"W	Taylor and Grace (1995) (B)
25	Biomass	30°18'0.00"N	89°40'0.00"W	Gough and Grace (1998) (*Sagittaria)* [95]
26	Biomass/Productivity	30°15'7.57"N	89°55'51.36"W	Cramer et al. (1981) (B)) [98]
27	Biomass	30°22'58.90"N	90° 9'8.98"W	Gough et al. (1994) (B) [33]
28	Biomass	30°17'23.89"N	90°20'11.45"W	McFalls et al. (2010) [16]
29.1	Biomass/Productivity	29°43'30.98"N	89°48'43.13"W	Day et al. (2013) (M1) [84]
29.2	Biomass/Productivity	29°43'31.33"N	89°47'47.93"W	Day et al. (2013) (M2)
29.3	Biomass/Productivity	29°49'1.13"N	89°45'17.24"W	Day et al. (2013) (R1)
29.4	Biomass/Productivity	29°47'55.40"N	89°44'22.57"W	Day et al. (2013) (R2)
29.5	Biomass/Productivity	29°46'39.23"N	89°47'21.83"W	Day et al. (2013) (L11)
29.6	Biomass/Productivity	29°41'39.96"N	89°51'22.36"W	Day et al. (2013) (L6)
29.7	Biomass/Productivity	29°46'17.59"N	89°51'45.96"W	Day et al. (2013) (L25)

29.8	Biomass/Productivity	29°50'0.76"N	89°41'49.06"W	Day et al. (2013) (L28)
29.9	Biomass/Productivity	29°50'50.66"N	89°51'46.39"W	Day et al. (2013) (L18)
29.10	Biomass/Productivity	29°45'55.11"N	89°50'11.84"W	Day et al. (2013) (L10) [84]
29.11	Biomass/Productivity	29°48'0.15"N	89°54'0.93"W	Day et al. (2013) (20)
29.12	Biomass/Productivity	29°48'13.53"N	89°52'30.15"W	Day et al. (2013) (L24)
29.13	Biomass/Productivity	29°45'23.36"N	89°47'31.29"W	Day et al. (2013) (L9)
29.14	Biomass/Productivity	29°50'25.24"N	89°53'9.75"W	Day et al. (2013) (L23)
29.15	Biomass/Productivity	29°49'19.29"N	89°53'34.84"W	Day et al. (2013) (L22)
29.16	Biomass/Productivity	29°44'30.19"N	89°51'0.90"W	Day et al. (2013) (L17)
29.17	Biomass/Productivity	29°42'0.78"N	89°48'40.56"W	Day et al. (2013) (L8)
29.18	Biomass/Productivity	29°47'23.92"N	89°55'13.28"W	Day et al. (2013) (L15)
29.19	Biomass/Productivity	29°48'46.11"N	89°55'57.19"W	Day et al. (2013) (L21)
29.20	Biomass/Productivity	29°47'47.78"N	89°56'23.19"W	Day et al. (2013) (L12)
29.21	Biomass/Productivity	29°40'25.91"N	89°36'58.96"W	Day et al. (2013) (L1)
29.22	Biomass/Productivity	29°38'18.06"N	89°39'41.42"W	Day et al. (2013) (L4)
29.23	Biomass/Productivity	29°45'23.67"N	89°42'5.75"W	Day et al. (2013) (L3)
29.24	Biomass/Productivity	29°42'8.60"N	89°38'39.57"W	Day et al. (2013) (L2)
29.25	Biomass/Productivity	29°44'2.34"N	89°54'11.62"W	Day et al. (2013) (L14)
29.26	Biomass/Productivity	29°50'2.53"N	89°49'33.12"W	Day et al. (2013) (L19)
29.27	Biomass/Productivity	29°46'19.96"N	89°54'22.75"W	Day et al. (2013) (L16)
29.28	Biomass/Productivity	29°46'12.67"N	89°55'53.48"W	Day et al. (2013) (L13)
29.29	Biomass/Productivity	29°38'28.68"N	89°45'54.95"W	Day et al. (2013) (L5)
29.30	Biomass/Productivity	29°45'33.73"N	89°53'22.64"W	Day et al. (2013) (16)
29.31	Biomass/Productivity	29°42'31.08"N	89°50'5.08"W	Day et al. (2013) (L7)
30.1	Biomass/Productivity	29°44'23.49"N	89°41'39.50"W	White et al. (1978) (1) [81]
30.2	Biomass/Productivity	29°44'21.67"N	89°41'41.22"W	White et al. (1978) (2)
30.3	Biomass/Productivity	29°40'37.21"N	89°37'39.49"W	White et al. (1978) (3)
30.4	Biomass/Productivity	29°39'35.25"N	89°33'15.23"W	White et al. (1978) (4)
31.1	Biomass/Productivity	29°42'46.02"N	89°42'28.56"W	Day et al. (2013) (F2) [84]
31.2	Biomass/Productivity	29°42'9.40"N	89°42'37.07"W	Day et al. (2013) (F1)
32.1	Biomass	29°40'4.62"N	89°42'28.70"W	Snedden et al. (2015) (MBS) [77]
32.2	Biomass	29°39'27.42"N	89°32'15.74"W	Snedden et al. (2015) (LBS)
33	Biomass	29°34'60.00"N	90° 4'60.00"W	Johnson and Foote (1997) [94]
34.1	Biomass	30°23'21.00"N	90° 9'37.00"W	Baldwin and Mendelssohn (1998) (*Sagittaria)* [109]

