DIGITIZATION OF NAUTICAL CHARTS AND SMOOTH SHEETS FOR THE DOMINICAN REPUBLIC, ISLAND OF HISPANIOLA, CARIBBEAN SEA

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES (CONT)

INTRODUCTION

The state-of-the-art in the numerical simulation of hydrodynamic flows has reached the point that one of the main limitations in the goal of having the models predict reality as accurately as possible is the lack of good, high density, accurate bathymetric data. In this particular case, the simulation involves the numerical simulation of the 1946 Dominican Republic tsunami, which affected the northeastern coast of the island of Hispaniola, part of the Greater Antilles. As part of the University of Puerto Rico Sea Grant sponsored simulation project, titled **"Estimate of the tsunami hazard in the Greater Antilles from local, earthquake-related tsunami sources**" (Grant/Project Number: R-122-1-98), Dr. William McCann, co-principal investigator, acquired a set of so-called "smooth sheets" for the waters of the Dominican Republic. The smooth sheets contain the original raw bathymetric sounding data from which the nautical charts are prepared. The problem with the nautical charts is that only a very small fraction of the original depth soundings are drawn on the charts, precluding its use in the preparation of the accurate depth grids that are to be used in the simulations. In 1994, Mercado (1994) presented the results of the digitization of all of the National Ocean Survey smooth sheets for the region around Puerto Rico and the U. S. Virgin Islands, but the data stopped at the 68° W longitude in the Mona Channel, a few miles west of Mona Island.

SCOPE OF WORK

The main purpose of the work funded by this seed money is to digitize the available U.S.A. Defense Mapping Agency nautical charts and the smooth sheets acquired from U.S. Navy ships. The emphasis is in the nearshore, shallow, regions. The immediate use to be given to this data is in the simulation of a tsunami, and for this phenomenon the available 2-minutes of arc resolution (see site at http://topex.ucsd.edu/marine_topo/mar_topo.html Smith and Sandwell, 1997) is sufficient for modeling the deep ocean propagation, but not so for shallow regions. The Sandwell and Smith data (sometimes called ETOPO-2) is known to be unreliable in shallow water. In addition, it is in shallow water regions that we place the high-resolution nested grids in order to better simulate the runup phase of the tsunami (Mercado and McCann, 1998). For this reason it is important that, where available, we use the data from the smooth sheets to prepare the depth grids. In rare occasions there are nautical charts in which the spot depth measurements appear in the chart with sufficient density of points. But at locations where no smooth sheets are available there is no other choice but to use the nautical charts.

The datum of the nautical charts is WGS84, while the datum of the smooth sheets is NAD27. All depth values are stored as negative values.

EQUIPMENT

The digitizing tablet is a GTCO Model Digi-Pad 5A, 36 by 48 inches in size. Its technical specifications give an accuracy of "0.020 inches, and a resolution of 0.001 inch.

DIGITIZATION OF NAUTICAL CHARTS

Figure 1 shows the areas around Hispaniola covered by the nautical charts. The filled areas are the ones that were digitized. In all nautical charts the shoreline was also digitized. This serves not only to make plots of shorelines but, when associated with a certain depth - which could be Mean Lower Low Water or Mean Sea Level – it helps to constrain the position of the coastline in the gridding process used to prepare depth contour plots and the depth matrix used as input to numerical models.

The convention to be followed for storing and naming the data files and folders is as follows:

1. The data will be stored as ASCII files, with 3 columns: longitude (negative for western hemisphere), latitude, and depth in meters. For the shoreline data the assigned depth will be 0.00 m. All depths are relative to Mean Low Water.
2. There will be a folder assigned to each of the 13 nautical charts that were processed. These folders will contain the digitized data, including both digitized shorelines and depth soundings.
3. Since some charts contain, as inserts, additional maps at different scales, for these charts a subfolder will be generated that will contain the digitized data corresponding to that additional map.
4. In general, there will be more than one shoreline data file for each folder or subfolder. This is so since in addition to the shoreline corresponding to the main island (which in this case is Hispaniola), there can be offshore islands.
5. The naming convention for the data obtained from the nautical charts is as follows:
    a) The first part of the name will consist of the number assigned by NOAA to the nautical chart. This will be followed by an underscore. After the underscore, in the file containing the main shoreline of Hispaniola the strings “Main_shoreline” will be added. For the rest of the files in that folder, instead of “Main_shoreline”, the string describing the name of the island or islet to which the shoreline data corresponds will be attached.
    b) All shoreline data will have the extension .sho. If the islet has no name then we will use “Islet_*”, where * = 1, 2, 3, ….. up to whatever value is needed. This will be followed by another underscore, and then the string “deg_WGS84.sho”. If the data is from a map insert (that is, it lies in a subfolder) then after the number of the nautical chart, instead of the string “Main_shoreline” we will attach a string describing the position in the nautical chart where the insert is located. For example, if the insert lies on the bottom right corner, then the string will say “Bottom_right”, followed by an underscore and the name of the island or islet, ending with “.sho”.
    c) The depth data in the nautical charts comes in two versions: 1) spot values, or soundings, and b) depth contours. Both were digitized. All depth data file names will follow the same naming convention but ending with the extension “.xyz”. Inside the name we will add the string “Spot_soundings” for the files containing

