Part III.—WATERWAYS BETWEEN ST. JOHNS RIVER AND SAVANNAH RIVER

INTRODUCTION

The water area discussed under this heading comprises the network of navigable tidal rivers, sounds, and passages that stretches along the Atlantic coast of Georgia and northern Florida from the St. Johns River on the south to the Savannah River on the north, a distance of over 100 nautical miles. Inside the coast line the land area is separated into countless islands by these waterways. One hundred and forty nautical miles of the Intracoastal Waterway, a landlocked highway for small craft, winds through them. They receive the drainage water from numerous streams and discharge it into the ocean through 10 large passages and a number of smaller ones. The 10 major openings in the coast arranged in order from south to north are:

Nassau Sound.	Doboy Sound.
St. Marys Entrance.	Sapelo Sound.
St. Andrew Sound.	St. Catherines Sound.
St. Simon Sound.	Ossabaw Sound.
Altamaha Sound.	Wassaw Sound.

These openings are from 1 to 3 miles in width and, with the exception of Altamaha Sound, which is obstructed by shoals, they have navigable entrances from the sea. The least depths in the channels of these entrances vary from 6 feet in the entrance to Nassau Sound to 30 feet in St. Marys Entrance, the approach to Cumberland Sound and the port of Fernandina. In the entrance to St. Simon Sound, which forms the approach to the port of Brunswick, the least depth is 27 feet. Through all the entrances the tide wave of the Atlantic Ocean transmits its semidaily impulses to the waters within, maintaining in each of the numerous passages its ceaseless rhythm of flood and ebb.

The ocean tide in this locality advances in a direction approximately normal to the coast line, high water or low water occurring at about the same time in the entrances to all the sounds listed above. This time is, on the average, for the high water about 0.7 hour after the moon's transit of the Greenwich meridian, and for the low water, about 7.2 hours after the same transit. The rise and fall of the tide along the coast increases from St. Johns River entrance northward. At Nassau Sound it is about 5½ feet, and at the entrances in the northern half of the area under consideration it is about 7 feet.

Although the time of tide is approximately the same in the different entrances, the time of current differs considerably. In general, however, the strength of flood occurs between 2 and 4 hours before local high water and the strength of ebb has a similar time relation to low water.

The current velocities in the channels of the different entrances also differ somewhat. The mean velocity of the tidal current at strength is in every case between 1½ and 2½ knots, the average for all being very close to 2 knots.

In the waterways inside the entrances both the times and velocities of the currents are influenced by local hydrographic conditions. The times of the several current phases are in some cases earlier and in other cases later than those of the corresponding phases in the nearest

connecting passageways to the sea. These time differences are usually small, however, seldom if ever exceeding 1½ hours. The velocities inside are generally somewhat smaller than those in the entrances, the strengths of the tidal current having average velocities between 1 and 2 knots at most locations, and less than 1 knot at very few of the current stations.

OBSERVATIONS

At various times for nearly a century, current observations have been taken in the waterways between the St. Johns and Savannah Rivers. The observational records show that the early measurements consisted generally of brief series secured in localities that have since undergone extensive hydrographic changes. Consequently, as in the St. Johns River and Savannah River areas, it was decided to include in this volume only results of recent investigations. These comprise data for 2 current stations occupied by L. A. Potter in 1919, and 33 stations, by E. F. Hicks in 1934. Potter's stations were in the entrance and approach to Doboy Sound. Those of Hicks were distributed over the entire area, the locations being carefully selected in the more important navigable entrances and passages. The usual period of observations at each station was 2 days. Three stations in Wassaw Sound were each occupied for a period of 3 days. The observations of 1919 were taken at the surface only. At each of the 1934 stations they were taken at the surface and at several subsurface depths.

METHODS OF OBSERVING

The current pole and the Price current meter were used in making the measurements upon which the results given in this discussion are based. These devices and their use are described on page 17 of this volume. The observations of 1919 were taken by current pole only. In the current survey of 1934, surface observations of velocity and direction were made with the current pole, and subsurface measurements of velocity only were made with the Price current meter.

METHODS OF REDUCING THE OBSERVATIONS

The values taken from the observational records were plotted, tabulated, and reduced as described on page 18 for current station no. 1 in the St. Johns River. In the reductions the tide at Mayport, Fla., was used as a reference for stations southward of St. Andrew Sound. Those in and northward of St. Andrew Sound were referred to the tide at Tybee Light, Ga. For uniform presentation of the data, however, all the final time values have been referred to the tide at Tybee Light.

PRESENTATION OF THE RESULTS

DESIGNATION AND LOCATION OF STATIONS

Each current station in the waterways between the St. Johns River and the Savannah River has been given a designation which consists of two parts: First, a letter signifying the chief of the party that occupied the station, and second, the number which was originally assigned to the particular station of that party. The letter H forms the first part of the designation of each station occupied by E. F. Hicks in 1934, and the letter P, the first part of the designation of

each station occupied by L. A. Potter in 1919. The locations of the stations are indicated in figure 53 by small red circles together with the station designations.

EXPLANATION OF THE TABULAR DATA

Table 6 contains the results derived from current observations in the waterways between the St. Johns River and the Savannah River. The explanation given on page 33 for a similar table for the Savannah River applies to this table.

OBSERVED CURRENT CURVES

In figures 54 and 55 are reproduced a number of velocity curves plotted directly from pole observations taken at various locations in 1934. The explanation and general remarks for similar curves for

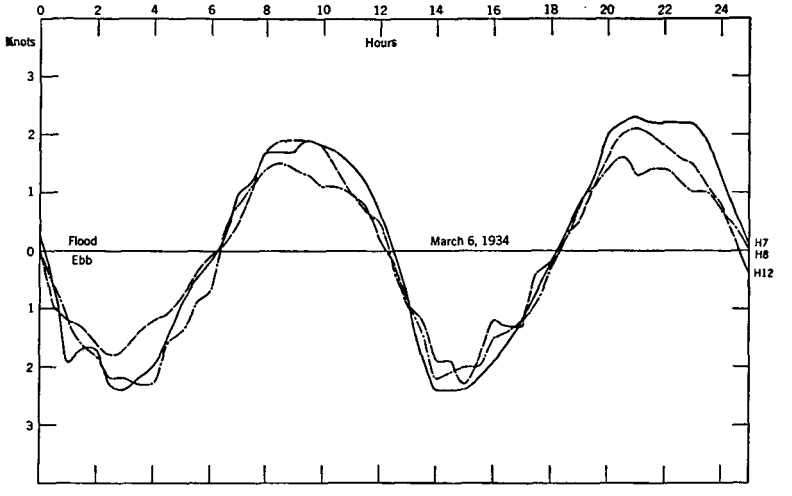

FIGURE 54.—Observed velocity curves, St. Marys Entrance, Cumberland Sound and St. Andrew Sound.

stations in the St. Johns River, given on page 21, apply to these curves. In figure 54 are shown simultaneous curves for stations H 7 in St. Marys entrance, H 8 in Cumberland Sound, and H 12 in the entrance to St. Andrew Sound. Considering the time relations between these stations as indicated by the curves, it is seen that the slack waters occur near the same time at all three stations. They are, however, slightly earlier at station H 8 than at station H 7 and earlier at station H 12 than at station H 8. The strength of flood, due to differences in the shapes of the flood portions of the curves, differs noticeably in time. This strength occurs first at station H 8, somewhat later at station H 12, and considerably later at station H 7. The strengths of ebb of the two cycles shown by the curves do not appear consistent in their time relations and it is probable that a temporary weather condition has modified one of the ebb strengths at one or more of the stations. The results of table 6 derived from all the observations indicate that times of ebb strength at stations H 7 and H 12 are about the same, the ebb strength at station H 8 being slightly later than at the other two stations. The curves also show that of the three stations the largest velocities occur at station H 7 and the smallest at station H 8.

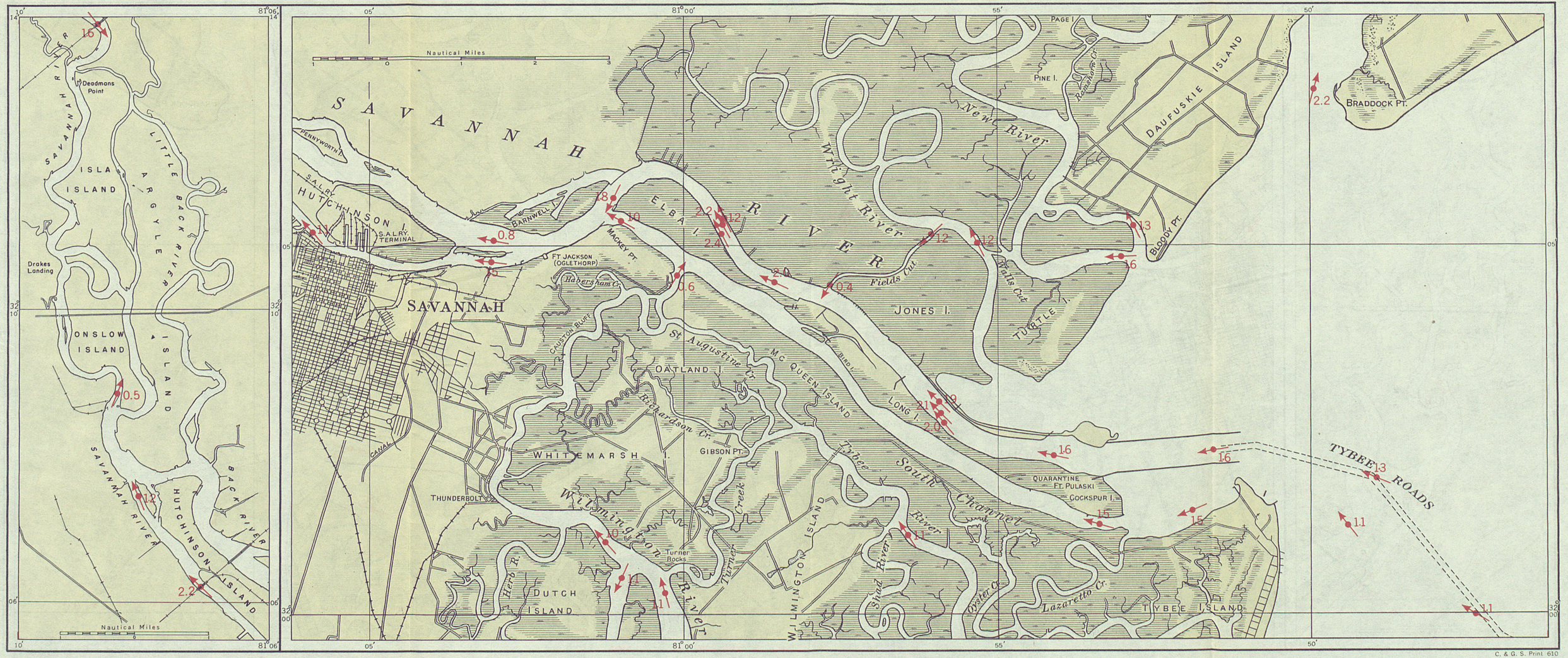

Fig. 41. Currents in Savannah River 2 hours before high water at Tybee Light.