34.2	Biomass	30°22'51.00"N	90° 9'39.00"W	Baldwin and Mendelssohn (1998) (*Spartina)* [109]
35	Biomass/Productivity&	29° 14.985'N	90° 40.280'W	Darby and Turner (2008) [80]
36	Biomass	29°55'8.90"N	90°29'38.00"W	McKee and Mendelssohn (1989) (Donor marsh) [120]
37	Biomass	29°49'39.60"N	90°28'41.86"W	McKee and Mendelssohn (1989) (Recipient)
38.1	Productivity	29°10'59.07"N	90°14'33.83"W	Stagg and Mendelssohn (2010) (Degraded Block 5) [86]
38.2	Productivity	29°10'52.82"N	90°14'18.62"W	Stagg and Mendelssohn (2010) (Ambient Block 6)
38.3	Productivity	29°10'49.49"N	90°14'24.59"W	Stagg and Mendelssohn (2010) (Degraded Block 7)
38.4	Productivity	29°10'47.63"N	90°14'28.91"W	Stagg and Mendelssohn (2010) (Degraded Block 8)
35	Biomass	29°25'33.90"N	90°37'57.10"W	Turner et al. (2004) [74]
36	Biomass	29°17'60.00"N	90°16'12.00"W	Webb and Mendelssohn (1996) [100]
37	Biomass	29°28'12.00"N	90°22'12.00"W	Visser and Sasser (2009) [117]
38	Biomass	30°11'12.47"N	89°35'37.54"W	Gough and Grace (1998) (*Spartina)* [131]
39	Biomass	30°24'18.00"N	90°25'33.60"W	Shaffer et al. (2015) [113]
40.1	Biomass*	30°27'4.30"N	91°12'15.34"W	Martin and Shaffer (2005) [112]
40.2	Biomass*	29°39'1.77"N	90°27'4.59"W	Martin and Shaffer (2005)
41	Biomass*	29°45'7.27"N	90° 9'2.05"W	Howard and Mendelssohn (2000) [102]
42	Biomass*	30°23'0.00"N	90° 9'0.00"W	Baldwin and Mendelssohn (1998) [109]
43	Biomass*	30°20'15.27"N	89°40'19.83"W	Allen et al. (1994) (Collection site) [133]
44	Biomass	29°15'0.00"N	90° 9'0.00"W	Mendelssohn and McKee (1988) [72]
45	Biomass*	29°14'50.93"N	90°39'52.05"W	Lin and Mendelssohn (1996) [103]
46	Biomass*	29°11'60.00"N	90°32'60.00"W	Ewing et al. (1995) [90]
47	Biomass*	30°17'12.49"N	90°19'39.93"W	Spalding and Hester (2007) [97]
48.1	Biomass	29°31'6.30"N	91°21'15.50"W	Roberts et al. (2015) (BHB 1) [124]
48.2	Biomass	29°31'33.30"N	91°19'53.60"W	Roberts et al. (2015) (BHB 2)
48.3	Biomass	29°32'4.40"N	91°19'32.80"W	Roberts et al. (2015) (BHB 3)
49.1	Biomass*	29° 9'43.13"N	90° 6'2.24"W	Pezeshki and Delaune (1993) [91]
49.2	Biomass*	30° 0'29.75"N	90°23'28.77"W	Pezeshki and Delaune (1993)
50	Biomass/Productivity	29°41'16.77"N	90°46'29.62"W	Day et al. (2004) [136]
51	Biomass/Productivity	29°55'56.93"N	91°12'59.35"W	Conner et al. (1993) [137]
52	Biomass	30°23'21.00"N	90° 9'37.00"W	Graham and Mendelssohn (2014) [105]
53	Productivity	29°22'3.19"N	91° 8'55.27"W	Conner et al. (2014) [134]
54	Productivity	29°22'37.07"N	89°32'58.85"W	Baustian et al. (2010) [130]
55.1	Productivity	30°21'4.31"N	90° 2'36.51"W	Brantley et al. (2008) (Reference) [138]