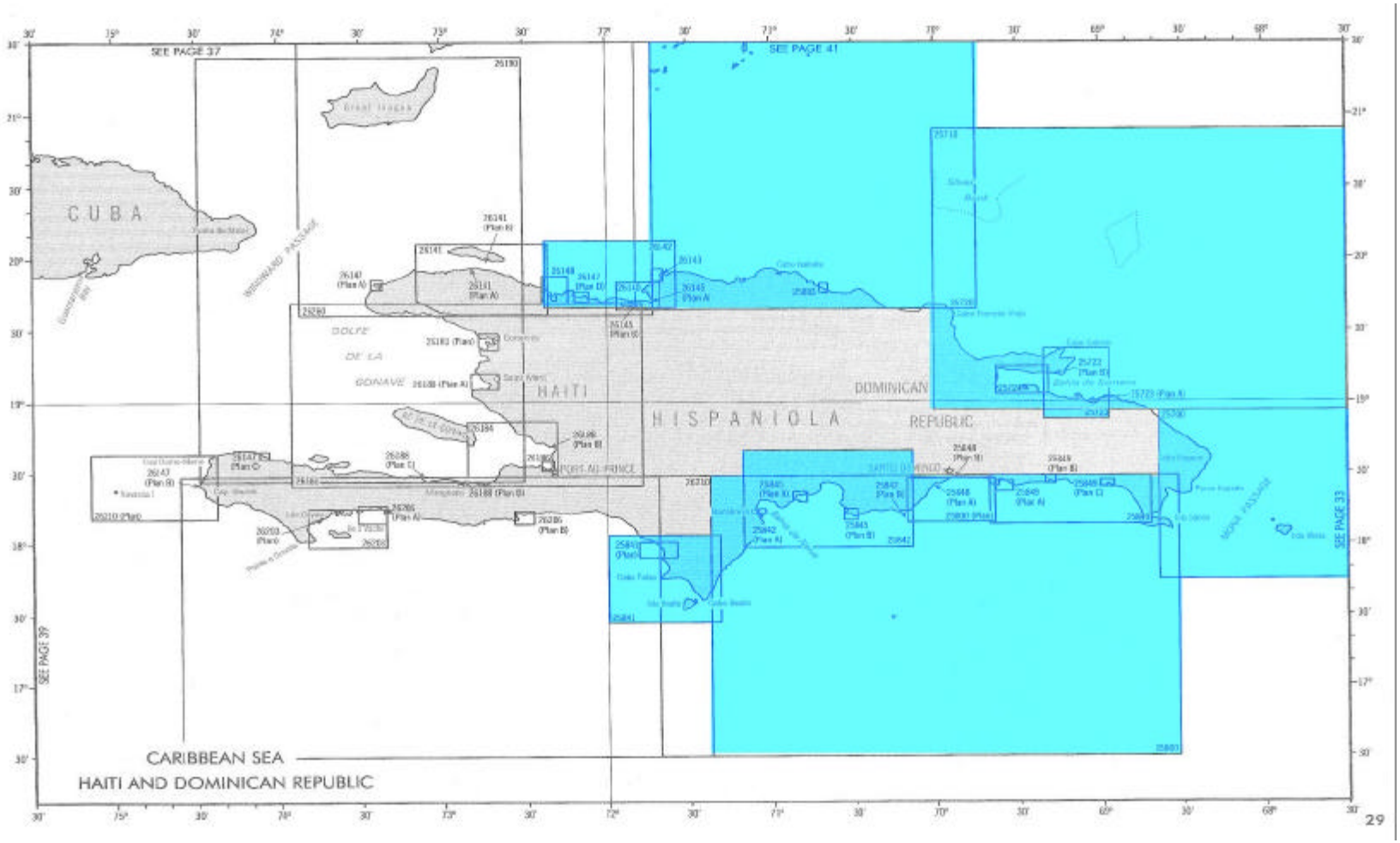

Figure 1 - Location map for U.S. Defense Mapping Agency nautical charts for Hispaniola. Filled rectangles are the ones digitized in this project.

the digitized spot depth values shown in the nautical charts. The files containing both the digitized spot soundings and the digitized depth contours appearing in the nautical chart will have instead the string "Bathy&contours".

The reason why it was decided to supply two bathymetric depth files, one containing both the digitized spot values and contours, and a separate one containing just the spot values is because we want to offer the user the option of using just the spot values since the depth contours is a subjective product, and the amount of digitized values is a function of the digitizing interval used by the person doing the digitization. Whenever shown, the outline of reefs shown in the charts was also digitized. The string "reef" will appear as part of the filename.

Table 1 shows the following information for each chart:

1st column: chart number
2nd column: chart name and number
3rd column: number of points digitized from depth contours in the chart
4th column: number of points digitized from the spot soundings shown in the chart
5th column: number of digitized points corresponding to a shoreline in the chart
6th column: number of digitized points corresponding to reef in the chart
7th column: total number of digitized points
8th column: minimum digitized depth, in meters
9th column: maximum digitized depth, in meters

For each chart two figures will be shown corresponding to the digitized depths with, and without, the depth contour data. Also, each depth value is color-coded according to its magnitude, with the shallower depths assigned reddish colors, and the deeper ones the blue color. At the end a figure showing a composite of all depth soundings obtained from the nautical charts will be presented.

DIGITIZATION OF SMOOTH SHEETS

Forty-eight smooth sheets were acquired covering the north, east, and south coasts of the Dominican Republic. These were acquired by the USNS Harkness between 1975 and 1977. The datum is NAD27, and depths are in meters relative to Mean Low Water.

Table 2 shows the relevant information for the digitized smooth sheets.

Figure 27 shows the outline of the areas for which we acquired smooth sheets. Each rectangle does not necessarily represent one smooth sheet, as there may exist several smooth sheets lying inside a given rectangle. But the rectangles do show the regions for which we acquired smooth sheets. The filled rectangles are the ones for which all smooth sheets inside it were digitized in this seed money project. Figure 28 shows a composite of the 13 smooth sheets that were digitized with this seed money, while Figure 29 shows a composite of all the smooth sheets and nautical charts.

TABLE 1
NAUTICAL CHARTS

	Map Name and Number	# Points Contours	# Points Bathymetry	# Points Shore	# Points Reef	Total	Zmin (m)	Zmax (m)
25700	Mona Passage 25700	4,745	2,376	905		8,026	1	5040
25710	Cabo Francés		1,973	2,885		4,858	2	8175
25720	Monte Cristi	16,024	1,958	8,339		26,321	0.9	8821
25723	Bahía Samaná (25723)	27,951	3,273	7,743		38,967	0.5	2037
25723	Miches	198	23	320	2,474	3,015	3	14.5
25723	Santa Barbara	8,224	592	1,638		10,454	0.5	66
25724	Bahia de Samaná	24,568	3,248	8,433		36,249	0.5	44
25800	Isla Saona	2,269	1,717	630		4,616	1	4747
25800	Approaches to Santo Domingo	353	641	236		1,230	2	1435
25803	Bahía Puerto Plata	4,438	1,282	1,252	2,152	9,124	0.3	46.8
25841	Beata	1,536	881	484	191	3,092	1	4407
25841	Cabo Rojo & Pedernales	639	389	160		1,188	4	1043
25842	Punta Palenque 25842	5,051	1,676	1,464	207	8,398	0.9	3912
25842	Barahona (Area A)	2,878	725	6,874		10,477	1	78
25842	Palenque (Area B)	364	85	206		655	4	330
25845	Puerto Viejo de Azua and	1,750	997	3,589		6,336	1	34
25845	Bahia de las Calderas 25845	1,872	921	524		3,317	1	422
25848	Puerto de Haina and	799	501	376	98	1,774	1	450
25848	Santo Domingo 25848	995	877	522	31	2,425	1	382
25849	San Andres (main map)	1,855	675	6,427		8,957	0.1	1461
25849	San Andres (sub-map A)	1,025	458	559		2,042	1	176
25849	La Romana (sub-map C)	1,532	177	2,855		4,564	1	295
25849	Macoris (sub-map B)	1,125	468	762	65	2,420	1	27
26142	Approaches to CAP-HATIEN 26142	4,261	1,843	14,830		20,934	0.3	2743
	Total	114,452	27,756	72,013	5,218	216,270		
			Bathymetry	Shore	Reef	Total		