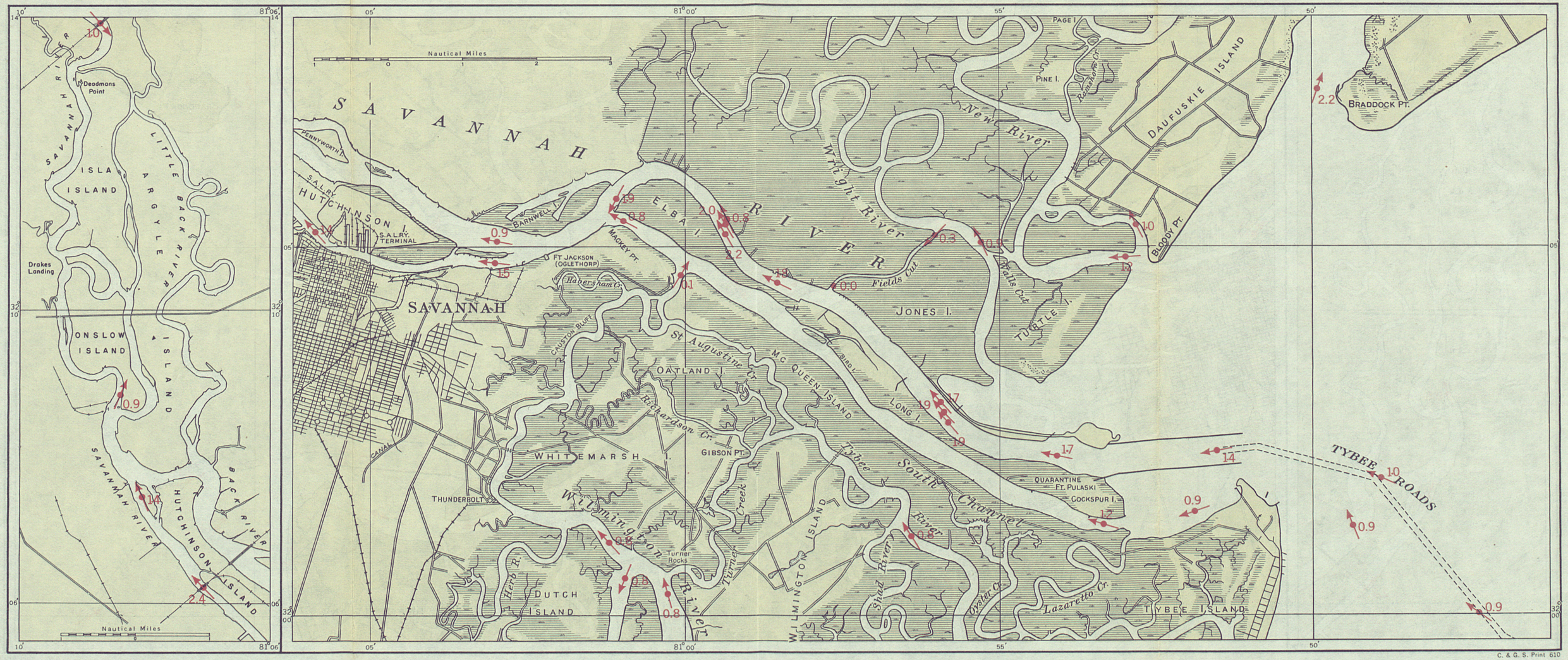

Fig. 42. Currents in Savannah River 1 hour before high water at Tybee Light.

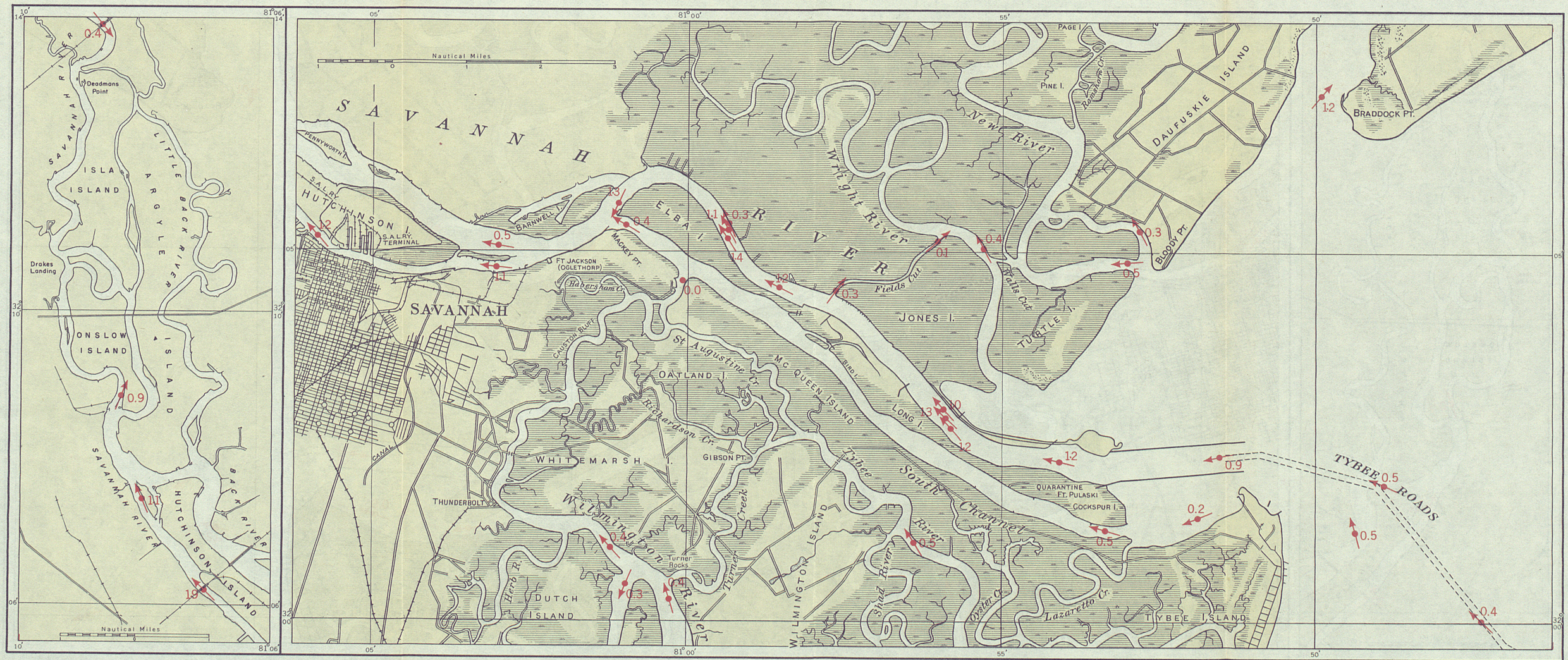

Fig. 43. Currents in Savannah River at time of high water at Tybee Light.

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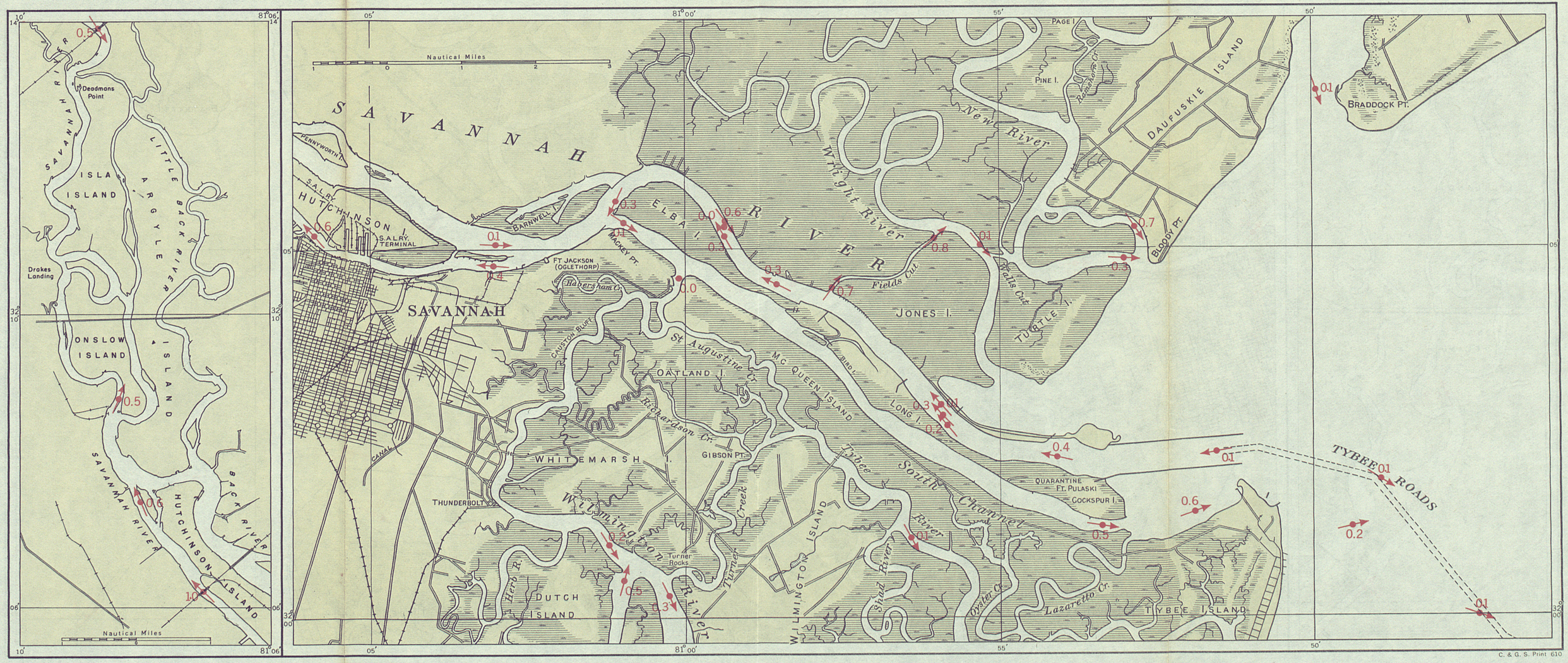

Fig. 44. Currents in Savannah River 1 hour after high water at Tybee Light.

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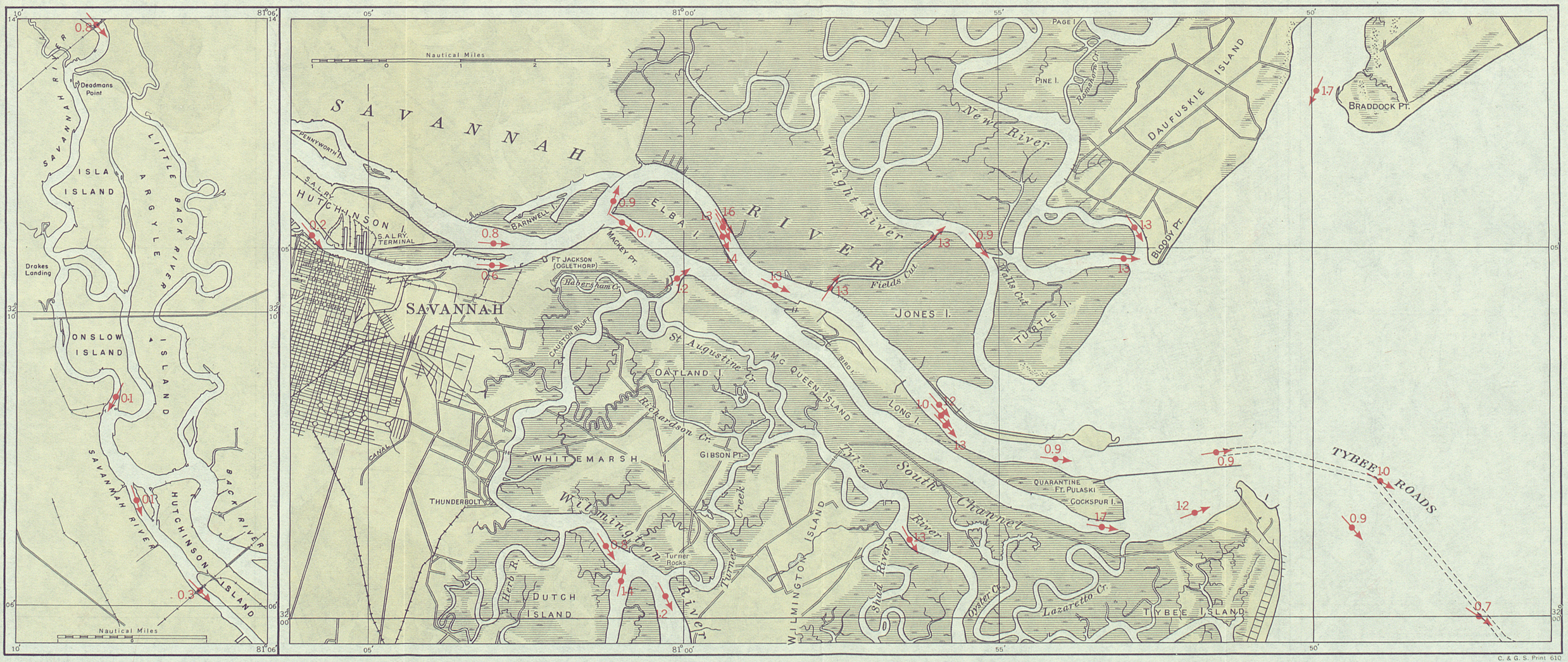

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Fig. 45. Currents in Savannah River 2 hours after high water at Tybee Light.