55.2	Productivity	30°22'41.79"N	90° 5'46.10"W	Brantley et al. (2008) (upstream) [138]
56.1	Productivity	30°22'30.44"N	90° 5'58.04"W	Brantley et al. (2008) (outfall) [138]
56.2	Productivity	30°22'24.41"N	90° 6'17.79"W	Brantley et al. (2008) (downstream)
57.1	Productivity	29°41'36.75"N	92°13'38.08"W	Graham and Mendelssohn (2013) (5) [92]
57.2	Productivity	29°41'34.48"N	92°13'39.89"W	Graham and Mendelssohn (2013) (4)
57.3	Productivity	29°41'33.37"N	92°13'41.97"W	Graham and Mendelssohn (2013) (3) [92]
57.4	Productivity	29°41'32.23"N	92°13'44.20"W	Graham and Mendelssohn (2013) (2)
57.5	Productivity	29°41'33.19"N	92°13'44.26"W	Graham and Mendelssohn (2013) (R)
58.1	Biomass	30°22'56.37"N	90° 9'47.88"W	Brewer and Grace (1990) (*Spartina patens)* [106]
58.2	Biomass	30°23'43.65"N	90° 9'49.05"W	Brewer and Grace (1990) (*C. Jamacainse*s)
58.3	Biomass	30°23'16.58"N	90° 9'44.32"W	Brewer and Grace (1990) (*Sagittaria)*
59.1	Productivity	30°14'28.36"N	91°53'53.37"W	Hunter et al. (2009) [139]
59.2	Biomass/Productivity	29°26'3.48"N	90°21'23.63"W	Hopkinson et al. (1980) (*Spartina patens)* [89]
59.3	Biomass/Productivity	29°17'43.75"N	90° 9'48.46"W	Hopkinson et al. (1980) (*Juncus roemerianus)*
59.4	Biomass/Productivity	29° 9'34.40"N	90°10'34.49"W	Hopkinson et al. (1980) (*Distichlis spicata)*
59.5	Biomass/Productivity	29° 6'32.57"N	90°10'59.33"W	Hopkinson et al. (1980) (*Spartina alterniflora)*
59.6	Biomass/Productivity	29°30'2.49"N	90°25'2.64"W	Hopkinson et al. (1980) (*Sagittaria falcata)*
59.7	Biomass/Productivity	29° 6'32.57"N	90°10'59.33"W	Hopkinson et al. (1980) (*Spartina cynosuroide)s*
60	Biomass[&]	29° 17.191'N	89° 22.684'W	Mendelssohn and Kuhn (2003) [75]
61.1	Biomass	29°54'3.90"N	89°52'9.29"W	Jeng and Hong (2005) (A) [50]
61.2	Biomass	29°54'32.09"N	89°52'6.46"W	Jeng and Hong (2005) (B)
61.3	Biomass	29°52'55.46"N	89°52'7.67"W	Jeng and Hong (2005) (Reference)
62	Productivity	30°13'37.7"N	89°39'32.4"W	White and Simmons (1988) [108]
63.1	Biomass	29.502100 N	90.795326 W	Visser and Peterson (2015) (*Panicum hemitomon)* [123]
63.2	Biomass	29.547369 N	90.82335 W	Visser and Peterson (2015) (*Sagittaria lancifolia)*
63.3	Biomass	29.431305 N	90.833113 W	Visser and Peterson (2015) (*Spartina patens)*
64.1	Biomass[&]	29°46'13.0"N	90°08'12.6"W	Swarzenski et al. (2008) (*Barataria Bay)* [121]
64.2	Biomass[&]	29°32'51.7"N	91°04'33.6"W	Swarzenski et al. (2008) (*Penchant)* [121]
65	Biomass	29°28'17.4"N	90°10'24.3"W	La Peyre et al. (2009) [76]
66.1	Productivity[&]	30°11'33.77"N	89°34'35.72"W	McKee and Cherry (2009) (Big Branch) [51]
67	Productivity[&]	30°15'49.98"N	89°58'11.97"W	McKee and Cherry (2009) (Pearl River)
68	Biomass	29°27'26.3"N	89°53'07.1"W	Lin and Mendelssohn (2012) [83]
69	Biomass	29°49'43.9"N	90°08'24.4"W	Nolfo-Clements (2010) [101]
70	Biomass	30°15'36.2"N	90°20'26.1"W	Geho et al. (2007) [48]

71	Productivity	29°15'14.9"N	90°39'51.3"W	Darby and Turner (2008) [80]
72	Biomass	29°15'15.4"N	90°11'51.6"W	Visser et al. (2006) [118]
73	Biomass	30°23'21"N	90°09'37"W	Slocum and Mendelssohn (2008) [99]
74	Biomass	29°12'06.0"N	89°13'02.7"W	Cahoon et al. (2011) [104]
75	Biomass/Productivity*	29°15'N	90°40.0'W	McKee and Rooth (2008) [87]
76	Productivity	30°23.205'N	90°09.551'W	Graham and Mendelssohn (2013) [92]
77	Productivity	29°53'58.06"N	90°34'36.04"W	Conner et al. (1981) [140]

& = Latitude/Longitude information was estimated using original figures and site description when location did not match actual coordinates included in the paper;
***** = plant collection sites for greenhouse experiments.

Table S2. Wetlands above and belowground biomass values obtained in different experimental settings in coastal Louisiana from 1976–2015 (see text for description of headings/categories).

Species	Year	Level	Type of Study	Pot Dimensions	Treatments	Value/Range	Units	Reference
Spartina alterniflora	1978	Above	Field			469	g m^{-2}	Hopkinson et al. (1978) [59]
			Greenhouse	0.5 Gallon	Salinity	0.2-0.98	g pot^{-1}	Parrondo et al. (1978) [40]
			Greenhouse	0.5 Gallon	Hydrology	5.8-7.05	g pot^{-1}	Parrondo et al. (1978)[40]
			Field			623.24	g m^{-2}	White et al. (1978) [81]
	1979		Field		Soil Constituents	376-2,178	g m^{-2}	DeLaune et al. 1979 [62]
	1980		Field			469	g m^{-2}	Hopkinson et al. (1980) [89]
	1988		Mesocosm-field	22 cm diameter x 22 cm height	Soil Waterlogging	6.75-27.66	g pot^{-1}	Mendelssohn and McKee (1988) [72]
	1995		Mesocosm-field		Control	713	g m^{-2}	Taylor and Grace (1995) [93]
			Greenhouse	Not included	Salinity x Hydroperiod	0.5-26.7	g pot^{-1}	Pezeshki and DeLaune (1993) [91]
	1996		Greenhouse	20 cm diameter x 22 cm height	Control	19.85	g pot^{-1}	Lin and Mendelssohn (1996) [103]