TABLE 2
SMOOTH SHEETS

	Map Name and Number	Contours	Bathymetry	Shore	Reef	Total	Zmin	Zmax
1	Nor004a_deg_NAD27.xyz	809	521			1,330	11	493
2	Nor004b_deg_NAD27.xyz	798	444			1,242	0.38	456
3	Nor004c_deg_NAD27.xyz	488	347			835	22	296
4	Nor005_deg_NAD27.xyz		11,854			11,854	189	4231
5	Nor007a_deg_NAD27.xyz		5,491			5,491	35	4701
6	Nor007b_deg_NAD27.xyz		1,063			1,063	15	594
7	Nor007c_deg_NAD27.xyz		342			342	41	1013
8	Nor007d_deg_NAD27.xyz		147			147	18	493
9	nor009_deg_NAD27.xyz		4,273			4,273	15	5805
10	nor009a_deg_NAD27.xyz		1,253			1,253	11	1305
11	Nor009b_deg_NAD27.xyz		1,480			1,480	20	945
12	Wes007_deg_NAD27.xyz		4,297			4,297	56	1838
13	wes012_deg_NAD27.xyz		4,143			4,143	33	398
14	NORTH007A_deg_NAD27.xyz		703			703	638	3872
15	NORTH005C_deg_NAD27.xyz		608			608	20	379
16	NORTH005B_deg_NAD27.xyz		676			676	12	398
17	NORTH005A_deg_NAD27.xyz		472			472	22	321
18	NORTH004_deg_NAD27.xyz		3,615			3,615	205	4272
19	NORCO1977_deg_NAD27.xyz		1,337			1,337	1	31.5
20	CARIB003_deg_NAD27.xyz		2,152			2,152	20	3305
21	CARIB002_deg_NAD27.xyz		2,534			2,534	187	4140
22	CARI003A_deg_NAD27.xyz		447			447	13	501
23	WEST029_deg_NAD27.xyz		916			916	16.5	251
24	WEST028_deg_NAD27.xyz		564			564	64	315
25	WEST027_deg_NAD27.xyz		429			429	61	172
26	WEST026_deg_NAD27.xyz		3,066			3,066	44	159
27	WEST024_deg_NAD27.xyz		1,910			1,910	39	376
28	WEST023_deg_NAD27.xyz		336			336	83	203
29	WEST022_deg_NAD27.xyz		3,984			3,984	317	464
30	WEST021_deg_NAD27.xyz		5,169			5,169	217	434
31	WEST020_deg_NAD27.xyz		2,768			2,768	381	941
32	WEST017_deg_NAD27.xyz		10,701			10,701	50	518
33	WEST016_deg_NAD27.xyz		13,361			13,361	3	601
34	WEST014_deg_NAD27.xyz		15,598			15,598	55	896
35	WEST013_deg_NAD27.xyz		15,783			15,783	66	494
36	WEST005_deg_NAD27.xyz		32			32	4881	5407
37	WEST004_deg_NAD27.xyz		1,688			1,688	574	5495
38	WEST002_deg_NAD27.xyz		864			864	802	8195
39	WEST001_deg_NAD27.xyz		793			793	645	8155
40	Wes019_deg_NAD27.xyz		2,858			2,858	13.5	532
41	Wes018_deg_NAD27.xyz		317			317	15	496
42	Wes015_deg_NAD27.xyz		15,975			15,975	41	745
43	Wes011_deg_NAD27.xyz		1,605			1,605	14	966
44	Wes009_deg_NAD27.xyz		10,732			10,732	274	2099
45	Wes010_deg_NAD27.xyz		6,222			6,222	69	2067
46	SURV006_deg_NAD27.xyz		10,241			10,241	170	2965
47	MANA025_deg_NAD27.xyz		1,937			1,937	48	76
	Total	2,095	176,048	0	0	178,143		
			Bathymetry	Shore	Reef	Total		

CONCLUSIONS

All of the Defense Mapping Agency nautical charts for the Dominican Republic were digitized in this project. In addition a total of 48 smooth sheets were digitized. All of the data has been made available through a CD, and it will be made available through the Internet.

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Mercado, A., 1994. Digitization of National Ocean Survey Hydrographic "Smooth" Sheets for Puerto Rico and the U.S. Virgin Islands. Submitted to Sea Grant College Program, University of Puerto Rico. 116 pp.

Mercado, A. and W. McCann, 1998. Numerical simulation of the 1918 Puerto Rico tsunami. *J. Natural Hazards*, **18**:57-76.

Smith, W. H. F., and D. T. Sandwell, 1997. Global Sea Floor Topography from Satellite Altimetry and Ship Depth Soundings, Science, **277**:1956-1962.

ACKNOWLEDGMENTS

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FIGURES

Figure 2: Nautical Chart 26142 - Approaches to Cap-Haitien and Bahia de Monte Cristi

Directory of E:\Work\Republica Dominicana\Nautical_Charts\26142

File size	File Name
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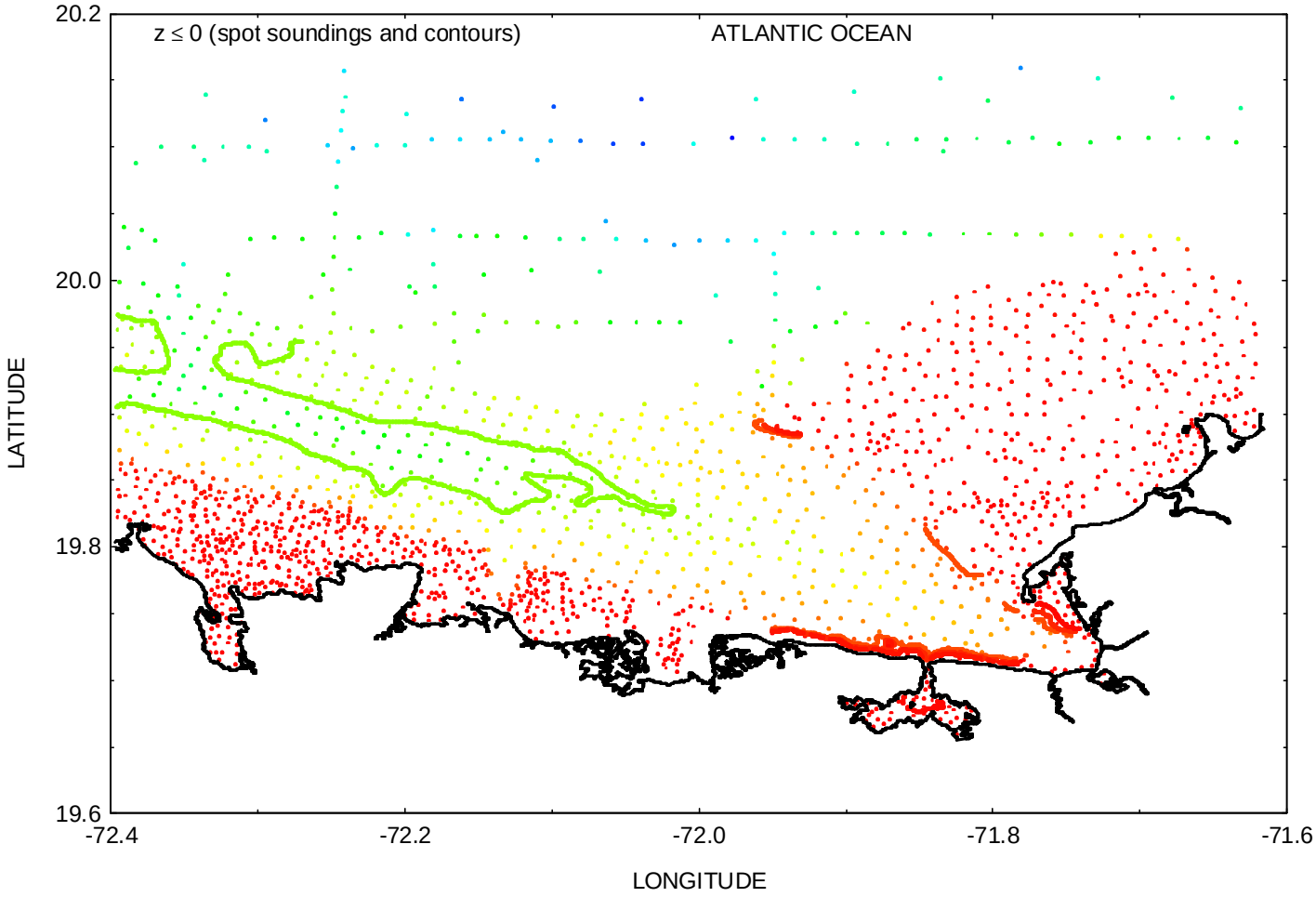
54 shoreline files
2 bahymetry files