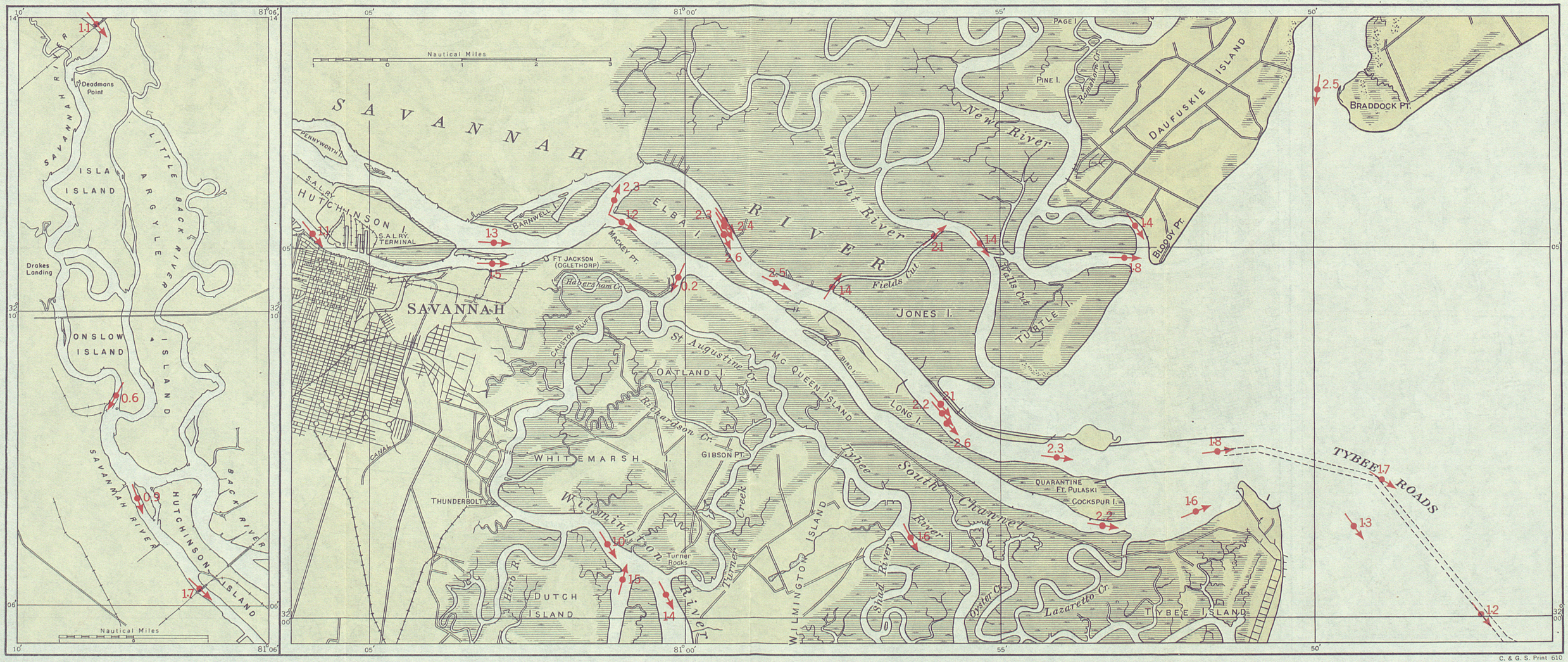

Fig. 46. Currents in Savannah River 3 hours after high water at Tybee Light.

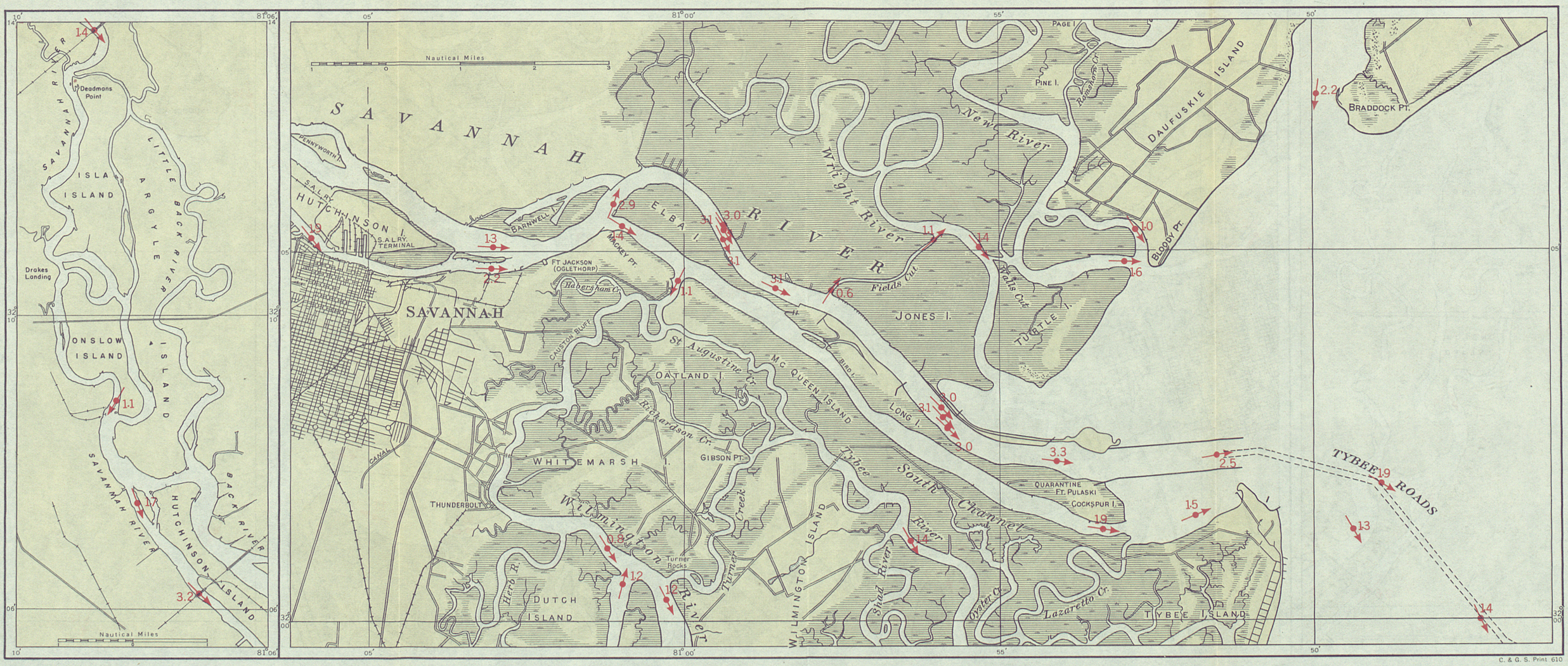

Fig. 47. Currents in Savannah River 2 hours before low water at Tybee Light.

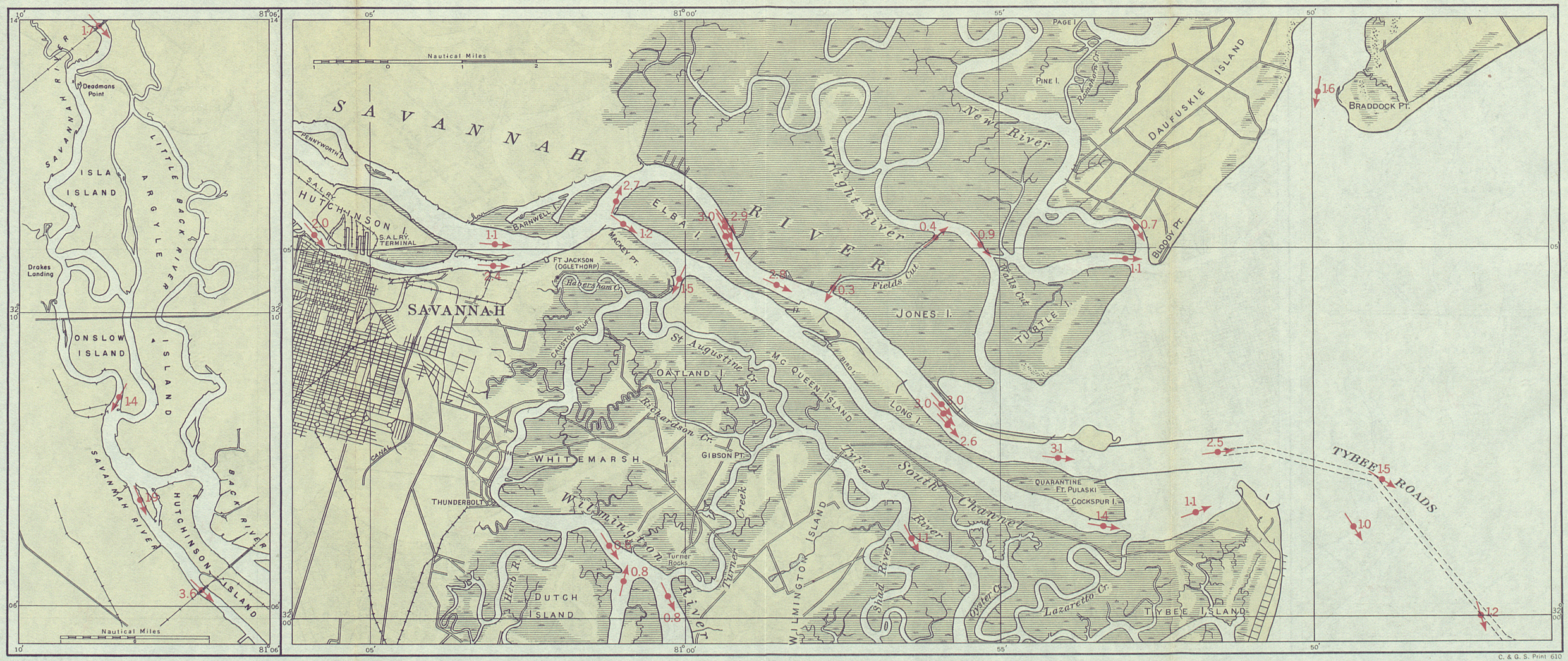

Fig. 48. Currents in Savannah River 1 hour before low water at Tybee Light.

