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Measuring rates of present-day relative sea-level rise in low-elevation coastal zones: a critical evaluation

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Table S1. Information on 131 tide gauges in coastal Louisiana. Note that several tide gauges have no published benchmarks; in this case, the benchmark setting type and foundation depth are left blank. Other tide gauges have benchmarks with unknown foundations depths. Unknown foundation depth should not be interpreted as foundation depth = 0.

Tide Gauge Name	Station Number	Agency	Website	Latitude (°N)	Longitude (°E)	Record start date	Record end date	Years active	Number of published benchmarks	Benchmark setting type(s)	Benchmark foundation depths (m)	Depth of deepest known benchmark foundation (m)	Depth of shallowest known benchmark foundation (m)	Depth of primary benchmark foundation (m)	Depth to Pleistocene surface (m)	Minimum benchmark foundation height above Pleistocene surface (m)
Amerada Pass	8764227	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8764227	29.4500	-91.3383	11/1/2005	10/22/2018	12.97	9	steel rod, concrete foundation	23, 23, 23, 23, 27.4, 27.4, 27.4	27.4	23	23	21	Set in Pleistocene
Bay Gardene	8761108	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761108	29.5983	-89.6183	10/16/1980	7/12/1988	7.74	5	steel rod	19.5, 19.5, 19.5, 19.5, 23.2	23.2	19.5	19.5	43	20
Bay Rambo, Texaco Dock	8761962	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761962	29.3617	-90.1400	10/29/1986	2/8/1988	1.28	5	steel rod	24.4, 24.4, 24.4, 24.4, 24.4	24.4	24.4	24.4	54	30
Bayou St. Denis, M.V. Petroleum Dock	8761799	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761799	29.4967	-90.0250	7/17/1985	9/4/1986	1.13	5	steel rod	19.5, 21.9, 20.7, 23.2, 21.9	23.2	19.5	19.5	44	21
Billet Bay	8761414	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761414	29.3717	-89.7517	7/20/1985	11/4/1986	1.29	5	steel rod	20.7, 21.9, 21.9, 21.9, 20.7	21.9	20.7	20.7	52	30
Breton Island	8760595	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760595	29.4933	-89.1733	3/17/1980	11/1/1980	0.63	6	steel rod, concrete monument	15.2, 16.8, 18.3	18.3	15.2	15.2	70	52
Calcasieu Pass	8768094	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8768094	29.7683	-93.3433	8/11/2002	10/22/2018	16.20	5	steel rod, concrete fishing pier, large boulder, davit plate	25, 24	25	24	25	18	Set in Pleistocene
Caminada Pass	8761826	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761826	29.2100	-90.0400	10/27/1986	2/2/1988	1.27	6	steel rod, retaining wall	21.9, 15.8, 18.3, 18.3, 17.1	21.9	15.8	unknown (concrete retaining wall)	55	33
Chef Menteur Pass	8761487	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761487	30.0650	-89.8000	11/25/1982	1/2/1991	8.10	6	steel rod, concrete bridge	23.1, 9.1, 33.5, 35.1, 21.9	35.1	9.1	23	13	Set in Pleistocene
Cocodrie	8762928	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762928	29.2450	-90.6617	1/1/1997	1/1/2000	3.00	0							
Comfort Island	8760742	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760742	29.8233	-89.2700	3/16/1980	3/3/1982	1.96	5	steel rod	16.8, 16.8, 16.8, 16.8, 16.8	16.8	16.8	16.8	38	21
Cypremort Point	8765251	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8765251	29.7133	-91.8800	8/8/2005	11/11/2010	5.26	5	steel rod, unspecified pipe/rod, seawall	15.7, 19.4	19.4	15.7	unknown (unspecified rod length)	10	Set in Pleistocene
Deer Island	8764101	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8764101	29.4733	-91.2667	3/18/1978	11/24/1978	0.69	0							
Devon Energy Facility, Pass A Loutre	8760417	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760417	29.2000	-89.0400	4/4/2008	2/10/2009	0.85	5	concrete support beam	unknown	unknown	unknown	unknown (concrete support beam)		