HISPANIOLA: 26142
APPROACHES TO CAP-HAITIEN AND BAHIA DE MONTE CRISTI
WGS84



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WGS84

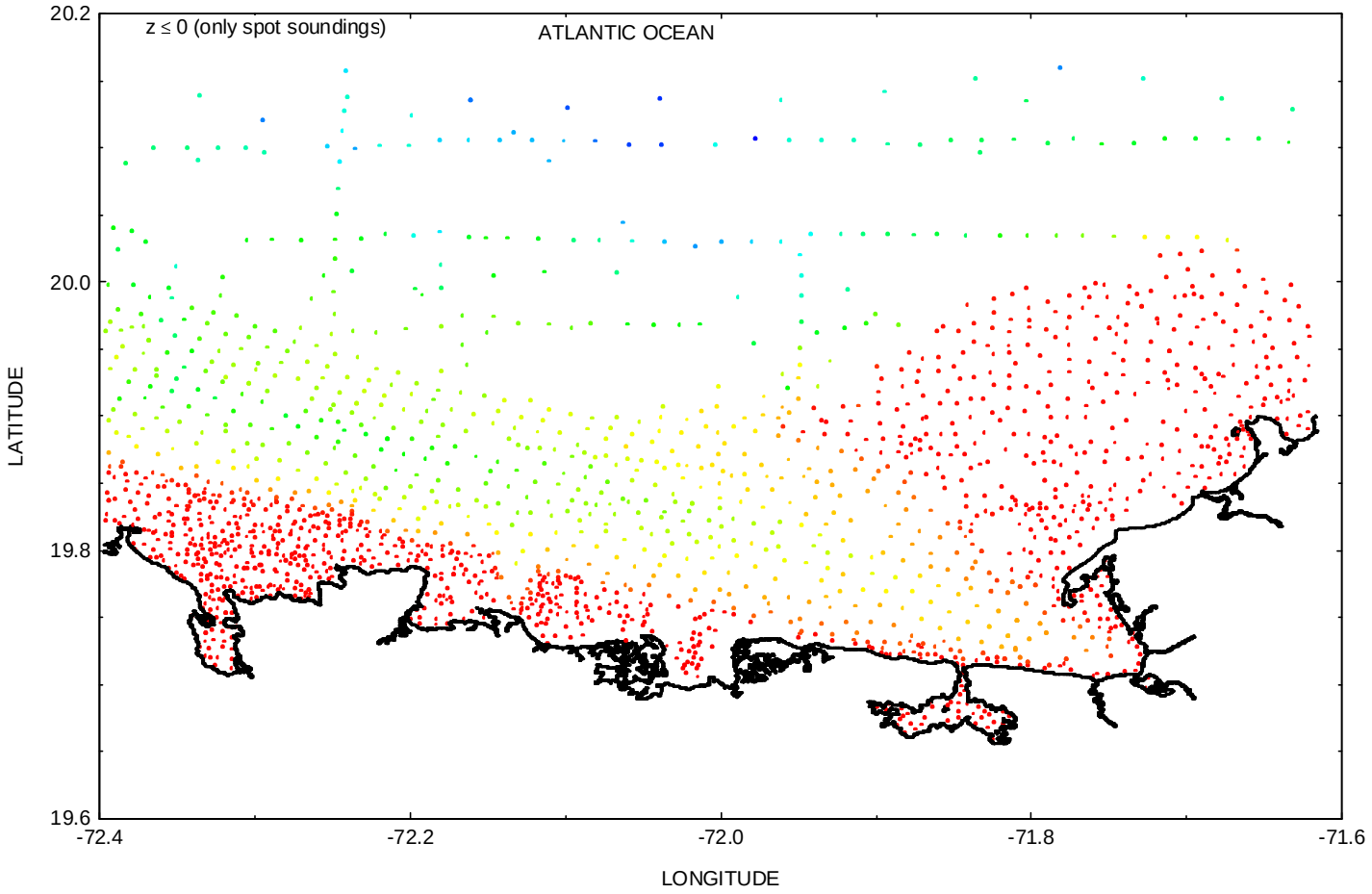

Figure 3: Nautical Chart 25720 - Monte Cristi to Cabo Frances Viejo

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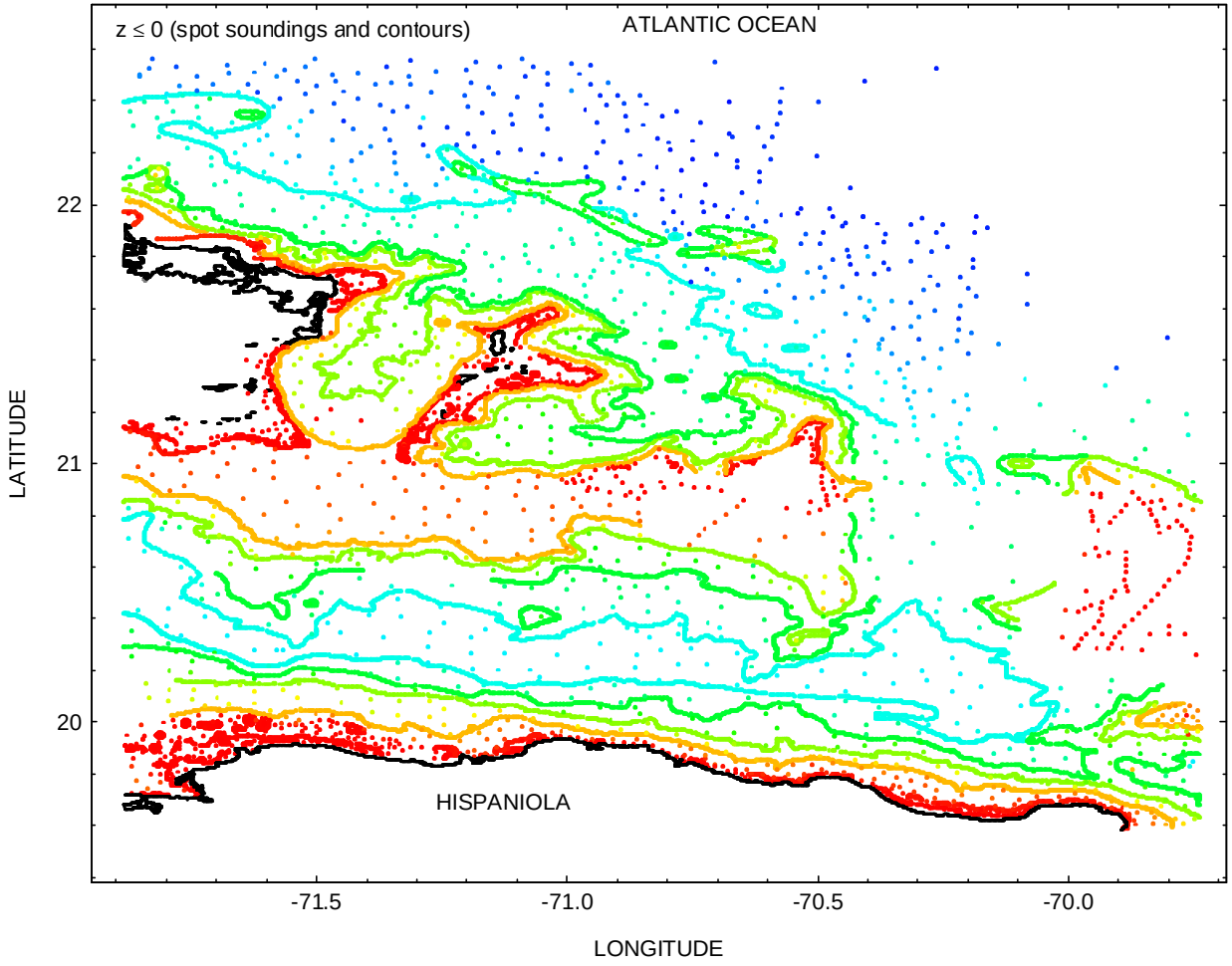
578	25720_Caicos_56_deg_WGS84.sho
1,428	25720_Caicos_57_deg_WGS84.sho
746	25720_Caicos_58_deg_WGS84.sho
1,768	25720_Caicos_5_deg_WGS84.sho
4,060	25720_Caicos_6_deg_WGS84.sho
2,108	25720_Caicos_7_deg_WGS84.sho
735	25720_Caicos_8_deg_WGS84.sho
1,320	25720_Caicos_9_deg_WGS84.sho
159,039	25720_Caicos_deg_WGS84.sho
1,925	25720_Cotton_Cay_deg_WGS84.sho

```
 23,562    25720_East_Caicos_deg_WGS84.sho
  1,505    25720_East_Cay_deg_WGS84.sho
  1,260    25720_Fort_Liberte_Islet_1_deg_WGS84.sho
    840    25720_Fort_Liberte_Islet_2_deg_WGS84.sho