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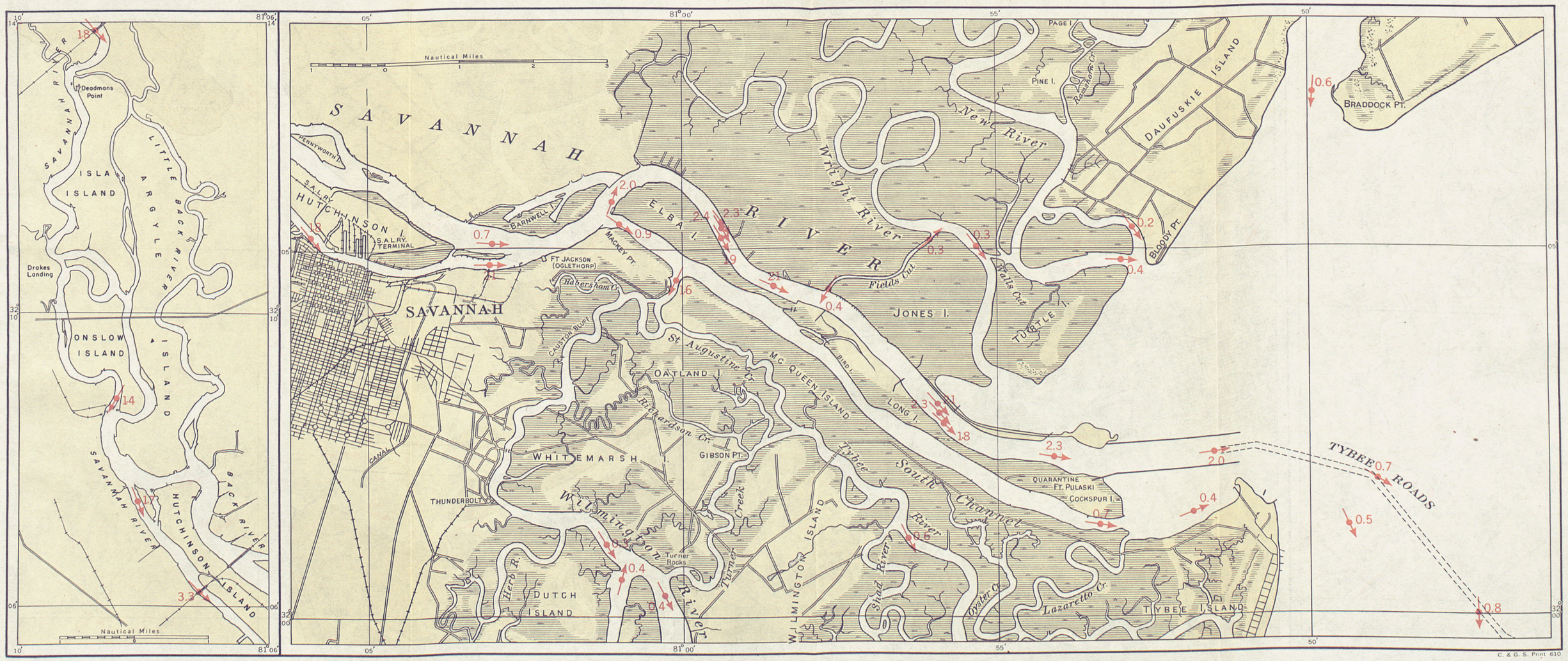

Fig. 49. Currents in Savannah River at time of low water at Tybee Light.

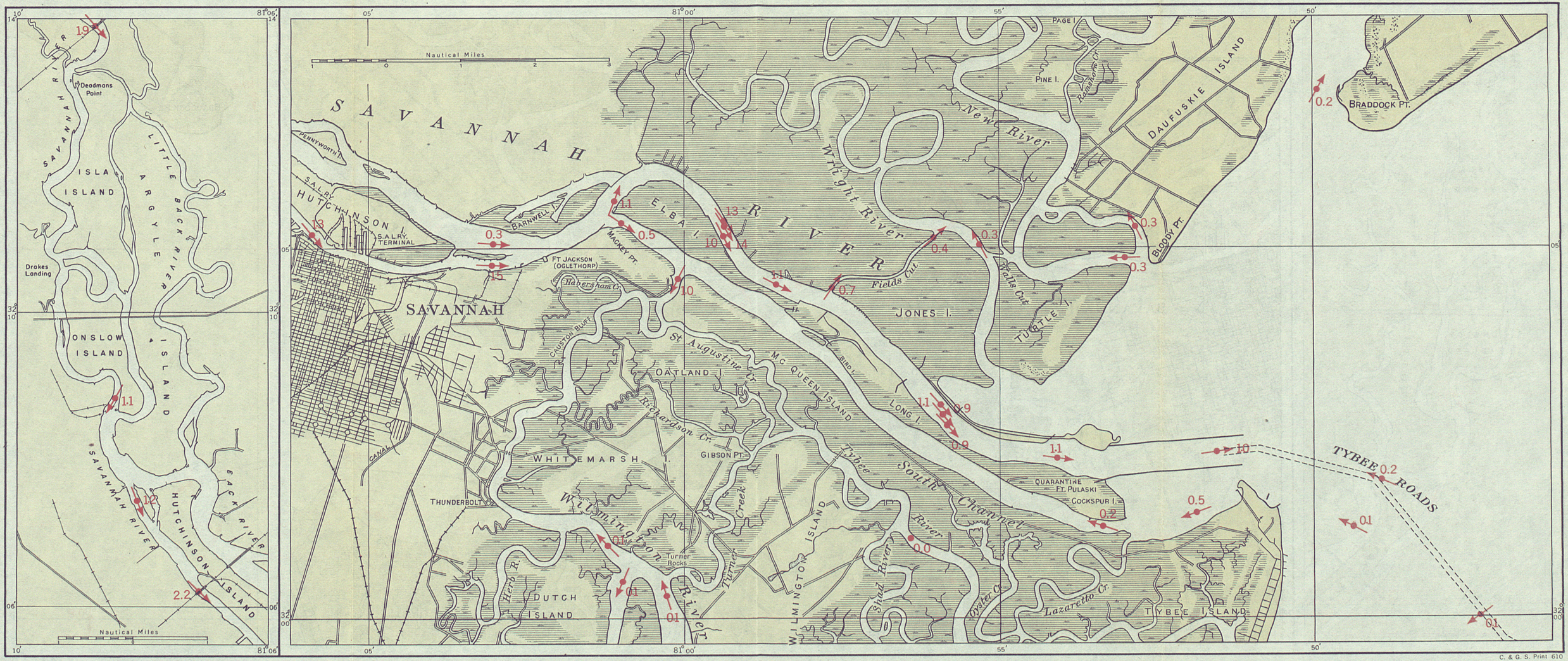

Fig. 50. Currents in Savannah River 1 hour after low water at Tybee Light.

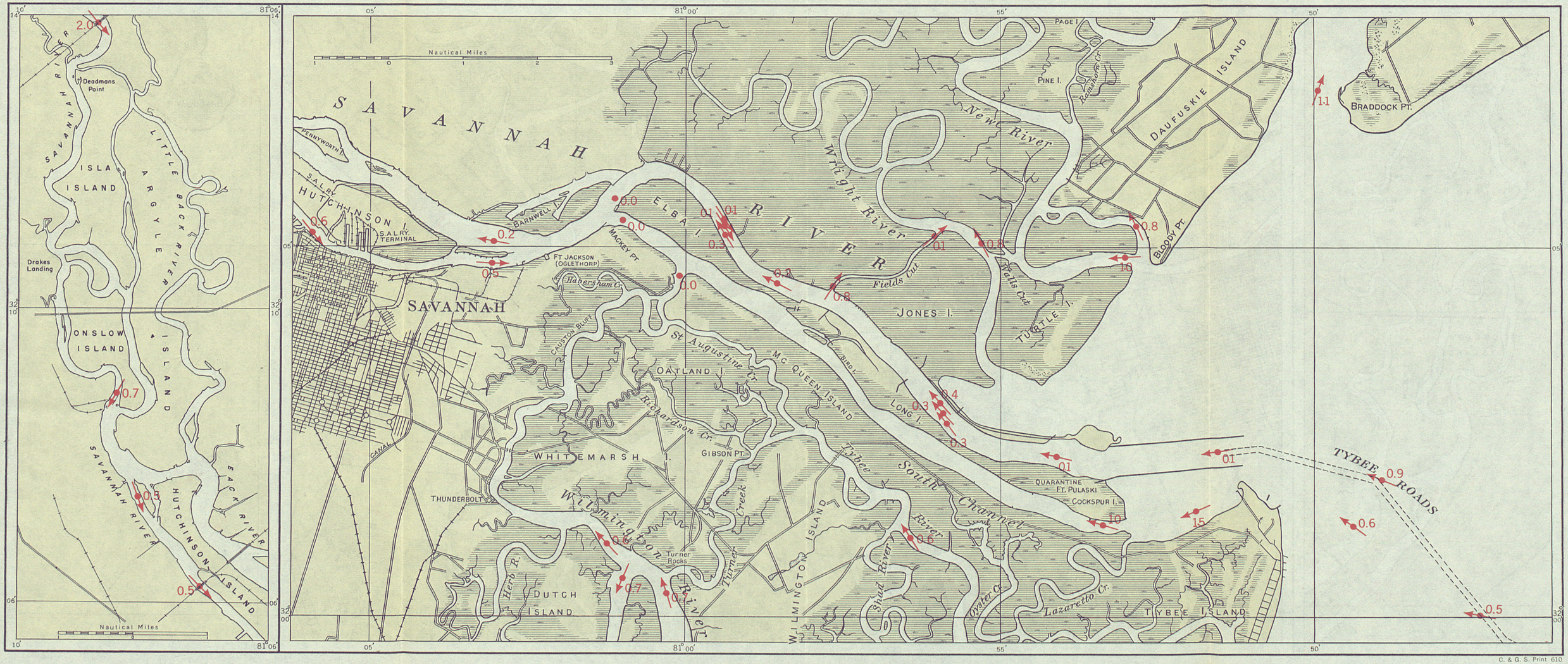

Fig. 51. Currents in Savannah River 2 hours after low water at Tybee Light.

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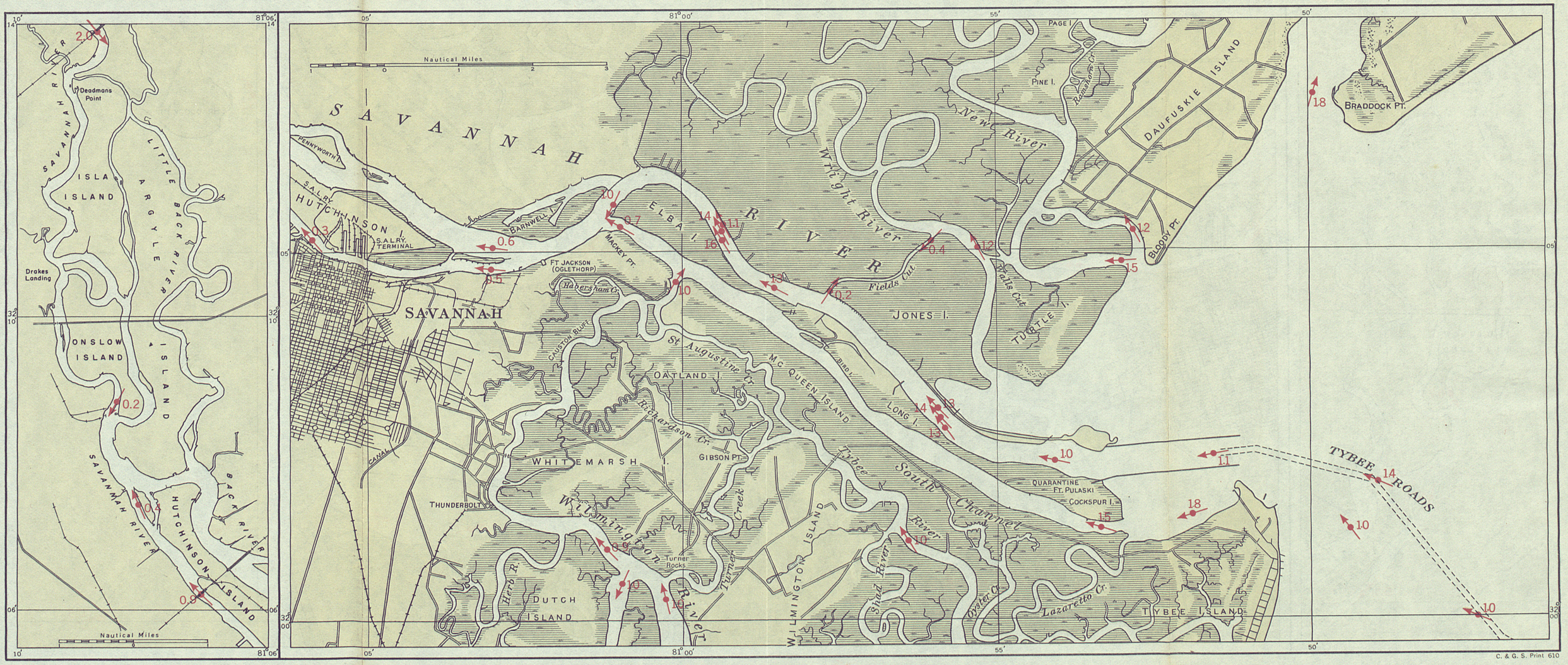

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Fig. 52. Currents in Savannah River 3 hours after low water at Tybee Light.