	2001		Field		Control	131	g m^{-2}	Gabrey and Afton (2001) [96]
			Greenhouse	0.7 L	Salinity x Harvest Time	12.02-24.14	g pot^{-1}	Hester et al. (2001) [41]
	2004		Field			565	g m^{-2}	Turner et al. (2004) [74]
	2005		Field		Natural-Elevation	241.7-416.7	g m^{-2}	Edwards and Mills (2005) [82]
			Field		Created-Elevation	359.6-1,420.8	g m^{-2}	Edwards and Mills (2005) [82]
	2008		Field-fertilization		Control	641	g m^{-2}	Darby and Turner (2008) [80]
	2013		Field		Reference	344	g m^{-2}	Tong et al. (2013) [78]
	2014		Field		Impact from oil spill	7.1-801.2	g m^{-2}	Ramsey III et al. (2014) [73]
	2015		Mesocosm-field		Salinity x Hydroperiod	0-5,900	g m^{-2}	Snedden et al. (2015) [77]
	1978		Greenhouse	0.5 Gallon	Hydrology	1.8-3.3	g pot^{-1}	Parrondo et al. (1978) [40]
Spartina alterniflora	1995	Below	Greenhouse	Not included	Salinity x Hydroperiod	0.3-1.7	g pot^{-1}	Pezeshki and DeLaune (1993) [91]
	2008		Field-fertilization		Control	1,207.7	g m^{-2}	Darby and Turner (2008) [80]
	2015		Mesocosm-field		Salinity x Hydroperiod	0-13,500	g m^{-2}	Snedden et al. (2015) [77]
Spartina patens	1978	Above	Field			1,040.38	g m^{-2}	White et al. (1978) [81]
			Field			900	g m^{-2}	Hopkinson et al. (1978) [59]
	1980		Field			900	g m^{-2}	Hopkinson et al. (1980) [89]
	1981		Field		Salinity x Hydroperiod	960-1,767.22	g m^{-2}	Cramer et al. (1981) [98]
	1988		Field		Salinity	1.9-1,056	g m^{-2}	White and Simmons (1988) [108]
	1993		Greenhouse	Not specified	Salinity x Eh	0.3-1.5	g pot^{-1}	Pezeshki and DeLaune (1993)) [91]

	1995		Field		Control	290	g m^{-2}	Taylor and Grace (1995) [93]
			Greenhouse	Not specified	Salinity	1.8-2.8	g pot^{-1}	Broome et al. (1995) [42]
			Greenhouse	Not specified	Hydroperiod	0.9-3.2	g pot^{-1}	Broome et al. (1995) [42]
			Greenhouse	15 cm	Salinity x Exposure Time	4-8.2	g pot^{-1}	Ewing et al. (1995) [90]
	1996		Greenhouse	20 cm diameter x 22 cm height	Control	26.375	g pot^{-1}	Lin and Mendelssohn (1996) [103]
	1997		Field		Control- unmanaged	833.21	g m^{-2}	Johnson and Foote (1997) [94]
			Field		Control- grazed	583.33	g m^{-2}	Johnson and Foote (1997) [94]
	1998		Greenhouse	28.5 cm diameter x 34 cm tall = 18.9 L	Salinity x Hydroperiod	4.32-14.07	g pot^{-1}	Baldwin and Mendelssohn (1998a) [109]
			Field		Disturbance x Community	0-395.37	g $(0.25m)^{-2}$	Baldwin and Mendelssohn (1998) [129]
			Mesocosm-Field		Disturbance	300-500	g m^{-2}	Ford and Grace (1998) [110]
Spartina patens	1998	Above	Field		Hydroperiod	8.1-30.9	g $(0.1m)^{-2}$	Gough and Grace (1998a) [95]
			Field		Salinity	0-20.6	g $(0.1m)^{-2}$	Gough and Grace (1998a) [95]
			Mesocosm-Field		Control	300	g m^{-2}	Gough and Grace (1998) [131]
	2001		Greenhouse	8 L	Salinity x Competition	20-57	g pot^{-1}	La Peyre et al. (2001) [43]
			Greenhouse	0.7 L	Salinity x Harvest Time	12.18-41.73	g pot^{-1}	Hester et al.(2001) [41]

			Field		Control	316	g m^{-2}	Gabrey and Afton (2001) [96]
	2007		Greenhouse	200 L	Salinity x Hydroperiod	300-900	g pot^{-1}	Spalding and Hester (2007) [97]
	2010		Greenhouse	7.25 cm x 17.145 cm= 1 gallon	Salinity x Nutrients	16-142	g pot^{-1}	Merino et al. (2010) [44]
			Field			10	g $(0.25m)^{-2}$	Slocum and Mendelssohn (2008) [99]
	2015		Mesocosm-field		Salinity x Hydroperiod	0-7,500	g m^{-2}	Snedden et al. (2015) [77]
			Greenhouse	8.7 L	Salinity x Hydroperiod	3.5-10.4	g pot^{-1}	Visser and Peterson (2015) [123]
	1993	Below	Greenhouse	Not specified	Salinty x Eh	0.04-0.22	g pot^{-1}	Pezeshki and DeLaune (1993) [91]
	2007		Greenhouse	200 L	Salinity x Hydroperiod	50-300	g pot^{-1}	Spalding and Hester (2007) [97]
	2015		Mesocosm-field		Salinity x Hydroperiod	0-17,000	g m^{-2}	Snedden et al. (2015) [77]
Sagittaria lancifolia	1985	Above	Mesocosm-Field		Control	106.1	g m^{-2}	Fuller et al. (1985) [107]
	1988		Field		Salinity	98.5-420.6	g m^{-2}	White and Simmons (1988) [108]
	1989		Field		Control	5	g $(0.1m)^{-2}$	McKee and Mendelssohn (1989) [120]
Sagittaria lancifolia	1995	Above	Field			0.3	g m^{-2}	Sasser et al. (1995) [114]
			Mesocosm-Field		Control	120	g m^{-2}	Taylor and Grace (1995) [93]
	1996		Greenhouse	20 cm diameter x 22 cm height	Control	8.3	g pot^{-1}	Lin and Mendelssohn (1996) [103]