  1,645    25720_Fort_Liberte_Islet_3_deg-WGS84.sho
 38,700    25720_Grand_Caicos_deg_WGS84.sho
  4,340    25720_Grand_Turk_deg_WGS84.sho
  1,505    25720_Isla_Cabras_deg_WGS84.sho
142,940    25720_Main_shoreline_deg_WGS84.sho
  1,190    25720_Manzanillo_Bay_Islet_1_deg_WGS84.sho
    714    25720_Pear_Cay_deg_WGS84.sho
  1,645    25720_Punta_de_La_Granja_Islet_deg_WGS84.sho
  3,465    25720_Salt_Cay_deg_WGS84.sho
    350    25720_Seal_Cays_2_deg_WGS84.sho
737,262    25720_Bathy_&_con_deg_WGS84.xyz
 72,446    25720_Spot_soundings_deg_WGS84.xyz

75 shoreline files
 2 bathymetry files
```

HISPANIOLA: 25720
Monte Cristi to Cabo Frances Viejo
WGS8484



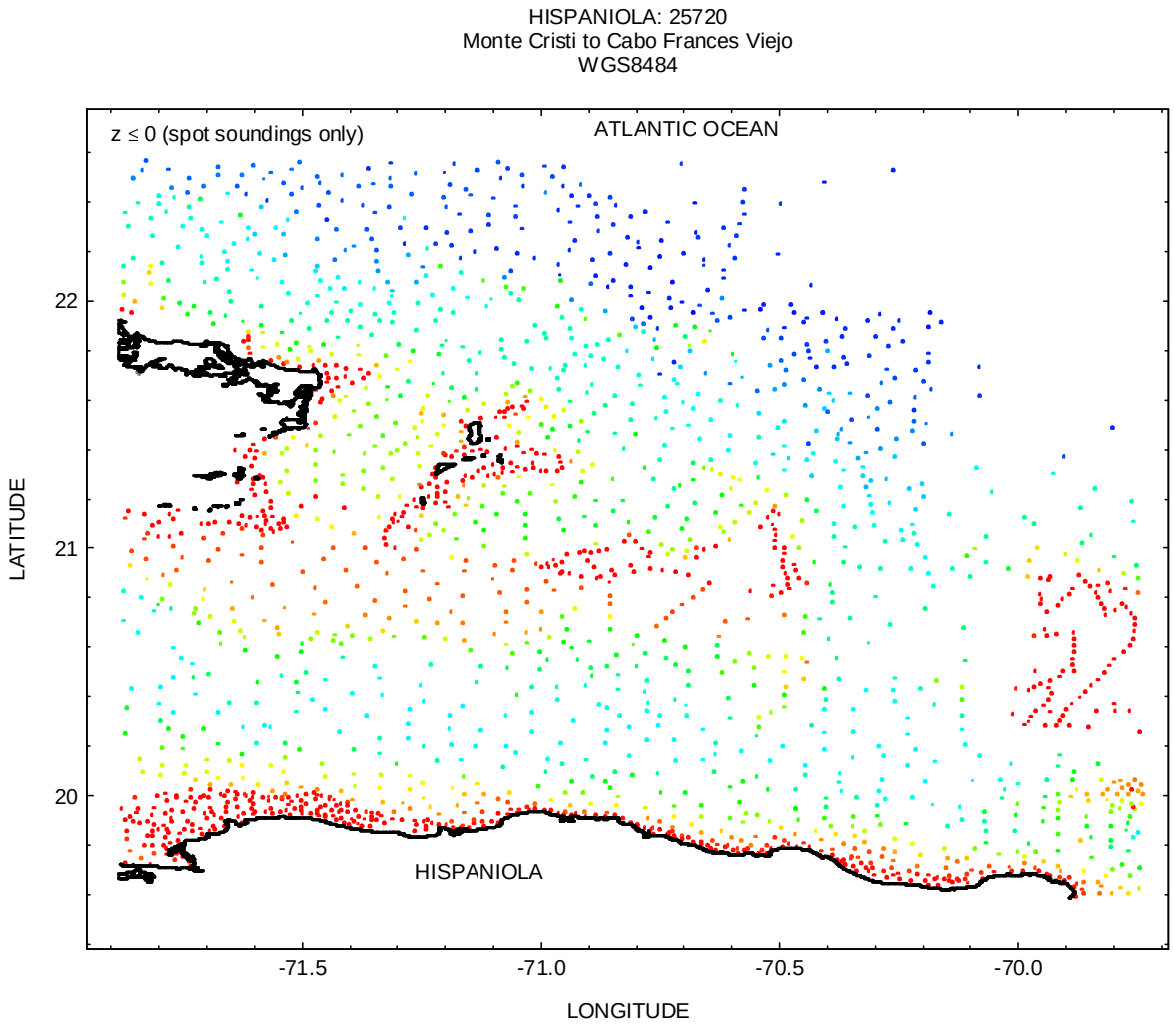

HISPANIOLA: 25720
Monte Cristi to Cabo Frances Viejo
WGS8484
z ≤ 0 (spot soundings only)
ATLANTIC OCEAN
HISPANIOLA
LATITUDE
LONGITUDE
22
21
20
-71.5
-71.0
-70.5
-70.0