East Bay, Shell Oil	8760781	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760781	29.0533	-89.3050	1/8/1985	2/20/1986	1.12	6	steel rod, concrete platform, concrete pier, concrete foundation	14.6	14.6	14.6	unknown (concrete platform)	106	91
East Isle Dernieres, Lake Pelto	8762888	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762888	29.0717	-90.6400	10/30/1986	9/9/1993	6.86	0							
East Timbalier Island	8762223	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762223#tides	29.0767	-90.2850	10/28/1986	1/6/1988	1.19	5	steel rod	20.7, 21.9, 23.9, 28.8, 21.9	28.8	20.7	20.7	46	17
Empire, Doullut Canal	8761207	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761207	29.3750	-89.6017	7/23/1985	1/2/1991	5.45	0							
Equitable Petroleum Dock, Turtle Bay	8761959	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761959	29.5200	-90.1383	10/29/1986	6/13/1987	0.62	0							
Eugene Island	8764311	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8764311	29.3717	-91.3850	6/1/1939	8/16/2005	66.21	0							
Eugene Island, North of	8764314	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8764314	29.3667	-91.3833	11/15/2014	10/22/2018	3.93	0							

Fourchon (LUMCON)	8762079	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762079	29.1133	-90.1850	10/10/1986	6/6/1988	1.66	0								
Freshwater Canal Locks	8766072	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8766072	29.5517	-92.3050	8/3/2005	10/22/2018	13.22	4	steel rod, concrete structure, brass bolt set in support wall	15.3, 17.1	17.1	15.3	unknown (cement structure)	15	Set in Pleistocene
Grand Isle	8761720	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761720	29.2550	-89.9683	8/2/1947	5/14/1980	32.78	0								
Grand Isle	8761724	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761724	29.2633	-89.9567	11/9/1979	10/22/2018	38.95	5	steel rod, concrete seawall, concrete bulkhead	18.3, 19.8	19.8	18.3	unknown (concrete seawall)	57	37
Grand Pass	8760668	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760668	30.1267	-89.2217	12/10/1980	4/3/1996	15.31	5	steel rod	18.3, 16.8, 19.8, 18.3, 23.2	23.2	16.8	18.3	15	Set in Pleistocene
Greens Ditch	8761426	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761426	30.1117	-89.7600	11/25/1982	10/20/1983	0.90	6	steel rod, concrete monument	18.3, 19.5, 19.5, 21.9, 20.7	21.9	18.3	18.3	8	Set in Pleistocene
Hackberry Bay, Texaco Dock	8761819	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761819	29.4017	-90.0383	10/28/1986	11/13/1987	1.04	5	steel rod	25.6, 29.3, 30.5, 24.4, 28.0	30.5	24.4	25.6	52	22
I-10 Bonnet Carre Floodway	8762483	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762483	30.0683	-90.3900	4/8/2015	10/22/2018	3.54	0								
Lafitte, Barataria Waterway	8761899	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761899	29.6667	-90.1117	6/29/1985	1/2/1991	5.51	7	steel rod, concrete foundation, concrete post	24.4, 18.3, 19.5, 30.5	30.5	18.3	unknown (concrete foundation)	37	7
Lake Judge Perez, Hermitage Bayou	8761602	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761602	29.5583	-89.8833	6/29/1985	10/1/1986	1.26	7	steel rod	20.7, 24.4, 4.9, 23.2, 21.9	24.4	4.9	20.7	39	15
Leeville, Bayou Lafourche	8762084	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762084	29.2483	-90.2117	11/1/1986	1/8/1991	4.19	10	steel rod, concrete monument	18, 20, 24, 20, 20, 28, 5	28	5	18	57	29
Marsh Island, Atchafalaya Bay	8765026	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8765026	29.4850	-91.7633	6/1/1960	10/27/1978	18.40	0								
Martello Castle	8761529	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761529	29.9450	-89.8350	12/6/2006	6/6/2007	0.50	4	steel rod, concrete monument	18.90, 19.51	19.51	18.90	unknown (rough poured concrete)	19	Set in Pleistocene
Mendicant Island	8761742	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761742	29.3183	-89.9800	7/19/1985	9/4/1986	1.13	5	steel rod	24.4, 24.4, 21.9, 23.2, 20.7	24.4	20.7	24.4	55	31