1998	Greenhouse	28.5 cm diameter x 34 cm tall = 18.9 L	Salinity x Hydroperiod	0-11.9	g pot^{-1}	Baldwin and Mendelssohn (1998) [109]
	Field		Disturbance x Community	0-106.9	g m^{-2}	Baldwin and Mendelssohn (1998) [109]
	Mesocosm-Field		Disturbance	400-500	g $(0.25m)^{-2}$	Ford and Grace (1998) [110]
	Field		Hydroperiod	1.6-11.9	g $(0.1m)^{-2}$	Gough and Grace (1998a) [95]
	Field		Salinity	0-11.7	g $(0.1m)^{-2}$	Gough and Grace (1998a) [95]
	Mesocosm-Field		Control	77.5	g m^{-2}	Gough and Grace (1998) [131]
1999	Greenhouse	176.7 cm2	Salinity x Exposure Time	1.5-19	g pot^{-1}	Howard and Mendelssohn (1999a) [45]
	Greenhouse	176.7 cm2	Salinity x Exposure Time	0.2-26.5	g pot^{-1}	Howard and Mendelssohn (1999) [46]
2000	Greenhouse	176.7 cm2	Salinity x Exposure Time x Community	2.0-20	g pot^{-1}	Howard and Mendelssohn (2000) [102]
2001	Greenhouse	8 L	Salinity x Competition	8.0-38	g pot^{-1}	La Peyre et al. (2001) [43]
2005	Mesocosm-Lab	200 L	Salinity	200-950	g m^{-2}	Martin and Shaffer (2005) [112]
2007	Greenhouse	200 L	Salinity x Hydroperiod	200-550	g pot^{-1}	Spalding and Hester (2007) [97]
2008	Field			13.1	g $(0.25m)^{-2}$	Slocum and Mendelssohn (2008) [99]
2009	Field			3.4	g m^{-2}	Visser and Sasser (2009) [117]

	2011		Mesocosm-Lab	1330 L	Competition	28.1-55.4	g mesocosm^{-1}	Mayence and Hester (2011) [47]
Sagittaria lancifolia	2014	Above	Field			200	g m^{-2}	Tobin et al. (2014) [111]
	2015		Greenhouse	8.7 L	Salinity x Hydroperiod	3.0-12	g pot^{-1}	Visser and Peterson (2015) [123]
	1999	Below	Greenhouse	167.7 cm2	Salinity x Exposure Time	1-17.5	g pot^{-1}	Howard and Mendelssohn (1999a) [46]
	2005		Mesocosm-Lab	200 L	Salinity	55.-2,600	g m^{-2}	Martin and Shaffer (2005) [112]
	2007		Greenhouse	200 L	Salinity x Hydroperiod	100-899	g pot^{-1}	Spalding and Hester (2007) [97]
	2015		Field		Nutrients	1,900-2,750	g m^{-2}	Shaffer et al. (2015) [113]
Panicum hemitomon	1989	Above	Field		Control	32	g (0.1m)$^{-2}$	McKee and Mendelssohn (1989) [120]
	1995		Field			636.2	g m^{-2}	Sasser et al. (1995) [114]
	1999		Greenhouse	176.7 cm2	Salinity x Exposure Time	0.5-48	g pot^{-1}	Howard and Mendelssohn (1999) [45]
			Greenhouse	176.7 cm2	Salinity x Exposure Time	0-29	g pot^{-1}	Howard and Mendelssohn (1999) [45]
	2001		Greenhouse	8 L	Salinity x Competition	0-60	g pot^{-1}	La Peyre et al. (2001) [43]
			Greenhouse	0.7 L	Salinity x Harvest Time	13.23-29.67	g pot^{-1}	Hester et al.(2001) [41]
	2004		Greenhouse	4 L	Salinity x Hydroperiod	1.1-8.5	g pot^{-1}	Willis and Hester (2004) [122]
	2007		Greenhouse	200 L	Salinity x Hydroperiod	0-2,681	g pot^{-1}	Spalding and Hester (2007) [97]
			Mesocosm-field		Control	92	g (0.25m)$^{-2}$	Geho et al. (2007) [48]

	2008		Field		River Influx	337-441	g m^{-2}	Swarzenski et al. (2008) [121]
	2009		Field			567.9	g m^{-2}	Visser and Sasser (2009) [117]
	2010		Greenhouse	20 L	Nutrient x Hydroperiod	9.0-33	g pot^{-1}	Mayence and Hester (2010) [49]
	2011		Mesocosm-Lab	1330 L	Competition	78.7-111.7	g mesocosm^{-1}	Mayence and Hester (2011) [47]
Panicum hemitomon	2015	Above	Greenhouse	8.7 L	Salinity x Hydroperiod	4.5-8.2	g pot^{-1}	Visser and Peterson (2015) [123]
	2004	Below	Greenhouse	4 L	Salinity x Hydroperiod	0-6.5	g pot^{-1}	Willis and Hester (2004) [122]
	2007		Greenhouse	200 L	Salinity x Hydroperiod	0-500	g pot^{-1}	Spalding and Hester (2007) [97]
	2011		Mesocosm-Lab	1330 L	Competition	55.9-101.9	g mesocosm^{-1}	Mayence and Hester (2011) [47]
	2015		Greenhouse	8.7 L	Salinity x Hydroperiod	2.9-10	g pot^{-1}	Visser and Peterson (2015) [123]
Alternanthera philoxeroides	1995	Above	Field			1.4	g m^{-2}	Sasser et al. (1995) [114]
(Mart.) Griseb.	1998		Greenhouse	28.5 cm diameter x 34 cm tall = 18.9 L	Salinity x Hydroperiod	0-1.71	g pot^{-1}	Baldwin and Mendelssohn (1998) [109]
			Field		Disturbance x Community	0-3.3	g m^{-2}	Baldwin and Mendelssohn (1998a) [129]
			Mesocosm-field		Control (herbivory)	50	g m^{-2}	Evers et al. (1998) [115]
	2007		Field		Sediment addition	0-16	g m^{-2}	Carpenter et al. (2007) [116]
	2008		Field			14.1	g m^{-2}	Slocum and Mendelssohn (2008) [99]