Figure 4: Nautical Chart 25710 - Cabo Frances Viejo to Punta Nisibon

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25710

File size	File Name
986	25710_Bahia_de_La_Jina_Islet_1_deg_WGS72.sho
783	25710_Bahia_de_La_Jina_Islet_1_deg_WGS84.sho
1,015	25710_Cayo_Leventado_deg_WGS72.sho
783	25710_Cayo_Leventado_deg_WGS84.sho
350	25710_Cayo_Leventado_Islet_1_deg_WGS72.sho
270	25710_Cayo_Leventado_Islet_1_deg_WGS84.sho
315	25710_Cayo_Leventado_Islet_2_deg_WGS72.sho
243	25710_Cayo_Leventado_Islet_2_deg_WGS84.sho
578	25710_Cayo_Limon_deg_WGS72.sho
459	25710_Cayo_Limon_deg_WGS84.sho
612	25710_El_Burro_Islet_1_deg_WGS72.sho
486	25710_El_Burro_Islet_1_deg_WGS84.sho
578	25710_El_Burro_Islet_2_deg_WGS72.sho
459	25710_El_Burro_Islet_2_deg_WGS84.sho
884	25710_El_Burro_Islet_3_deg_WGS72.sho
702	25710_El_Burro_Islet_3_deg_WGS84.sho
107,010	25710_Main_shoreline_deg_WGS72.sho
80,910	25710_Main_shoreline_deg_WGS84.sho
578	25710_Naranjo_Arriba_Islet_1_deg_WGS72.sho
459	25710_Naranjo_Arriba_Islet_1_deg_WGS84.sho
630	25710_Naranjo_Arriba_Islet_2_deg_WGS72.sho
486	25710_Naranjo_Arriba_Islet_2_deg_WGS84.sho
315	25710_Pta_de_Barracote_Islet_1_deg_WGS72.sho
243	25710_Pta_de_Barracote_Islet_1_deg_WGS84.sho
374	25710_Pta_de_Barracote_Islet_2_deg_WGS72.sho
297	25710_Pta_de_Barracote_Islet_2_deg_WGS84.sho
476	25710_Pta_de_Leche_Islet_deg_WGS72.sho
378	25710_Pta_de_Leche_Islet_deg_WGS84.sho
1,496	25710_Rio_Baqui_Sand_Bar_deg_WGS72.sho
1,188	25710_Rio_Baqui_Sand_Bar_deg_WGS84.sho
748	25710_Sta_Barbara_de_Samana_Islet_1_deg_WGS72.sho
594	25710_Sta_Barbara_de_Samana_Islet_1_deg_WGS84.sho
10,224	25710c_Spot_soundings_deg_WGS72.xyz
8,192	25710c_Spot_soundings_deg_WGS84.xyz
60,804	25710_Spot_soundings_deg_WGS72.xyz
51,405	25710_Spot_soundings_deg_WGS84.xyz

32 shoreline files (16 in WGS72 datum, 16 in WGS84 datum)
4 bathymetry files (2 in WGS72 datum, 2 in WGS84 datum)