North Pass	8760412	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760412	29.2050	-89.0367	3/20/1980	11/1/1980	0.62	5	steel rod	15.2, 15.2, 15.2, 15.2, 15.2	15.2	15.2	15.2	142	127
Olga Compressor Station	8760889	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760889	29.3867	-89.3800	7/12/1985	2/1/2009	23.56	5	concrete platform	unknown	unknown	unknown	unknown (compressor platform)		
Pass Manchac	8762273	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762273	30.2967	-90.3117	11/23/1982	6/7/1988	5.54	4	steel rod	19.5, 20.7, 19.5, 19.5	20.7	19.5	19.5	15	Set in Pleistocene
Pelican Island, Chevron Station	8761198	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761198	29.2667	-89.5983	7/9/1985	9/3/1986	1.15	5	steel rod	20.7, 21.9, 19.5, 19.5, 19.5	21.9	19.5	20.7	64	42
Pilots Station East	8760922	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760922	28.9317	-89.4067	3/8/2004	10/22/2018	14.62	0								
Pilottown	8760721	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760721	29.1783	-89.2583	12/19/1980	10/22/2018	37.84	5	steel rod, concrete walkway, concrete helipad	32.0, 20	32	32.0	32	88	56
Point au Fer	8764256	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8764256	29.3333	-91.3533	6/1/1960	11/17/1978	18.46	0								
Point Barre, Humble Canal	8762731	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762731	29.4283	-90.5567	10/25/1986	11/3/1987	1.02	0								
Pointe au Chien, Cut Off Canal	8762525	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762525	29.4167	-90.4467	4/30/1987	8/2/1988	1.26	0								
Pointe au Chien, St. Louis Canal	8762571	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762571	29.4567	-90.4717	10/7/1986	3/2/1988	1.40	0								
Port Fourchon, Belle Pass	8762075	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762075	29.1133	-90.1983	7/19/2003	10/22/2018	15.26	0								

Racoon Point, Isle Dernieres	8763506	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8763506	29.0633	-90.9617	2/1/1979	5/10/1979	0.27	0							
The Rigolets	8761402	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761402	30.1667	-89.7367	12/4/1980	11/22/2014	33.97	5	concrete pad, concrete monument, concrete bridge abutment, concrete stair	unknown	unknown	unknown	unknown (concrete pad)		
Salt Point	8764632	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8764632	29.5733	-91.5367	5/15/1978	7/11/1978	0.16	0							
Shell Beach	8761305	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761305	29.8683	-89.6733	11/7/1979	10/22/2018	38.96	11	steel rod, concrete foundation, raised platform, davit plate	27.4, 27.4, 27.4, 27.4, 27.4, 27.4, 27.4, 27.4	27.4	27.4	27.4	27	Set in Pleistocene
Shell Island, Atchafalaya Bay	8764165	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8764165	29.4733	-91.3050	6/1/1960	6/1/1961	1.00	0							
South Pass	8760550	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760550	28.9917	-89.1400	3/8/1981	10/15/1984	3.61	0							
South Pass	8760551	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760551	28.9900	-89.1400	11/8/1977	9/26/2000	22.88	0							
Southwest Pass	8760943	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8760943	28.9250	-89.4183	5/27/1996	3/8/2004	7.78	4	steel rod	24.4, 24.4, 24.4, 24.4	24.4	24.4	24.4	109	85
St. Mary's Point	8761679	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761679	29.4317	-89.9383	7/18/1985	1/6/1987	1.47	5	steel rod	19.5, 20.7, 20.7, 23.2, 24.4	24.4	19.5	19.5	50	26
Superior Oil, Four Island Bayou	8763153	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8763153	29.2350	-90.7800	10/30/1986	11/19/1987	1.05	0							
Texaco Gas Platform, Caillou Bay	8763535	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8763535	29.1750	-90.9767	10/11/2008	12/18/2012	4.19	5	concrete platform, concrete pier	unknown	unknown	unknown	unknown (concrete platform)		
Texaco TB#3, Bayou Petit Caillou	8762938	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762938	29.1867	-90.6667	10/22/1986	4/7/1988	1.46	0							