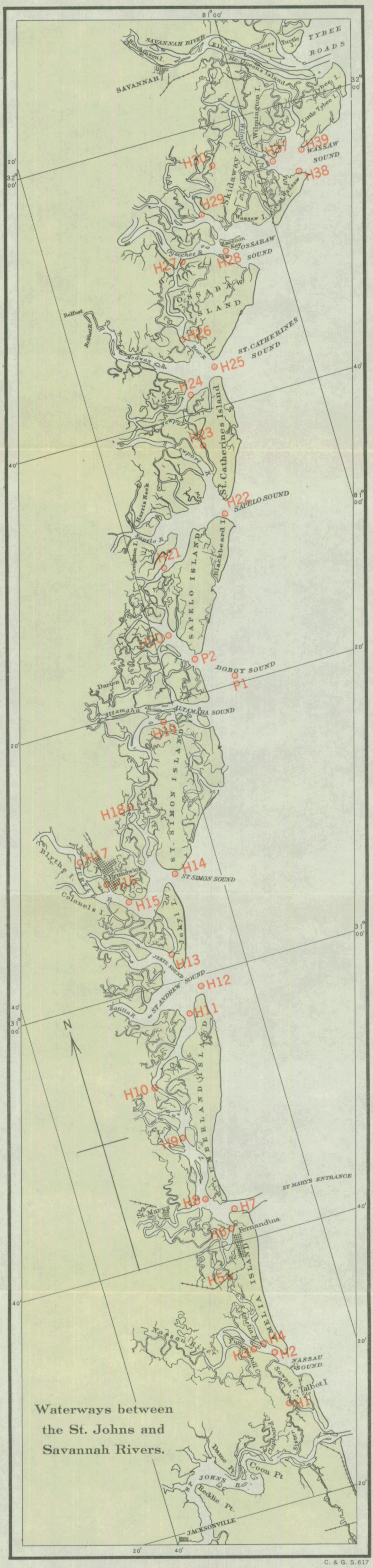

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Fig. 53. Current stations, Waterways between St. Johns River and Savannah River.

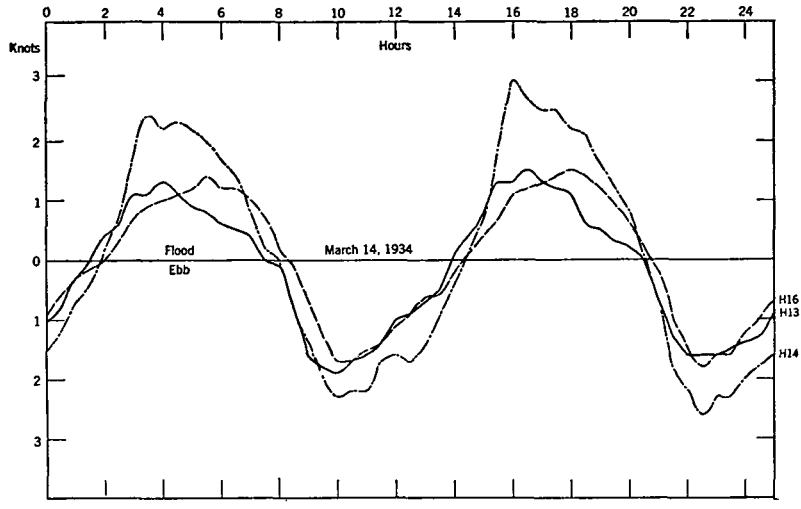


FIGURE 55.—Observed velocity curves, Jekyll Creek, St. Simon Sound and Brunswick Harbor.

Figure 55 shows simultaneous observational curves for stations H 13 in Jekyll Creek, H 14 in the entrance to St. Simon Sound and H 16 in Brunswick Harbor. Time and velocity relations of the current at the three stations, as well as the characteristic peculiarities of the current movement at each station, are clearly shown by these curves.

CURRENT CHARTS

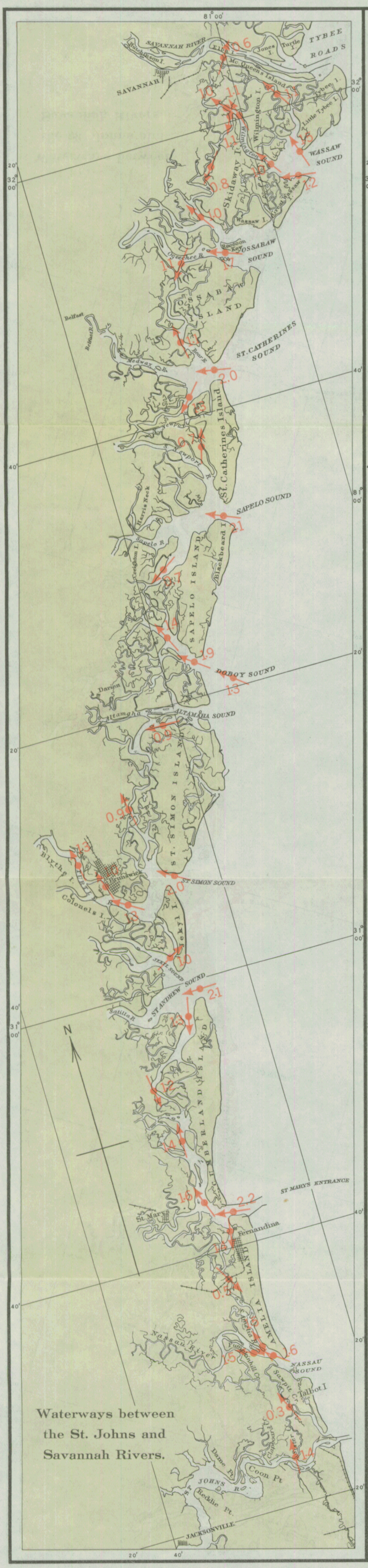
The observed direction and velocity of the current at 41 locations in the waterways between the St. Johns River and the Savannah River for each hour from 2 hours before to 3 hours after high and low waters at Tybee Light, Ga., are represented in figures 56 to 61. Most of the observations used in preparing the charts were taken in 1934. They were all taken with a current pole within 14 feet of the surface. To make the information as complete as possible, data for a few locations shown on current charts of the St. Johns and Savannah Rivers are repeated on these charts. The locations at which the observations were taken are marked by small circles. The observed directions of flow for the designated hour of the tide are represented by arrows drawn through the circles. The mean velocities for the designated hour are shown to the nearest tenth of a knot by numerals near the circles. At times of spring tides and perigean tides the velocities normally are greater and at times of neap tides and apogean tides less than those given on the charts. In this locality the spring and perigean effects are practically equal, each producing a velocity increase above the mean of about 18 percent. When spring and perigean effects combine, the velocities of the tidal current are greatest. When neap and apogean effects combine, the velocities of the tidal current are least. Winds and freshet conditions at times modify both the direction and the velocity of the current.

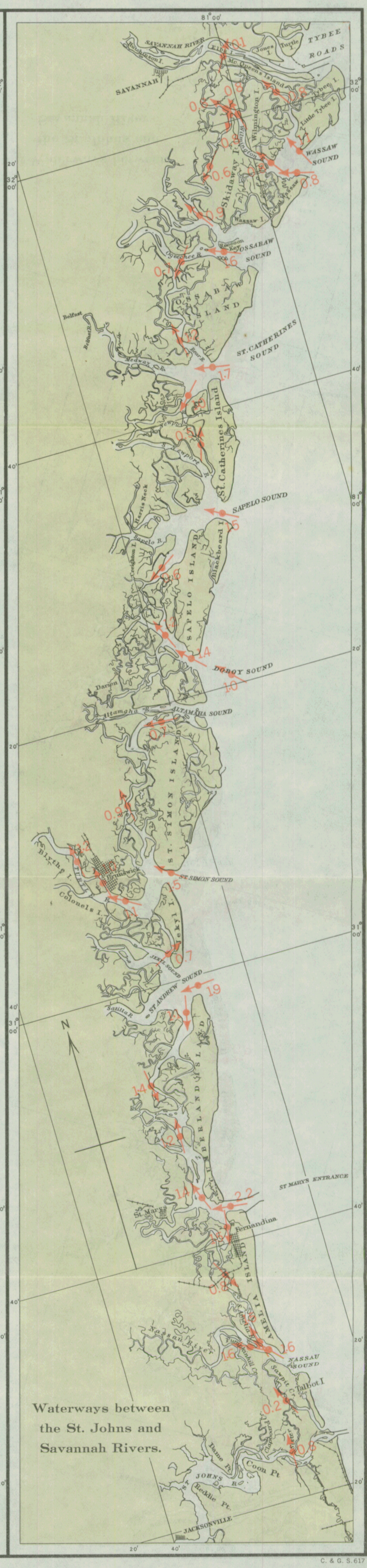
Daily predictions of the high and low waters at Tybee Light are included in the annual Tide Tables for the Atlantic Ocean, published by the Coast and Geodetic Survey.

TABLE 6.—*Current Data, Waterways Between the St. Johns River and the Savannah River*

[Referred to times of high water and low water at Tybee Light, Ga.]

Station no.	Observer, location, and year	Observations				Slack	Flood strength			Flood duration	Slack	Ebb strength			Ebb duration	Mean current hour
		Date	Period	Method	Depth		Time	True direction	Velocity			Time	True direction	Velocity		
	L. A. POTTER, 1919		*Days*		*Feet*	*Hours after low water*	*Hours after high water*	*Degrees*	*Knots*	*Hours*	*Hours after high water*	*Hours after low water*	*Degrees*	*Knots*	*Hours*	*Hours*
P 1	Approach to Doboy Sound, 3.0 miles N. 61° E. of clubhouse, Wolf Island (31° 20′.7 N., 81°14′.1 W.).	Nov. 24–26	2	Pole	7½	0.82	−2.72	312	1.34	6.48	1.20	−2.58	114	1.39	5.94	10.44
P 2	Doboy Sound entrance, 0.9 miles S. 11° E. of old tower, Sapelo Island (31°22′.6 N., 81°16′.9 W.).	do	2	do	7½	0.88	−2.68	304	1.95	6.12	0.90	−3.00	109	2.01	6.30	10.29
	E. F. HICKS, 1934															
H 1	Fort George River, between Mud River and Gunnisons Cut (30°27′.4 N., 81°27′.1 W.).	Feb. 28–Mar. 2	2	do	3½	0.13	−2.29	334	0.29	6.66	0.69	−3.37	162	0.84	5.76	10.05
				Meter	4	0.68	−2.51		0.27	5.74	0.32	−3.50		0.87	6.68	10.01
				do	14	0.51	−2.31		0.21	6.05	0.46	−3.57		0.91	6.37	10.04
H 2	Nassau Sound, 0.9 mile north of entrance to Sawpit Creek (30°31′.4 N., 81°27′.1 W.).	do	2	Pole	6¾	2.06	−1.49	312	1.68	5.65	1.61	−1.52	135	1.73	6.77	11.43
				Meter	4	2.03	−1.41		1.66	5.78	1.71	−1.47		1.56	6.64	11.48
				do	11	2.10	−1.43		1.63	5.69	1.69	−1.50		1.70	6.73	11.48
				do	17	2.08	−1.13		1.50	5.63	1.61	−1.64		1.50	6.79	11.49
H 3	Nassau River, midchannel 0.4 mile N. 82° W. of south end of Middle Marsh Island (30°32′.0 N., 81°28′.8 W.).	do	2	Pole	6	2.26	−1.31	294	1.60	5.78	1.94	−1.42	129	1.85	6.64	11.63
				Meter	4	2.16	−1.41		1.27	5.85	1.91	−1.20		1.54	6.57	11.63
				do	11	2.13	−1.49		1.48	5.84	1.87	−1.47		1.66	6.58	11.52
				do	18	2.16	−1.31		1.31	5.91	1.97	−1.87		1.57	6.51	11.50
H 4	South Amelia River, midchannel west of Walker Creek entrance (30°32′.2 N., 81°27′.9 W.).	Mar. 2–4	2	Pole	3½	0.90	−1.36	341	1.55	6.49	1.29	−3.07	162	1.55	5.93	10.70
				Meter	4	0.81	−1.51		1.32	6.50	1.21	−3.12		1.42	5.92	10.61
				do	14	0.95	−1.33		1.22	6.44	1.29	−3.10		1.25	5.98	10.72
H 5	Kingsleys Creek, highway bridge, center of draw (30°37′.7 N., 81°29′.1 W.).	do	2	Pole	2½	3.23	−0.03	S'd	0.97	5.38	2.51	−0.64	N'd	1.67	7.04	0.11
				Meter	3	3.16	−0.21		1.12	5.55	2.61	−0.62		1.59	6.87	0.08
				do	11	3.26	−0.16		1.09	5.41	2.57	−0.74		1.55	7.01	0.08
H 6	Amelia River, 1.2 miles N. 47° W. of Fernandina Light (30°41′.2 N., 81°27′.6 W.).	do	2	Pole	6	0.91	−0.99	188	1.47	6.56	1.37	−2.62	358	1.87	5.86	10.93
				Meter	5	0.71	−1.53		1.37	6.66	1.27	−2.64		1.69	5.76	10.72
				do	13	0.61	−1.23		1.52	6.88	1.39	−2.50		1.72	5.54	10.83
				do	21	0.68	−1.11		1.42	6.76	1.34	−2.54		1.59	5.66	10.86





Waterways between the St. Johns and Savannah Rivers.