	2009		Field			0.9	g m^{-2}	Visser and Sasser (2009) [117]
	2011		Mesocosm-Lab	1330 L	Competition	121.4-466.8	g mesocosm^{-1}	Mayence and Hester (2011) [47]
Polygonum punctatum	1988	Above	Field		Salinity	5.6-61.4	g m^{-2}	White and Simmons (1988) [108]
	1995		Field			0.6	g m^{-2}	Sasser et al. (1995) [114]
	1998		Greenhouse	28.5 cm diameter x 34 cm tall = 18.9 L	Salinity x Hydroperiod	0-0.09	g pot^{-1}	Baldwin and Mendelssohn (1998a) [129]
			Field		Disturbance x Community	0-72.7	g m^{-2}	Baldwin and Mendelssohn (1998) [109]
			Mesocosm-field		Control (herbivory)	70	g m^{-2}	Evers et al. (1998) [115]
	2007		Field		Sediment addition	0-42.3	g m^{-2}	Carpenter et al. (2007) [116]
Polygonum punctatum	2008	Above	Field			19.3	g m^{-2}	Slocum and Mendelssohn (2008) [99]
	2009		Field			0.1	g m^{-2}	Visser and Sasser (2009) [117]
Scirpus americanus	1997	Above	Field		Control-unmanaged	72.8	g m^{-2}	Johnson and Foote (1997) [94]
			Field		Control- grazed	15.8	g m^{-2}	Johnson and Foote (1997) [94]
	1998		Mesocosm-field		Control (herbivory)	10	g m^{-2}	Evers et al. (1998) [115]
			Mesocosm-field		Control	125	g m^{-2}	Gough and Grace (1998) [33]
			Field		Hydroperiod	5.7-9.8	g m^{-2}	Gough and Grace(1998a) [95]
			Field		Salinity	0-5.7	g m^{-2}	Gough and Grace(1998a) [95]

	1999		Greenhouse	176.7 cm2	Salinity x Exposure Time	11.0-43.0	g pot^{-1}	Howard and Mendelssohn (1999) [45]
			Greenhouse	176.7 cm2	Salinity x Exposure Time	1.0-19.75	g pot^{-1}	Howard and Mendelssohn (1999a) [46]
Distichlis spicata	1978	Above	Field			560	g m^{-2}	Hopkinson et al. 1978 [59]
			Greenhouse	0.5 Gallon	Salinity	0.025-0.04	g pot^{-1}	Parrondo et al. (1978) [40]
			Field			404.2	g m^{-2}	White et al. (1978) [81]
	1980		Field			560	g m^{-2}	Hopkinson et al. 1980 [89]
	1988		Field		Salinity	6.8-26	g m^{-2}	White and Simmons (1988) [108]
	2001		Field		Control	146.3	g m^{-2}	Gabrey and Afton (2001) [96]
	2006		Field		Salinity x Hydroperiod	1.5-5.5	g m^{-2}	Howard and Rafferty (2006) [126]
			Field		Intraspecific Variation	1.6-6.4	g m^{-2}	Howard and Rafferty (2006) [126]
	2010		Greenhouse	20 cm diameter x 22 cm	Intraspecific Variation	4.7-8.9	g pot^{-1}	Howard (2010) [127]
Distichlis spicata	2006	Below	Field		Salinity x Hydroperiod	0.6-1.5	g m^{-2}	Howard and Rafferty (2006) [126]
			Field		Intraspecific Variation	0.8-2	g m^{-2}	Howard and Rafferty (2006) [126]
	2010		Greenhouse	20 cm diameter x 22 cm	Intraspecific Variation	2.7-4.8	g pot^{-1}	Howard (2010) [127]
Leersia oryzoides	1989	Above	Field		Control	12	g m^{-2}	McKee and Mendelssohn (1989) [120]
	1995		Field			22	g m^{-2}	Sasser et al. (1995) [114]
	1998		Mesocosm-Field		Control (herbivory)	450	g m^{-2}	Evers et al. (1998) [115]
	2007		Field		Sediment addition	0-0.4	g m^{-2}	Carpenter et al. (2007) [116]