Timbalier Island	8762582	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8762582	29.0667	-90.4767	10/29/1986	3/1/1988	1.34	0							
Vicinity of UNO Chef Menteur	8761385	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8761385	30.0683	-89.8017	9/26/2014	11/21/2014	0.15	5	concrete bridge abutment, concrete seawall cap, concrete monument	unknown	unknown	unknown	unknown (bridge abutment wing wall)		
Wax Lake Outlet	8764361	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8764361	29.5733	-91.4200	4/4/1978	11/24/1978	0.64	0							
Weeks Bay	8765148	NOAA	https://tidesandcurrents.noaa.gov/stationhome.html?id=8765148	29.8367	-91.8367	8/19/2001	9/19/2001	0.08	3	steel rod	12.8, 14.30	14.3	12.8	unknown (unspecified rod length)	5	Set in Pleistocene
Mermentau River at Grand Chenieer *(sic)*	70900	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=70900&fid=&dt=S	29.7704	-93.0135	2/24/2012	10/22/2018	6.66	at least 1	steel rod	1.5	1.5	1.5	unknown (primary benchmark not specified)	6	5
Barataria Waterway at Lafitte	82875	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=82875&fid=&dt=S	29.6694	-90.1106	2/18/2003	10/22/2018	15.67	at least 2	steel rod	7.4	7.4	7.4	unknown (primary benchmark not specified)	36	29
Bayou Petit Caillou at Cocodrie	76305	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76305&fid=&dt=S	29.2543	-90.6635	3/5/1969	12/31/2014	45.82	at least 1	steel rod	24.4	24.4	24.4	unknown (primary benchmark not specified)	57	33
East Cote Blanche Bay at Luke's Landing	88800	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=88800&fid=&dt=S	-91.5400	-91.5400	2/22/1957	10/2/2002	45.61	0							
Crewboat Channel at Wax Lake Outlet near Calumet	03830	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=03830&fid=&dt=S&pcode=HG	29.5400	-91.4356	4/14/1973	10/22/2018	45.52	0							

Avoca Island Cutoff south of Morgan City	03820	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=03820&fid=&dt=S&pcode=HG	29.5333	-91.2494	2/29/1956	3/12/2015	59.03	at least 1	regular concrete	unknown	unknown	unknown	unknown (primary benchmark not specified)		
Golden Meadow Floodgate (North)	82250	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=82250&fid=&dt=S&pcode=HG	29.3442	-90.2464	3/16/2004	5/8/2014	10.14	at least 1	concrete headwall	unknown	unknown	unknown	unknown (primary benchmark not specified)		
Golden Meadow Floodgate (South)	82260	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=82260&fid=&dt=S&pcode=HG	29.3425	-90.2464	3/16/2004	5/8/2014	10.14	at least 1	concrete headwall	unknown	unknown	unknown	unknown (primary benchmark not specified)		
Bayou Des Allemands at Des Allemands	82700	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=82700&fid=&dt=S&pcode=HG	29.8239	-90.4767	5/22/2009	10/22/2018	9.42	at least 1	concrete monument	unknown	unknown	unknown	unknown (primary benchmark not specified)		
Mississippi River South Pass at Port Eads	01850	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01850&fid=&dt=S	28.9323	-89.4071	1/1/1950	7/7/2015	65.51	at least 2	steel rod	0.9	0.9	0.9	unknown (primary benchmark not specified)	128	127
Lake Pontchartrain at Frenier	85550	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85550&fid=&dt=S&pcode=HG	30.1061	-90.4214	1/26/1950	6/4/2005	55.35	0							
Calcasieu River and Pass near Cameron	73650	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=73650&fid=&dt=S	29.7758	-93.3479	1/1/1955	8/14/2005	50.62	unknown	unknown	unknown	unknown	unknown	unknown		
Freshwater Canal at Freshwater Bayou Lock - North	76592	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76592&fid=&dt=S	29.5547	-92.3046	3/15/2004	10/22/2018	14.60	unknown	unknown	unknown	unknown	unknown	unknown		
Freshwater Canal at Freshwater Bayou Lock - South	76593	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76593&fid=&dt=S	29.5524	-92.3050	7/28/1968	10/21/2012	44.23	unknown	unknown	unknown	unknown	unknown	unknown		