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Fig. 56. Currents 2 hours before high water at Tybee Light. Currents 1 hour before high water at Tybee Light.

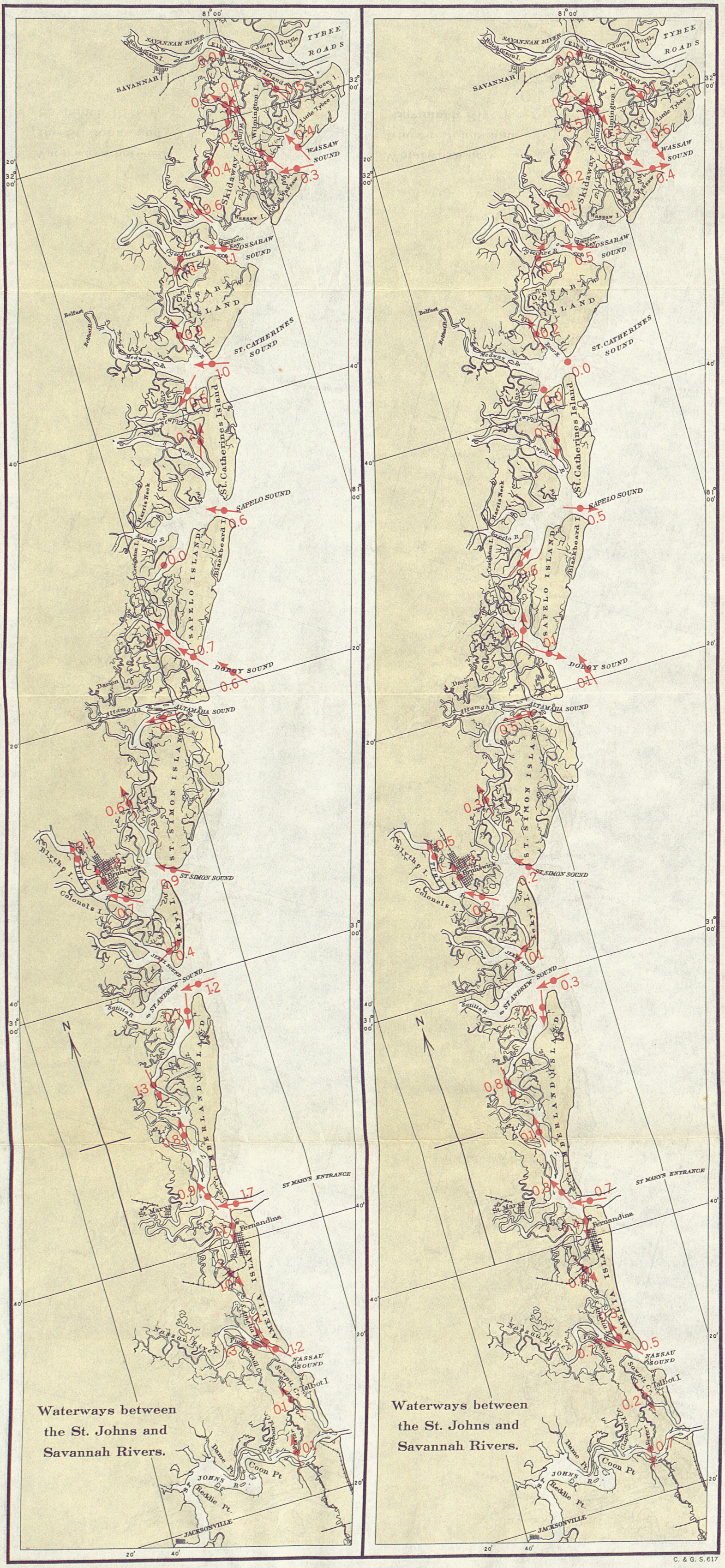

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Fig. 57. Currents at time of high water at Tybee Light. Currents 1 hour after high water at Tybee Light.

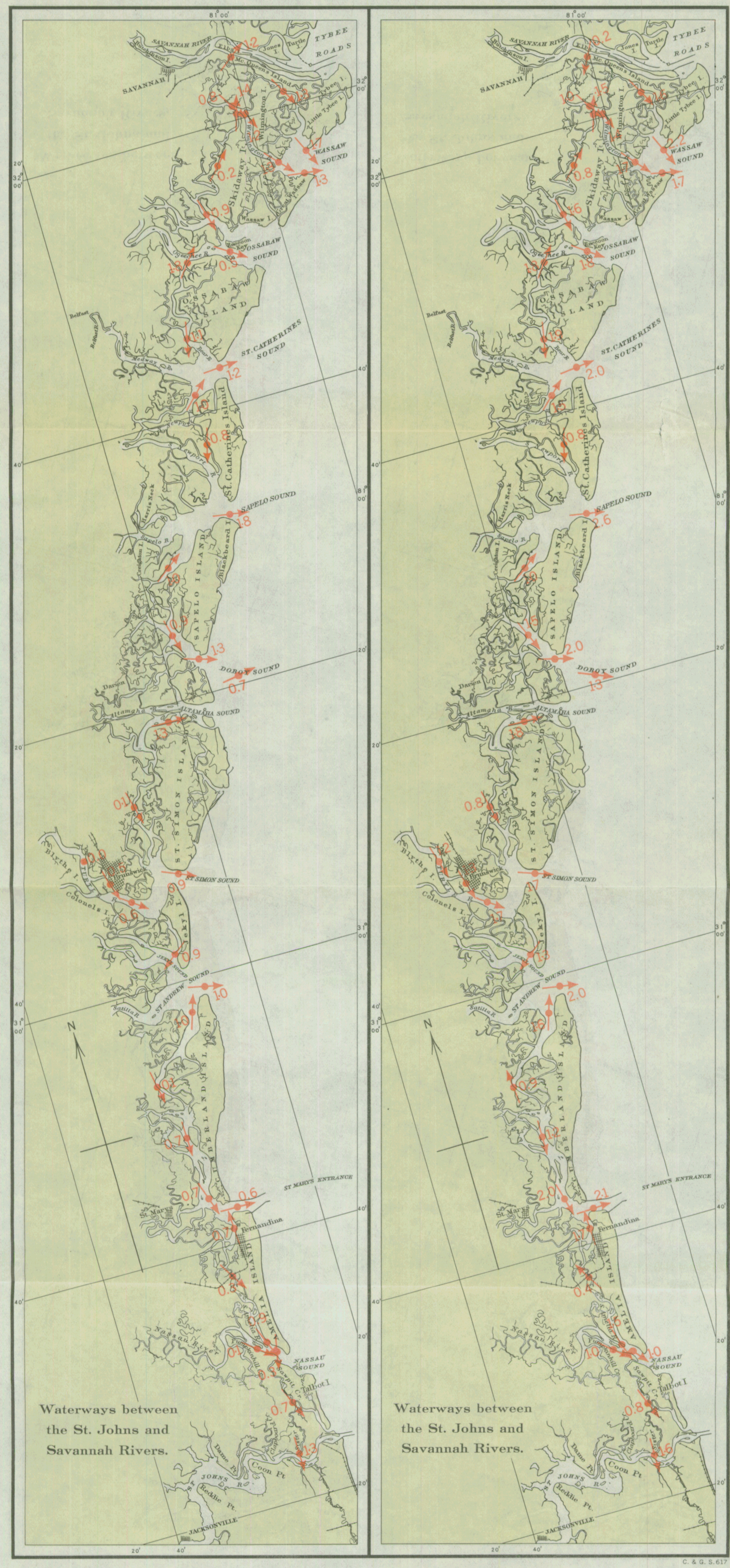

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Fig. 58. Currents 2 hours after high water at Tybee Light.

Currents 3 hours after high water at Tybee Light.