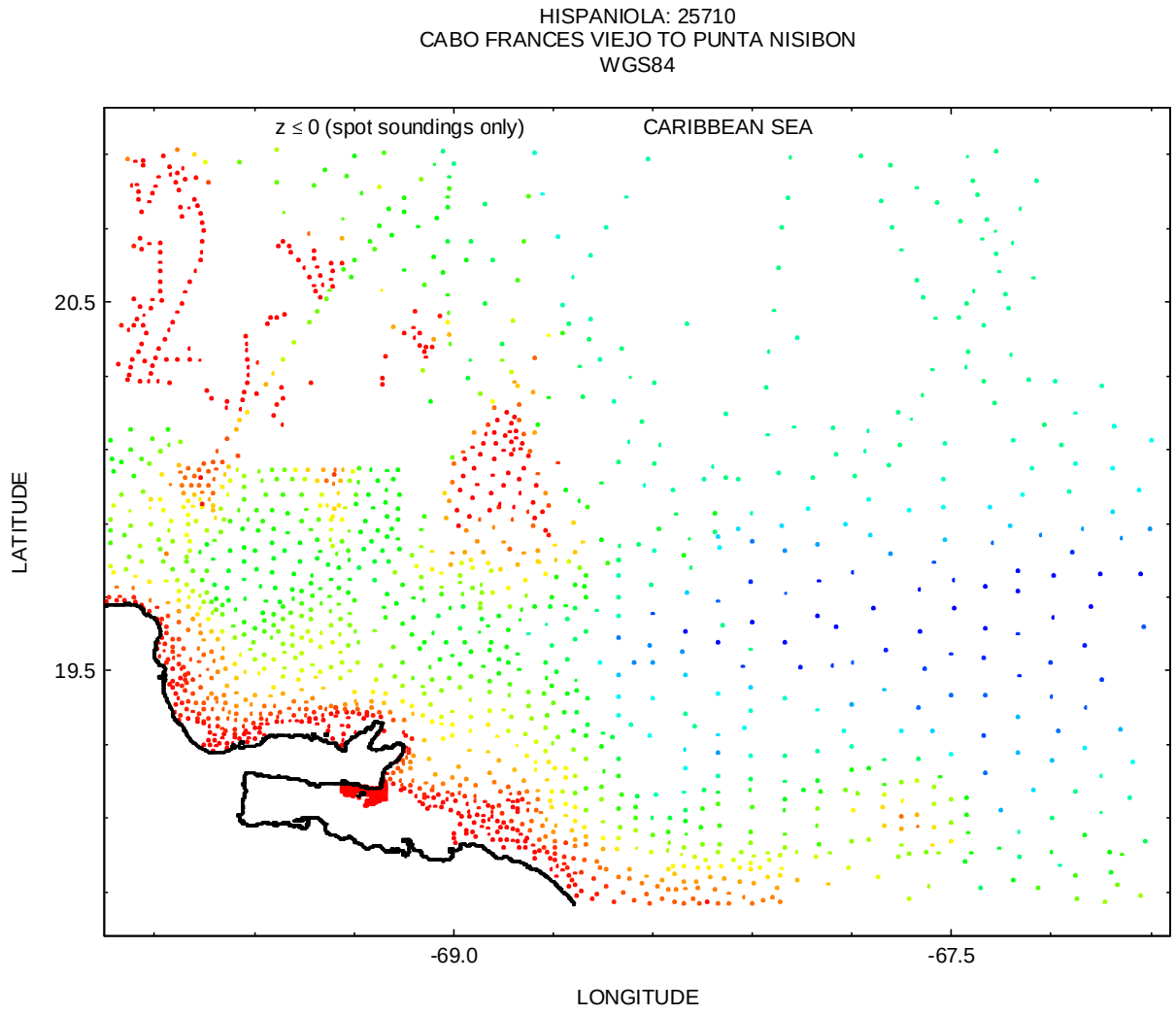
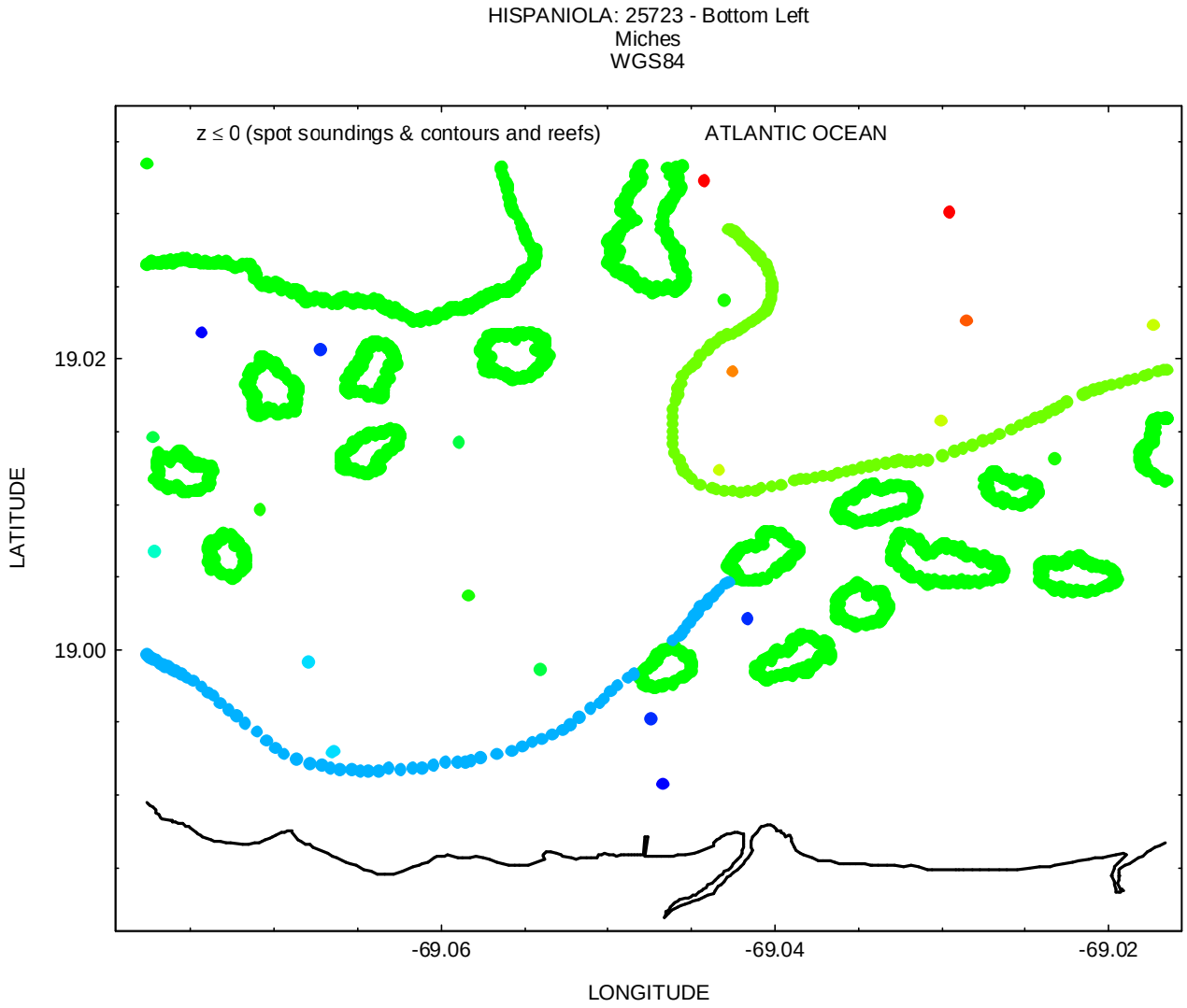

HISPANIOLA: 25710
CABO FRANCES VIEJO TO PUNTA NISIBON
WGS84
z ≤ 0 (spot soundings only)
CARIBBEAN SEA
20.5
19.5
LATITUDE
-69.0
-67.5
LONGITUDE

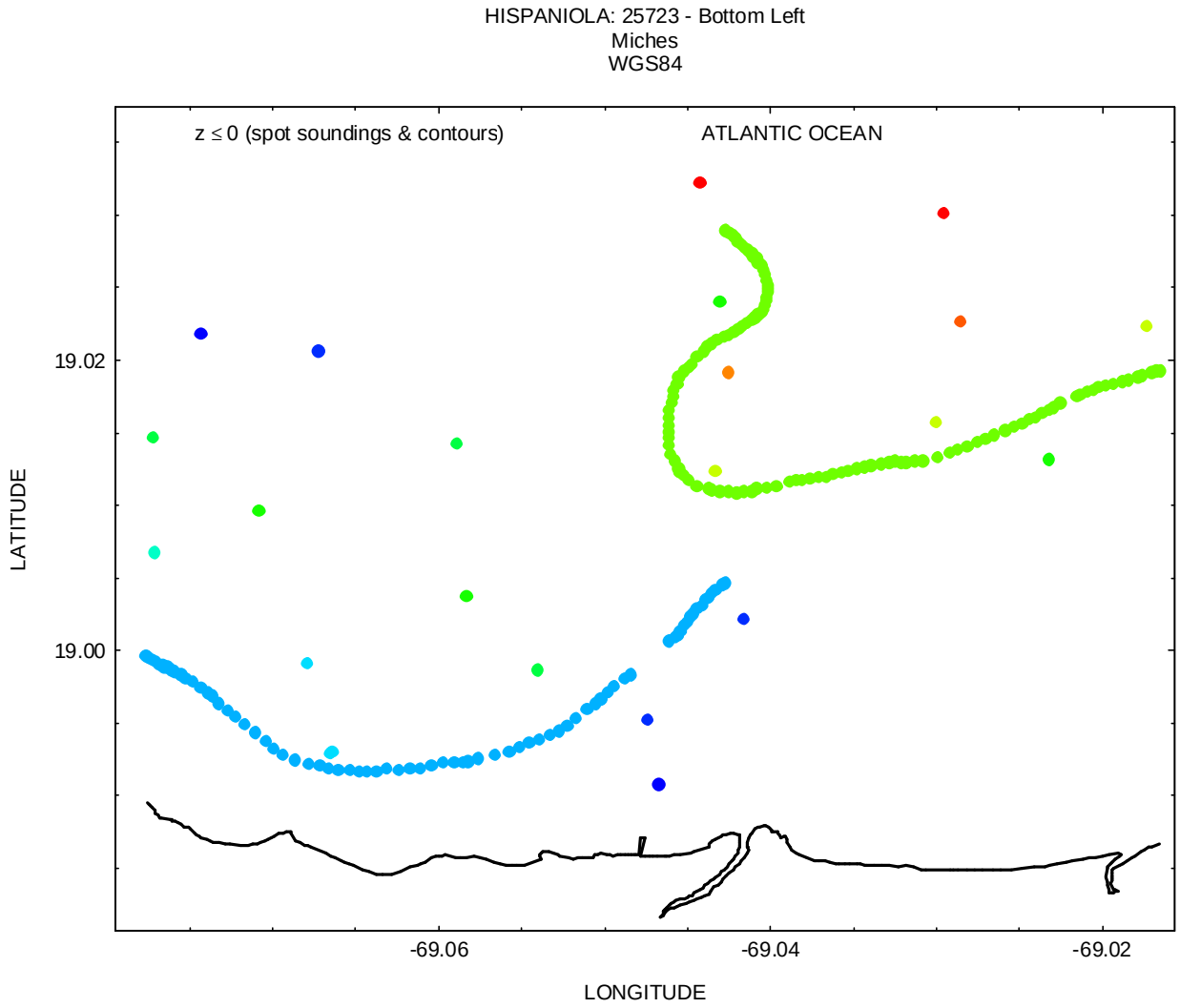
Figure 5: Nautical Chart 25723 - Miches (bottom left chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25723\Bottom_Left_(Miches)