Schooner Bayou Control Structure - West	76680	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76680&fid=&dt=S	29.7578	-92.2642	1/1/1961	1/27/2015	54.07	unknown	unknown	unknown	unknown	unknown	unknown		
Schooner Bayou Control Structure - East	76600	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76600&fid=&dt=S	29.7578	-92.2638	1/1/1955	5/21/2014	59.38	unknown	unknown	unknown	unknown	unknown	unknown		
IWW at Leland Bowman Lock - West	76800	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76800&fid=&dt=S	29.7870	-92.2093	1/1/1951	7/7/2013	62.51	unknown	unknown	unknown	unknown	unknown	unknown		
IWW at Leland Bowman Lock - East	76720	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76720&fid=&dt=S	29.7852	-92.2041	1/1/1959	11/18/2014	55.88	unknown	unknown	unknown	unknown	unknown	unknown		
Atchafalaya Bay at Eugene Island	88600	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=88600&fid=&dt=S	29.3791	-91.3818	9/30/2008	10/22/2018	10.06	unknown	unknown	unknown	unknown	unknown	unknown		
Mississippi River at Venice	01480	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01480&fid=&dt=S	29.2758	-89.3528	1/15/1953	12/31/2014	61.96	unknown	unknown	unknown	unknown	unknown	unknown		
Mississippi River at West Bay	01515	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01515&fid=&dt=S	29.2401	-89.2984	2/20/2009	10/22/2018	9.67	unknown	unknown	unknown	unknown	unknown	unknown		
West Bay Receiving Area - Outflow	01516	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01516&fid=&dt=S	29.2192	-89.3151	8/14/2008	10/22/2018	10.19	unknown	unknown	unknown	unknown	unknown	unknown		

Mississippi River at Head of Passes	01545	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01545&fid=&dt=S	29.1338	-89.2465	4/11/2008	10/22/2018	10.53	unknown	unknown	unknown	unknown	unknown	unknown
Mississippi River Southwest Pass Mile 7.5 BHP	01575	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01575&fid=&dt=S	29.0564	-89.3086	12/3/2010	10/22/2018	7.89	unknown	unknown	unknown	unknown	unknown	unknown
Mississippi River Southwest Pass at East Jetty	01670	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01670&fid=&dt=S	28.9323	-89.4071	1/1/1953	7/7/2015	62.51	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Dupre Sector Gate - West/Protected Side	76005	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76005&fid=&dt=S	29.9346	-89.8372	4/29/2008	10/22/2018	10.48	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Dupre Sector Gate - East/Flood Side	76010	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76010&fid=&dt=S	29.9352	-89.8366	4/29/2008	10/22/2018	10.48	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Bienvenue Floodgate - West/Protected Side	76024	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76024&fid=&dt=S	29.9978	-89.9165	4/29/2008	10/22/2018	10.48	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Bienvenue Floodgate - East/Flood Side	76025	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76025&fid=&dt=S	29.9987	-89.9153	1/1/2007	10/22/2018	11.81	unknown	unknown	unknown	unknown	unknown	unknown
IHNC Surge Barrier West / Protected Side	76032	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76032&fid=&dt=S	30.0124	-89.9006	2/17/2010	10/22/2018	8.68	unknown	unknown	unknown	unknown	unknown	unknown
IHNC Surge Barrier East / Flood Side	76030	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76030&fid=&dt=S	30.0124	-89.9005	10/15/2010	10/22/2018	8.02	unknown	unknown	unknown	unknown	unknown	unknown
Chef Menteur Pass nr Lake Borgne	85750	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85750&fid=&dt=S	30.0667	-89.8010	10/9/2007	10/22/2018	11.04	unknown	unknown	unknown	unknown	unknown	unknown
Rigolets near Lake Pontchartrain	85700	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85700&fid=&dt=S	30.1634	-89.7379	1/1/1950	8/6/2001	51.59	unknown	unknown	unknown	unknown	unknown	unknown