	2009		Field			17.7	g m^{-2}	Visser and Sasser (2009) [117]
Sagittaria latifolia	1995	Above	Field			7.8	g m^{-2}	Sasser et al. (1995) [114]
	1998		Mesocosm-Field		Control (herbivory)	854.2	g m^{-2}	Evers et al. (1998)) [115]
	2005		Mesocosm-Lab	200 L	Salinity	0-325	g m^{-2}	Martin and Shaffer (2005) [112]
	2007		Field		Sediment addition	0-5.3	g m^{-2}	Carpenter et al. (2007) [116]
	2009		Field			8.6	g m^{-2}	Visser and Sasser (2009) [117]
	2005	Below	Mesocosm-Lab	200 L	Salinity x Soil Type	0-160	g m^{-2}	Martin and Shaffer (2005) [112]
Vigna luteola	1988	Above	Field		Salinity	0.5-256	g m^{-2}	White and Simmons (1988) [108]
	1995		Mesocosm-Field		Salinity	32-65	g m^{-2}	Taylor and Grace (1995) [93]
			Field			33.5	g m^{-2}	Sasser et al. (1995) [114]
	1998		Field		Disturbance x Community	0.2-1.4	g m^{-2}	Baldwin and Mendelssohn (1998) [109]
	2008		Field			2.2	g m^{-2}	Slocum and Mendelssohn (2008) [99]
	2009		Field			25.4	g m^{-2}	Visser and Sasser (2009) [117]
Juncus roemerianus	1978	Above	Field			827	g m^{-2}	Hopkinson et al. (1978) [59]
			Field			1,306	g m^{-2}	White et al. (1978) [81]
	1980		Field			827	g m^{-2}	Hopkinson et al. 1980 [89]
	1988		Field			21	g m^{-2}	White and Simmons (1988) [108]
	2012		Field		Reference	440	g m^{-2}	Lin and Mendelssohn (2012) [83]
Lythrum lineare	1988	Above	Field			0.6	g m^{-2}	White and Simmons (1988) [108]

	1998		Field		Disturbance x Community	0-0.88	g m^{-2}	Baldwin and Mendelssohn (1998) [109]
	2008		Field			2.4	g m^{-2}	Slocum and Mendelssohn (2008) [99]
	2009		Field			0.4	g m^{-2}	Visser and Sasser (2009) [117]
Schoenplectus americanus	2000	Above	Greenhouse	176.7 cm^2	Salinity x Exposure Time x Community	14-40	g pot^{-1}	Howard and Mendelssohn (2000) [102]
	2007		Field		Sediment addition	0-0.1	g m^{-2}	Carpenter et al. (2007) [116]
			Mesocosm-field		Control	20	g m^{-2}	Geho et al. (2007) [48]

Table S3. Wetlands above and belowground net primary productivity values obtained in different experimental settings in coastal Louisiana from 1976-2015 (see text for description of headings/categories).

Species	Year	Level	Type of Study	Treatments	Value / Range	Units	Reference
Spartina alterniflora	1978	Aboveground	Field	Method	1527-2,895	g m^{-2} yr^{-1}	White et al. (1978) [81]
		Belowground			148	g m^{-2} yr^{-1}	White et al. (1978) [81]
	1980	Aboveground	Field	Method	950-,2100	g m^{-2} yr^{-1}	Hopkinson et al. (1980) [89]
	1990	Aboveground	Field	Method	831-1873	g m^{-2} yr^{-1}	Kaswadji et al. (1990) [85]
	2005	Aboveground	Field	Natural- Elevation	1,803-3,573	g m^{-2} yr^{-1}	Edwards and Mills (2005) [82]
		Belowground		Natural- Elevation	2,331-2,917	g m^{-2} yr^{-1}	Edwards and Mills (2005) [82]
		Aboveground	Field	Created- Elevation	1,642-2,399	g m^{-2} yr^{-1}	Edwards and Mills (2005) [82]
		Belowground		Created- Elevation	1,888.4-3,589	g m^{-2} yr^{-1}	Edwards and Mills (2005) [82]
	2008	Aboveground	Greenhouse*	Fertilization x CO_2 level	120-275	g m^{-2} yr^{-1}	McKee and Rooth (2008) [87]
		Belowground		Fertilization x CO_2 level	145-365	g m^{-2} yr^{-1}	McKee and Rooth (2008) [87]
		Aboveground	Field-Fertilization	Control	1,821	g m^{-2} yr^{-1}	Darby and Turner (2008) [80]
		Belowground		Control	11,676	g m^{-2} yr^{-1}	Darby and Turner (2008) [80]
	2012	Aboveground	Field	Reference	275	g m^{-2} yr^{-1}	Lin and Mendelssohn (2012) [83]
	2013	Aboveground	Field		1,123	g m^{-2} yr^{-1}	Day et al. (2013) [84]
		Belowground			4,776	g m^{-2} yr^{-1}	Day et al. (2013) [84]
Spartina patens	1978	Aboveground	Field		6,043	g m^{-2} yr^{-1}	Hopkinson et al. (1978) [59]
			Field	Method	1,342-1,428	g m^{-2} yr^{-1}	White et al. (1978) [81]