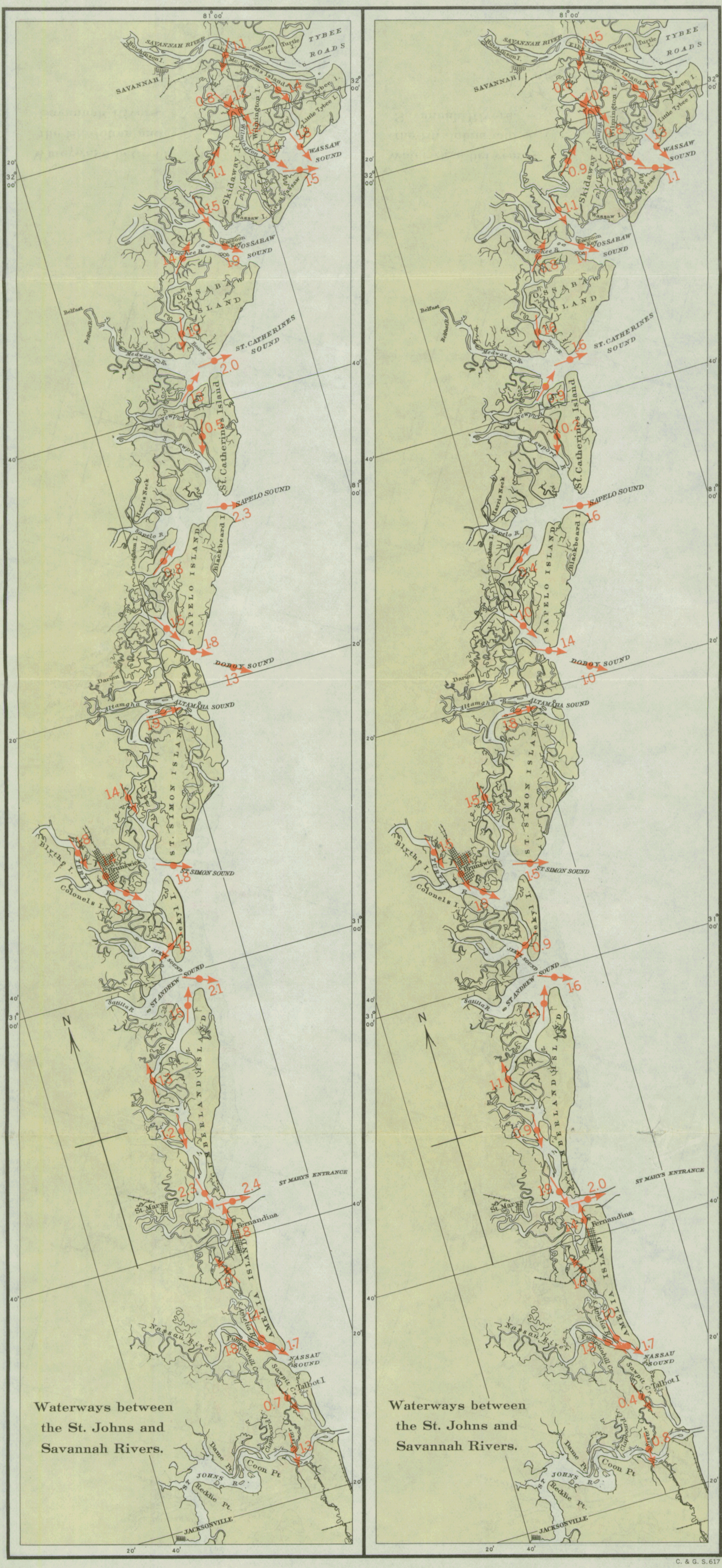

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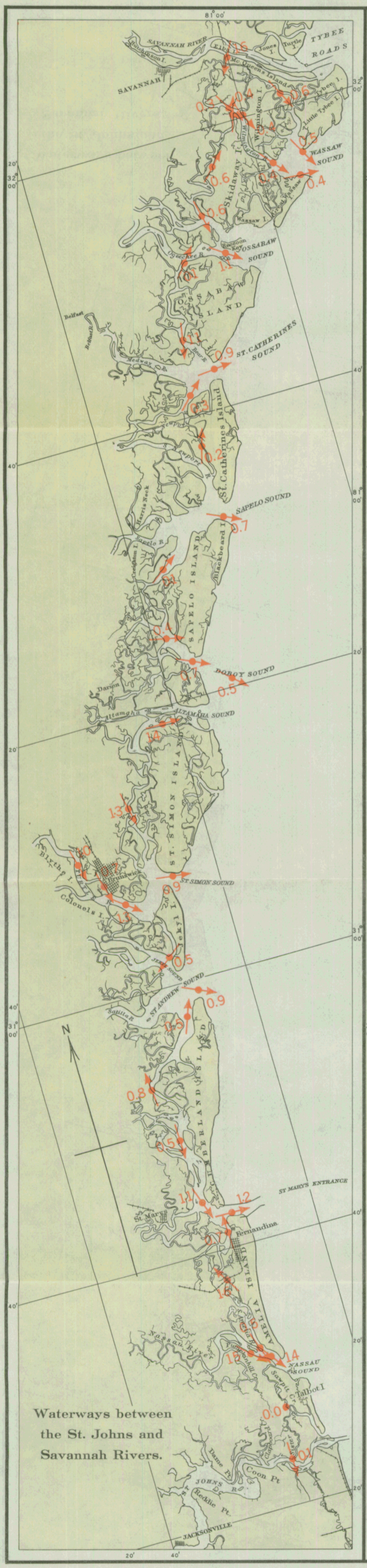
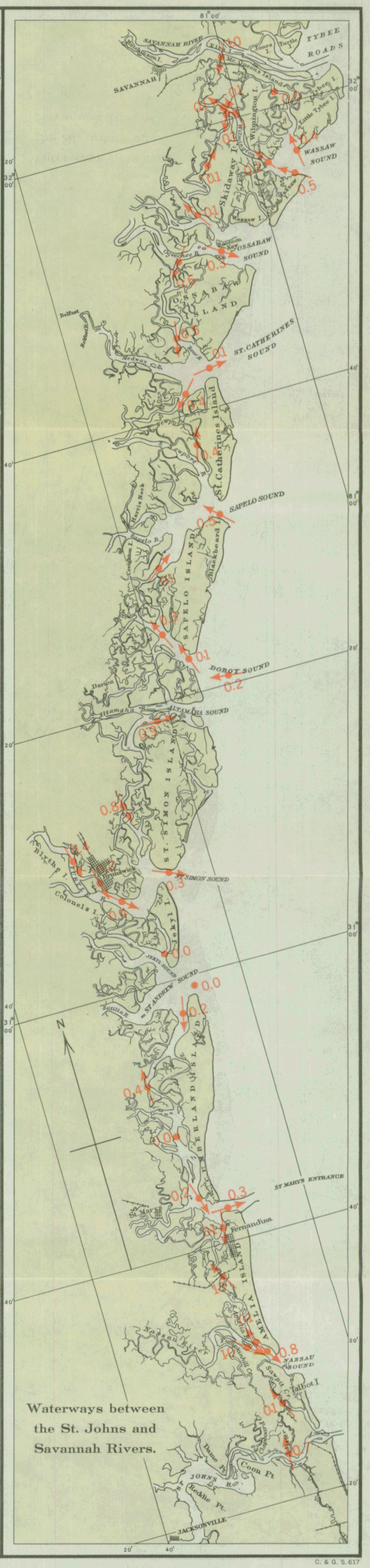
Fig. 59. Currents 2 hours before low water at Tybee Light. Currents 1 hour before low water at Tybee Light.



Waterways between the St. Johns and Savannah Rivers.

Fig. 60. Currents at time of low water at Tybee Light.



Waterways between the St. Johns and Savannah Rivers.

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Currents 1 hour after low water at Tybee Light.

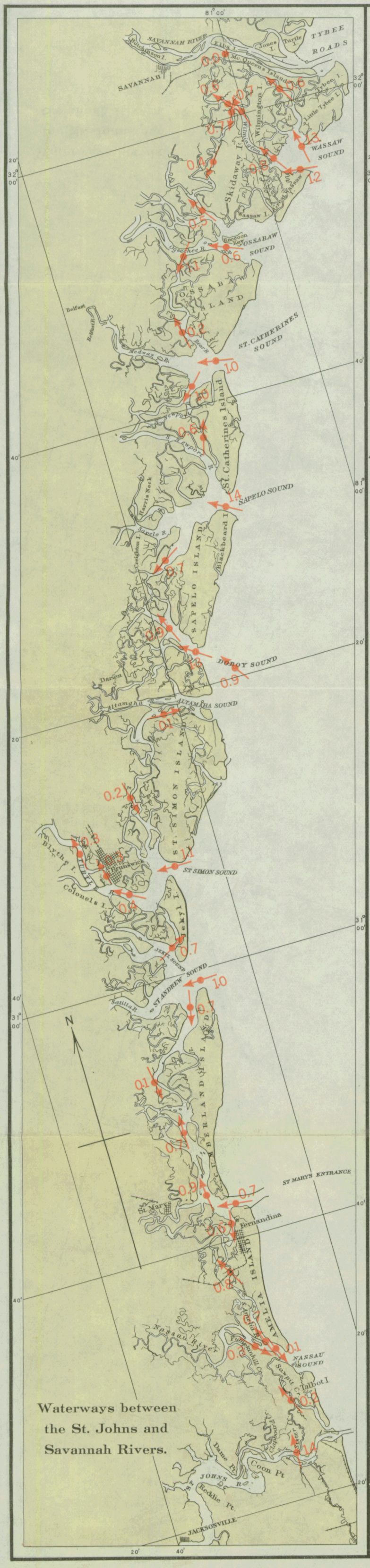
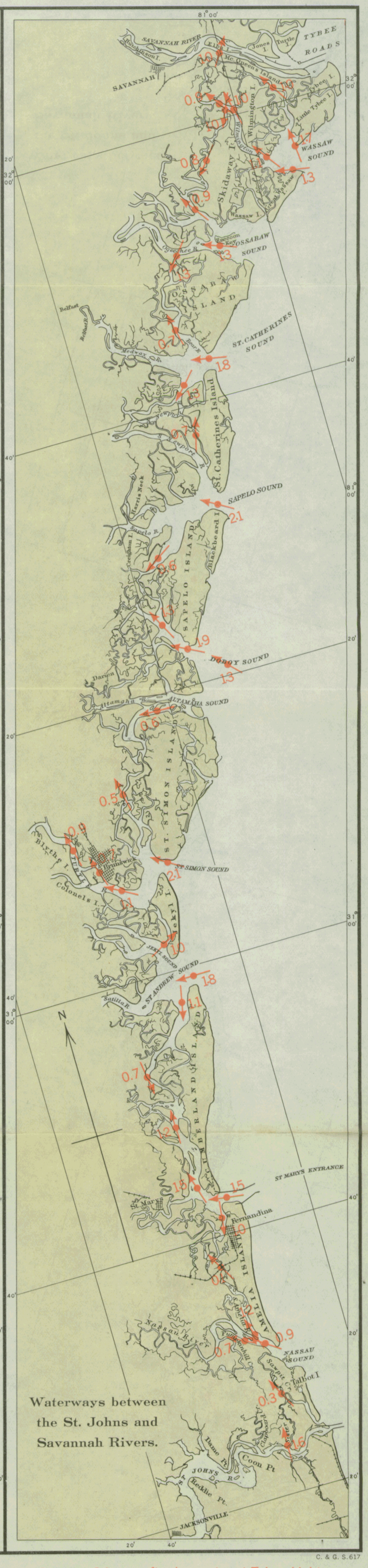


Fig. 61. Currents 2 hours after low water at Tybee Light.



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Currents 3 hours after low water at Tybee Light.

H 7	St. Marys entrance, 0.4 mile N. 48° E. of Fort Clinch (30°42′.6 N.. 81°26′.9 W.).	Mar. 5–7	2	Pole	6¾	1.33	−1.36	277	2.30	6.39	1.62	−2.64	90	2.50	6.03	11.00
				Meter	9	1.28	−1.49		2.20	6.38	1.56	−2.64		2.66	6.04	10.94
				do	23	1.03	−1.53		2.15	6.59	1.52	−2.62		2.49	5.83	10.86
				do	36	0.86	−1.71		1.98	6.90	1.66	−2.82		2.31	5.52	10.76
H 8	Cumberland Sound, 0.3 mile N. 68° W. of mouth of Beach Creek (30°43′.7 N., 81°29′.0 W.).	do	2	Pole	7	1.23	−2.39	342	1.67	6.36	1.49	−2.44	164	2.35	6.06	10.74
				Meter	6	1.18	−2.19		1.56	6.41	1.49	−2.50		2.26	6.01	10.76
				do	14	1.10	−1.79		1.34	6.49	1.49	−2.04		1.90	5.93	10.95
				do	22	1.20	−1.43		1.12	6.36	1.46	−2.02		1.52	6.06	11.06
H 9	Cumberland Sound, midchannel west of Stafford Island (30°48′.6 N., 81°29′.5 W.)	Mar. 7–9	2	Pole	6¾	1.03	−1.91	0	1.41	6.28	1.21	−3.04	180	1.29	6.14	10.58
				Meter	5	1.13	−1.86		1.32	6.09	1.12	−3.24		1.32	6.33	10.55
				do	14	1.03	−1.83		1.30	6.43	1.36	−3.04		1.30	5.99	10.64
				do	23	1.23	−1.99		1.29	6.43	1.56	−2.94		1.17	5.99	10.73
H 10	Cumberland River, midchannel near cabin bluff (30°52′.9 N., 81°30′.8 W.).	do	2	Pole	7	1.83	−0.68	171	1.41	6.44	2.17	−2.47	355	1.33	5.98	11.48
				Meter	6	1.76	−0.78		1.33	6.56	2.22	−2.44		1.28	5.86	11.45
				do	14	1.36	−0.81		1.29	6.96	2.22	−2.44		1.17	5.46	11.34
				do	22	1.46	−0.64		1.20	6.76	2.12	−2.47		1.05	5.66	11.38
H 11	Cumberland River, 1.4 miles S. 44° W. of old tower, Little Cumberland Island (30°57′.5 N., 81°25′.9 W.).	do	2	Pole	7	0.72	−1.95	191	1.29	6.51	1.13	−2.98	18	1.62	5.91	10.49
				Meter	5	0.95	−1.45		1.20	6.08	0.93	−3.10		1.44	6.34	10.60
				do	12	0.82	−1.72		1.43	6.41	1.13	−2.92		1.57	6.01	10.59
				do	19	0.70	−1.60		1.30	6.57	1.17	−2.72		1.30	5.85	10.65
H 12	St. Andrews Sound, 0.8 mile N. 30° E. of old tower, Little Cumberland Island (30°59′.2 N., 81°24′.3 W.).	Mar. 5–7	2	Pole	7	0.95	−2.02	268	2.14	6.47	1.32	−2.67	103	2.23	5.95	10.66
				Meter	14	1.08	−2.05		2.11	6.44	1.42	−2.73		2.16	5.98	10.69
				do	35	1.00	−2.15		1.95	6.50	1.40	−2.73		2.18	5.92	10.64
				do	56	0.80	−1.82		1.72	6.72	1.42	−2.63		1.97	5.70	10.70
H 13	Mouth of Jekyll Creek, midchannel (31°02′.1 N., 81°26′.0 W.).	Mar. 13–15	2	Pole	3½	0.98	−2.88	60	1.07	6.00	0.88	−3.00	232	1.37	6.42	10.26
				Meter	3	1.08	−2.65		1.02	5.87	0.85	−2.87		1.47	6.55	10.36
				do	11	0.80	−2.28		0.90	6.35	1.05	−3.20		1.45	6.07	10.36
H 14	St. Simon Sound, 0.3 mile S. 26° W. of St. Simon Light (31°07′.8 N., 81°23′.8 W.).	do	2	Pole	6¾	1.40	−2.88	300	2.13	5.88	1.18	−2.78	112	1.83	6.54	10.49
				Meter	11	1.28	−2.88		2.08	6.04	1.22	−2.82		1.88	6.38	10.46
				do	27	1.35	−2.28		2.14	6.15	1.40	−2.68		2.04	6.27	10.71
				do	43	1.10	−2.42		2.03	6.43	1.43	−2.60		2.07	5.99	10.64
H 15	Brunswick River, 0.2 mile south of United States quarantine dock, Brunswick Point (31°06′.7 N., 81°28′.4 W.).	Mar. 15–17	2	Pole	7	1.52	−2.42	300	1.32	6.10	1.52	−2.30	125	2.20	6.32	10.84
				Meter	8	1.42	−2.15		1.28	6.23	1.55	−2.38		2.05	6.19	10.87
				do	20	1.40	−1.90		1.09	6.28	1.58	−2.08		1.81	6.14	11.01
				do	32	1.38	−1.40		1.04	6.50	1.78	−2.12		1.54	5.92	11.17
H 16	East River, 0.4 mile S. 21° W. of city hall spire, Brunswick, Ga. (31°08′.3 N., 81°29′.8 W.).	Mar. 13–15	2	Pole	7	1.32	−1.25	342	1.05	6.25	1.47	−2.80	166	1.42	6.17	10.95
				Meter	5	1.28	−1.42		0.78	6.22	1.40	−2.98		1.04	6.20	10.83
				do	12	1.25	−1.28		1.07	6.32	1.47	−2.70		1.39	6.10	10.95
				do	19	1.18	−1.40		1.03	6.49	1.57	−2.70		1.36	5.93	10.92