Lake Pontchartrain at Mandeville	85575	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85575&fid=&dt=S	30.3658	-90.0923	8/2/1957	7/26/2002	44.98	unknown	unknown	unknown	unknown	unknown	unknown
Lake Pontchartrain at Lakefront Airport	85670	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85670&fid=&dt=S	30.0399	-90.0188	1/1/2007	10/22/2018	11.81	unknown	unknown	unknown	unknown	unknown	unknown
Seabrook Floodgate Closure Structure - Lake Side	76065	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76065&fid=&dt=S	30.0304	-90.0347	7/19/2012	10/22/2018	6.26	unknown	unknown	unknown	unknown	unknown	unknown
Seabrook Floodgate Closure Structure - IHNC Side	76062	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76062&fid=&dt=S	30.0302	-90.0346	7/19/2012	10/22/2018	6.26	unknown	unknown	unknown	unknown	unknown	unknown
Seabrook Bridge - Inner Harbor Nav Canal	76060	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76060&fid=&dt=S	30.0242	-90.0313	5/21/2010	10/22/2018	8.42	unknown	unknown	unknown	unknown	unknown	unknown
Bayou St John at Lake Pontchartrain	85634	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85634&fid=&dt=S	30.0243	-90.0827	4/29/2011	10/22/2018	7.48	unknown	unknown	unknown	unknown	unknown	unknown
Lake Pontchartrain at West End	85625	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85625&fid=&dt=S	30.0222	-90.1156	3/10/1949	12/31/2014	65.81	unknown	unknown	unknown	unknown	unknown	unknown

Lake Pontchartrain at Bonnet Carre Spillway	85555	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85555&fid=&dt=S	30.0559	-90.3722	1/1/2007	5/20/2011	4.38	unknown	unknown	unknown	unknown	unknown	unknown
Pass Manchac near Pontchatoula	85420	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85420&fid=&dt=S	30.2814	-90.4003	4/17/2009	10/22/2018	9.51	unknown	unknown	unknown	unknown	unknown	unknown
Catfish Point Control Structure - North	70675	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=70675&fid=&dt=S	29.8636	-92.8484	1/1/1955	3/12/2015	60.19	unknown	unknown	unknown	unknown	unknown	unknown
Catfish Point Control Structure - South	70750	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=70750&fid=&dt=S	29.8629	-92.8492	1/1/1955	3/12/2015	60.19	unknown	unknown	unknown	unknown	unknown	unknown
Inner Harbor Navigation Canal (IHNC Lock) New Orleans	76160	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76160&fid=&dt=S	29.9665	-90.0268	1/1/1945	3/12/2015	70.19	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Boeuf Lock - East	76360	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76360&fid=&dt=S	29.6830	-91.1711	9/8/1954	3/12/2015	60.51	unknown	unknown	unknown	unknown	unknown	unknown
IWW at Calcasieu Lock - West	76960	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76960&fid=&dt=S	30.0887	-93.2949	1/1/1951	8/27/2014	63.65	unknown	unknown	unknown	unknown	unknown	unknown
Mississippi River at New Orleans (Carrollton)	01300	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01300&fid=&dt=S	29.9347	-90.1361	1/1/1950	1/1/2015	65.00	unknown	unknown	unknown	unknown	unknown	unknown
Mississippi River at IHNC Lock	01340	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01340&fid=&dt=S	29.9644	-90.0274	1/1/1945	1/27/2015	70.07	unknown	unknown	unknown	unknown	unknown	unknown
Mississippi River at West Pointe a la Hache	01400	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=01400&fid=&dt=S	29.5711	-89.7969	1/1/1950	12/31/2014	65.00	unknown	unknown	unknown	unknown	unknown	unknown
Calcasieu River & Pass at Lake Charles	73550	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=73550&fid=&dt=S	30.2131	-93.2569	1/1/1950	7/7/2003	53.51	unknown	unknown	unknown	unknown	unknown	unknown