	1980	Aboveground	Field	Method	2,000-5,810	g m^{-2} yr^{-1}	Hopkinson et al. (1980) [89]
	2013	Aboveground	Field	Reference	1,158	g m^{-2} yr^{-1}	Day et al. (2013) [84]
		Belowground		Reference	5,776	g m^{-2} yr^{-1}	Day et al. (2013) [84]
Scirpus americanus	2013	Aboveground	Field	Reference	561	g m^{-2} yr^{-1}	Day et al. (2013) [84]
		Belowground		Reference	6,506	g m^{-2} yr^{-1}	Day et al. (2013) [84]
Distichlis spicata	1978	Aboveground	Field		3,237	g m^{-2} yr^{-1}	Hopkinson et al. (1978) [59]
		Aboveground	Field	Method	1,291	g m^{-2} yr^{-1}	White et al. (1978) [81]
	1980	Aboveground	Field	Method	720-2,750	g m^{-2} yr^{-1}	Hopkinson et al. (1980) [89]
Juncus roemerianus	1978	Aboveground	Field		3,416	g m^{-2} yr^{-1}	Hopkinson et al. (1978) [59]
		Aboveground	Field	Method	1,740-1,806	g m^{-2} yr^{-1}	White et al. (1978) [81]
	1980	Aboveground	Field	Method	1,200-3,295	g m^{-2} yr^{-1}	Hopkinson et al. (1980) [89]
Fraxinus spp.	1981	Aboveground	Field	Inundation	48-453	g m^{-2} yr^{-1}	Conner et al. (1981) [140]
	2014	Aboveground	Field	Inundation	15.-73	g m^{-2} yr^{-1}	Conner et al. (2014) [134]
Nyssa aquatica	1981	Aboveground	Field	Inundation	57-149	g m^{-2} yr^{-1}	Conner et al. (1981) [140]
	2014	Aboveground	Field	Inundation	70.6	g m^{-2} yr^{-1}	Conner et al. (2014) [134]
Sagittaria lancifolia	1978	Aboveground	Field		1,501	g m^{-2} yr^{-1}	Hopkinson et al. (1978) [59]
	1981	Aboveground	Field	Inundation	800-2,310	g m^{-2} yr^{-1}	Hopkinson et al. (1980) [89]
Spartina cynosuroides	1978	Aboveground	Field		1,355	g m^{-2} yr^{-1}	Hopkinson et al. (1978) [59]
	1980	Aboveground	Field	Method	398-1,700	g m^{-2} yr^{-1}	Hopkinson et al. (1980) [89]
Taxodium distichum	1981	Aboveground	Field	Inundation (natural/permanent)	209.9/646	g m^{-2} yr^{-1}	Conner et al. (1981) [140]
				Inundation (controlled)	387.8	g m^{-2} yr^{-1}	Conner et al. (1981) [140]
	2014	Aboveground	Field	Inundation	118-240	g m^{-2} yr^{-1}	Conner et al. (2014) [134]
Panicum virgatum	2013	Aboveground	Field	Hydrology	872	g m^{-2} yr^{-1}	Day et al. (2013) [84]
		Belowground		Hydrology	14,485	g m^{-2} yr^{-1}	Day et al. (2013) [84]
Vigna luteola	2013	Aboveground	Field	Hydrology	964	g m^{-2} yr^{-1}	Day et al. (2013) [84]
		Belowground		Hydrology	6,028	g m^{-2} yr^{-1}	Day et al. (2013) [84]

*Pot dimensions: 0.1 m^2 surface area x 0.4 m depth= 24.8 L.

Table S4. Major findings for plant species with the highest frequency of aboveground and belowground (biomass and productivity) studies (see **Figure 6**).

Species	Finding
Sagittaria latifolia	One of the three most studied species in coastal Louisiana (Figure 4); first biomass study was in 1995; there are no productivity studies (above and belowground) for this species before 2015; the first belowground biomass study was conducted in 1999
Spartina alterniflora	The first belowground biomass study was performed in 1978, but there are major temporal gaps from 1978 to 1995 and from 1995 to 2008; there is also lack of studies on aboveground productivity from 1978 to 2005 More than 95% of the productivity studies have been performed in the field, in contrast with one study in each greenhouse and mesocosm settings
Spartina patens	First belowground biomass study occurred in 1993 followed by the last one in 2007; there is a major temporal gap in productivity studies for this species from 1980 to 2013
Panicum hemitomon	The first study assessing belowground biomass in *Panicum hemitomon* dominated wetlands was performed in 2004, although no productivity studies were observed in our literature search
Alternanthera philoxeroides	There are no belowground biomass or productivity studies for this wetland species
Polygonum punctatum	No belowground biomass studies were identified
Scirpus americanus	Most of the biomass assessments for *S. americanus* occurred in the period from 1997 to 1999 and no data set are available for belowground biomass; there is only one productivity study in 2013
Distichlis spicata	Last productivity study occurred in 1980 while belowground biomass studies were registered only in 2006 and 2010
Leersia oryzoides	There were no studies reporting belowground biomass data
Panicum virgatum	There are no belowground biomass studies; the only available aboveground biomass data was obtained between 1995 and 1998
Sacciolepis striata	The first above ground biomass study was published in 1995; there are no belowground biomass studies for this wetland species
Spartina cynosuroides	The last aboveground biomass study was published in 1995
Juncus roemerianus	There are no biomass studies from 1988 to 2012
Fraxnius sp.	No productivity studies were registered during 1981-2014; no belowground productivity estimates
Nyssa aquatica	No productivity studies were registered during 1981-2014; no belowground productivity estimates
Sagittaria falcata	The last aboveground productivity study was in 1980; there is no information for both belowground biomass and productivity

Spartina cynosuroides	The last productivity study (only aboveground) occurred in 1980
Taxodium distichum	There are only aboveground productivity studies encompassing 1981-2014; no belowground information is available
Quercus sp.	Last aboveground productivity study was published in 2014
Acer rubrum	Last aboveground productivity study was published in 2014
Panicum virgatum	One productivity (aboveground and belowground) study was reported in 2013
Phragmites communis	Last productivity (only aboveground) study was performed in 1978
Tridica sp	One aboveground productivity study was published in 2014
Vigna luteola	The only productivity (aboveground and belowground) study was published in 2013