TABLE 6.—*Current Data, Waterways Between the St. Johns River and the Savannah River*—Continued

Station no.	Observer, location, and year	Observations: Date	Period	Method	Depth	Slack	Flood strength: Time	True direction	Velocity	Flood duration	Slack	Ebb strength: Time	True direction	Velocity	Ebb duration	Mean current hour
	E. F. HICKS, 1934—Continued		*Days*		*Feet*	*Hours after low water*	*Hours after high water*	*Degrees*	*Knots*	*Hours*	*Hours after high water*	*Hours after low water*	*Degrees*	*Knots*	*Hours*	*Hours*
H 17	Turtle River, midchannel, west of Southern R. R. dock (31°10′.6 N., 81°31′.5 W.).	Mar. 15–17	2	Pole	7	1.58	−1.92	348	1.29	6.49	1.97	−2.32	165	1.77	5.93	11.09
				Meter	7	1.58	−1.98		1.22	6.45	1.93	−2.18		1.60	5.97	11.10
				do	18	1.60	−1.90		1.28	6.43	1.93	−2.05		1.73	5.99	11.16
				do	28	1.55	−1.92		1.15	6.48	1.93	−2.12		1.65	5.94	11.12
H 18	Mackay River, 0.4 mile north of mouth of Troup Creek (31°13′.5 N., 81°26′.0 W.).	do	2	Pole	6¾	2.30	−2.00	348	0.95	5.63	1.83	−1.20	166	1.50	6.79	11.50
				Meter	5	2.22	−2.12		0.87	5.68	1.80	−1.38		1.49	6.74	11.39
				do	12	2.20	−2.15		0.86	6.07	2.17	−1.30		1.43	6.35	11.49
				do	19	2.22	−2.15		0.76	6.28	2.40	−0.62		1.12	6.14	11.72
H 19	Buttermilk Sound, midchannel, 1.1 miles S. 57° E. of Onemile Cut (31°18′.8 N., 81°21′.1 W.).	Mar. 19–21	2	Pole	3½	2.18	−2.08	272	0.95	4.12	0.20	−2.32	92	1.97	8.30	10.76
				Meter	3	2.15	−2.30		1.02	3.98	0.03	−2.20		1.97	8.44	10.68
				do	13	1.92	−2.20		1.09	4.51	0.33	−2.15		1.82	7.91	10.74
H 20	Doboy Sound, midchannel, west of mouth of Duplin River (31°24′.8 N., 81°18′.6 W.).	do	2	Pole	7	0.55	−2.45	333	1.46	6.68	1.13	−2.90	154	1.61	5.74	10.34
				Meter	4	0.50	−1.82		1.33	6.73	1.13	−2.93		1.35	5.69	10.48
				do	11	0.45	−2.48		1.48	6.98	1.33	−2.70		1.33	5.44	10.41
				do	18	−0.05	−3.05		1.24	7.42	1.27	−2.93		0.89	5.00	10.07
H 21	Mud River, midchannel, 0.8 mile N. 26° E. of mouth of New Teakettle Creek (31°29′.8 N., 81°17′.4 W.).	do	2	Pole	3½	[1] 0.55	[1] −2.70	236	0.79	5.77	[1] 0.22	−3.77	53	1.08	6.65	9.84
				Meter	2	0.27	−2.75		0.74	6.03	0.20	−3.97		0.89	6.39	9.70
				do	6	0.37	−2.70		0.87	6.85	1.12	−2.73		0.76	5.57	10.28
H 22	Sapelo Sound, midchannel, between Blackbeard Island and St. Catherines Island (31°32′.3 N., 81°11′.1 W.).	Mar. 21–23	2	Pole	6¾	0.58	−2.60	296	2.16	6.25	0.73	−3.12	100	2.60	6.17	10.16
				Meter	8	0.40	−2.72		2.10	6.57	0.87	−2.98		2.47	5.85	10.16
				do	20	0.20	−2.38		1.95	6.70	0.80	−3.15		2.00	5.72	10.13
				do	32	0.00	−2.32		1.61	6.83	0.73	−3.20		1.51	5.59	10.06
H 23	Johnson Creek 2.0 miles southward of north entrance (31°37′.6 N., 81°11′.3 W.).	do	2	Pole	3½	−0.55	−2.92	15	0.74	7.25	0.60	−3.78	195	0.84	5.17	9.60
				Meter	2	−0.48	−3.20		0.80	7.48	0.90	−3.65		0.90	4.94	9.66
				do	8	−0.52	−2.78		0.83	7.49	0.87	−3.58		0.90	4.93	9.76
H 24	North Newport River, 0.5 mile east of mouth of Vandyke Creek (31°41′.4 N., 81°11′.2 W.).	do	2	Pole	7	0.38	−2.68	223	1.31	6.80	1.08	−3.43	45	1.49	5.62	10.10
				Meter	4	0.32	−2.15		1.13	6.61	0.83	−3.53		1.38	5.81	10.13
				do	15	0.42	−2.02		1.12	6.48	0.80	−3.20		1.42	5.94	10.26
H 25	St. Catherines Sound, 0.5 miles south of south end of Ossabaw Island (31°42′.9 N., 81°08′.3 W.).	Mar. 26–28	2	Pole	6¾	1.13	−2.20	280	2.02	5.99	1.02	−2.70	85	2.12	6.43	10.58
				Meter	7	1.17	−2.40		1.85	5.88	0.95	−2.75		1.99	6.54	10.50
				do	18	1.17	−2.00		1.64	6.01	1.08	−2.72		1.89	6.41	10.64
				do	29	0.83	−2.25		1.39	6.17	0.90	−2.50		1.61	6.25	10.51
H 26	Bear River, midchannel, 0.8 miles southward of mouth of Kilkenney Creek (31°45′.5 N., 81°10′.4 W.).	Mar. 28–30	2	Pole	6¾	1.72	−0.95	348	1.21	5.63	1.25	−2.92	190	2.01	6.79	11.04
				Meter	6	1.75	−0.70		1.18	5.73	1.38	−2.88		2.01	6.69	11.15
				do	15	1.10	−1.70		1.41	6.48	1.48	−2.95		1.75	5.94	10.74
				do	24	0.40	−2.22		1.55	7.15	1.45	−3.00		1.63	5.27	10.42
H 27	Florida passage, midchannel, north entrance (31°51′.0 N., 81°08′.6 W.).	Mar. 26–28	2	Pole	7	0.15	−3.10	217	1.26	6.13	0.18	−3.98	38	1.91	6.29	9.58
				Meter	3	0.30	−3.68		1.17	5.52	−0.28	−3.90		1.79	6.90	9.37
				do	13	−0.20	−1.88		1.35	7.32	1.02	−3.80		1.23	5.10	10.05
H 28	Ossabaw Sound, midchannel between Raccoon Key and Egg Island (31°50′.9 N., 81°04′.7 W.).	Mar. 28–30	2	Pole	7	1.35	−2.02	291	1.74	6.30	1.55	−2.67	124	2.04	6.12	10.82
				Meter	4	1.40	−2.18		1.69	6.25	1.55	−2.30		2.11	6.17	10.88
				do	15	0.75	−1.50		1.41	6.90	1.55	−2.83		1.46	5.52	10.76
H 29	Vernon River, midchannel, 1.4 miles southward of Possum Point (31°53′.9 N., 81°05′.9 W.).	do	2	Pole	3½	0.92	−2.10	324	1.05	6.33	1.15	−3.18	166	1.63	6.09	10.46
				Meter	4	0.88	−2.32		1.11	6.37	1.15	−3.32		1.73	6.05	10.36
				do	14	0.88	−2.05		0.87	6.27	1.05	−2.88		1.27	6.15	10.51
H 30	Skidaway River, 0.7 mile southward of Burntpot Island (31°57′.2 N., 81°03′.9 W.).	Mar. 26–28	2	Pole	3½	1.25	−2.80	218	0.80	6.47	1.62	−2.10	42	1.08	5.95	10.76
				Meter	3	1.45	−2.48		0.92	6.57	1.92	−2.07		1.17	5.85	10.97
				do	11	1.28	−2.62		0.85	6.64	1.82	−2.07		0.94	5.78	10.86
H 37	Wilmington River, 0.3 mile westward of south end of Cabbage Island (31°56′.3 N., 80°58′.6 W.).	Apr. 26–June 9	3	Pole	7	0.60	−2.88	323	1.13	6.18	0.68	−3.54	138	1.69	6.24	9.98
				Meter	5	0.63	−2.84		1.32	5.99	0.52	−3.54		1.90	6.43	9.96
				do	12	0.48	−2.82		1.19	6.22	0.60	−3.54		1.61	6.20	9.94
				do	19	0.17	−2.64		1.09	6.61	0.68	−3.46		1.37	5.81	9.95
H 38	Wassaw Sound between Wassaw Island and Cabbage Island Spit (31°55′.0 N., 80°56′.8 W.).	June 7–14	3	Pole	6, 7	0.48	−3.42	277	1.35	6.22	0.60	−3.15	105	1.76	6.20	9.89
				Meter	7, 8	0.60	−3.42		1.45	6.17	0.67	−3.13		1.82	6.25	9.94
				do	18, 20	0.32	−3.38		1.32	6.48	0.70	−3.20		1.60	5.94	9.87
				do	29, 32	0.12	−3.14		1.11	6.73	0.75	−3.20		1.30	5.69	9.90
H 39	Wassaw Sound, 0.1 mile west of Petit Chou Island (31°56′.5 N., 80°55′.9 W.).	May 31–June 15	3	Pole	6¾, 7	0.68	−3.22	352	1.74	5.90	0.48	−3.42	156	2.14	6.52	9.89
				Meter	5	0.68	−3.25		1.52	5.87	0.45	−3.37		2.22	6.55	9.89
				do	12, 13	0.54	−3.38		1.76	5.96	0.40	−3.50		2.14	6.46	9.78
				do	19, 21	0.50	−3.30		1.55	6.00	0.40	−3.20		1.85	6.42	9.86

[1] Times somewhat indefinite due to irregularity of the observed current.

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