GIWW at Houma	76320	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=76320&fid=&dt=S	29.5981	-90.7100	1/1/1959	11/17/2008	49.88	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Lafourche at Leeville	82350	USACE		29.2478	-90.2089	11/4/1955	4/8/2000	44.43	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Barataria at Barataria	82750	USACE		29.7414	-90.1322	1/6/1950	11/12/1992	42.85	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Terre Aux Boeufs at Delacroix, La.	85780	USACE	http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=85780&fid=&dt=S	29.7639	-89.7922	5/15/1975	8/28/2005	30.29	unknown	unknown	unknown	unknown	unknown	unknown
MRGO at Shell Beach	85800	USACE		29.8500	-89.6833	6/30/1961	12/16/2002	41.46	unknown	unknown	unknown	unknown	unknown	unknown
Calcasieu River	08017118	USGS	http://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=08017118&agency_cd=USGS	29.8156	-93.3489	10/1/2007	10/22/2018	11.06	unknown	unknown	unknown	unknown	unknown	unknown
Caillou Bay	073813498	USGS	http://waterdata.usgs.gov/la/nwis/uv/?site_no=073813498&agency_cd=USGS	29.0781	-90.8714	10/1/2007	10/22/2018	11.06	unknown	unknown	unknown	unknown	unknown	unknown
Black Bay	073745275	USGS	http://waterdata.usgs.gov/nwis/uv/?site_no=073745275&agency_cd=USGS	29.5693	-89.5122	5/21/2014	10/22/2018	4.42	unknown	unknown	unknown	unknown	unknown	unknown
Crooked Bayou	073745257	USGS	http://waterdata.usgs.gov/nwis/uv/?site_no=073745257&agency_cd=USGS	29.7081	-89.7194	10/1/2007	10/22/2018	11.06	unknown	unknown	unknown	unknown	unknown	unknown

Cow Bayou at American Bay	073745258	USGS	http://waterdata.usgs.gov/nwis/inventory/?site_no=073745258	29.5706	-89.7039	1/28/1999	10/22/2018	19.73	unknown	unknown	unknown	unknown	unknown	unknown
Barataria Pass at Grand Isle	073802516	USGS	http://waterdata.usgs.gov/nwis/uv/?site_no=073802516&agency_cd=USGS	29.2728	-89.9468	10/1/2008	10/22/2018	10.06	at least 1	concrete retaining wall	unknown	unknown	unknown	unknown (primary benchmark not specified)
Mouth of Atchafalaya River	073816525	USGS	http://waterdata.usgs.gov/nwis/uv/?site_no=073816525&agency_cd=USGS	29.4303	-91.3339	5/21/2015	10/22/2018	3.42	unknown	unknown	unknown	unknown	unknown	unknown
Crewboat Channel at Wax Lake Outlet	073815925	USGS	http://waterdata.usgs.gov/nwis/inventory/?site_no=073815925&agency_cd=USGS	29.5400	-91.4356	10/1/2002	10/22/2018	16.06	unknown	unknown	unknown	unknown	unknown	unknown
Vermilion Bay	07387040	USGS	http://waterdata.usgs.gov/nwis/uv/?site_no=07387040&agency_cd=USGS	29.7131	-91.8803	10/23/1997	10/22/2018	21.00	unknown	unknown	unknown	unknown	unknown	unknown
Vermilion Bay	07387050	USGS	http://waterdata.usgs.gov/nwis/dv/?site_no=07387050&agency_cd=USGS&referred_module=sw	29.6744	-92.1356	10/1/1999	10/22/2018	19.06	unknown	unknown	unknown	unknown	unknown	unknown
Bayou Fearman Lower Atchafalaya River at Morgan City	07381600	USGS	http://waterdata.usgs.gov/nwis/uv/?site_no=07381600&agency_cd=USGS	29.6926	-91.2118	10/1/1992	9/30/2015	23.00	unknown	unknown	unknown	unknown	unknown	unknown
Calumet (Wax Lake Outlet)	07381590	USGS	http://waterdata.usgs.gov/nwis/uv/?site_no=07381590	29.6978	-91.3728	10/1/1995	9/30/2015	20.00	unknown	unknown	unknown	unknown	unknown	unknown
North Calcasieu Lake (Hackberry)	08017095	USGS	http://waterdata.usgs.gov/la/nwis/uv/?site_no=08017095&PARAmeter_cd=00065,72020,63160,00060	30.0317	-93.2994	7/26/1997	10/22/2018	21.24	unknown	unknown	unknown	unknown	unknown	unknown

Table S2. Information on 17 GNSS stations in coastal Louisiana.

GNSS station code	Latitude	Longitude	Foundation depth (m)	Depth to Pleistocene surface (m)	Benchmark foundation height above Pleistocene surface (m)
AWES	30.10	-90.98	1	29	28
BVHS	29.34	-89.41	>20	62	<42
CAMR	29.80	-93.33	unknown		
DSTR	29.96	-90.38	unknown		
ENG1	29.88	-89.94	~3	27	~24
ENG2	29.88	-89.94	~3	27	~24
FRAN	29.80	-91.53	14.7	10	Set in Pleistocene
FSHS	29.81	-91.50	1	15	14
GRIS	29.27	-89.96	unknown		
HOMA	29.57	-90.76	18.3	40	21.7
HOUM	29.59	-90.72	>15	40	<25
LAFR	29.79	-91.50	unknown		
LMCN	29.25	-90.66	36.5	57	20.5
LWES	29.90	-90.35	unknown		
MSSC	30.38	-89.61	unknown		
NDBC	30.36	-89.61	unknown		
VENI	29.28	-89.36	30.5	78	47.5