File size	File Name
11,448	25723a_Bottom_Left_Main_shore_deg_WGS84.sho
99,504	25723a_Bottom_Left_reefs_deg_WGS84.sho
8,178	25723a_Bottom_Left_Miches_Bathy&con_deg_WGS84.xyz
875	25723a_Bottom_Left_Miches_Spot_soundings_deg_WGS84.xyz

2 shoreline files
2 bathymetry files


HISPANIOLA: 25723 - Bottom Left
Miches
WGS84
z ≤ 0 (spot soundings & contours and reefs)
ATLANTIC OCEAN
19.02
19.00
LATITUDE
-69.06
-69.04
-69.02
LONGITUDE


HISPANIOLA: 25723 - Bottom Left
Miches
WGS84
z ≤ 0 (spot soundings & contours)
ATLANTIC OCEAN
19.02
19.00
LATITUDE
-69.06
-69.04
-69.02
LONGITUDE

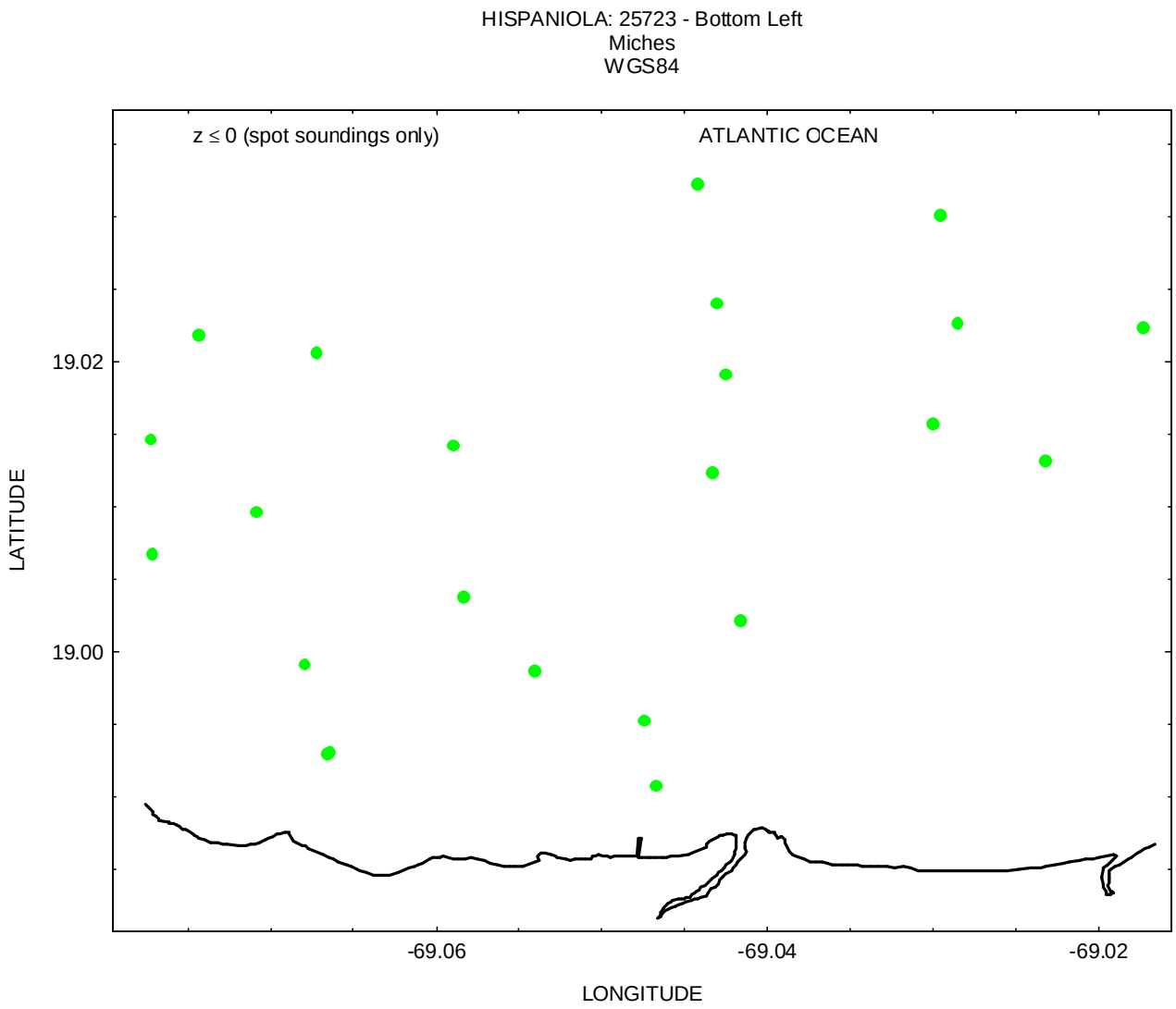

HISPANIOLA: 25723 - Bottom Left
Miches
WGS84
z ≤ 0 (spot soundings only)
ATLANTIC OCEAN
19.02
19.00
LATITUDE
-69.06
-69.04
-69.02
LONGITUDE

Figure 6: Nautical Chart 25723 - Santa Barbara de Samaná (bottom right chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25723\Bottom_Right_(Sta_Barbara_de_Samana)

File Size	File Name
1,008	25723B_Cayito_de_Puerto_de_Luis_deg_WGS84.sho
1,015	25723B_Cayo_Arena_deg_WGS84.sho
1,665	25723B_Cayo_Chico_deg_WGS84.sho
980	25723B_Cayo_del_Sur_deg_WGS84.sho
792	25723B_Cayo_de_Las_Flechas_1_deg_WGS84.sho
1,152	25723B_Cayo_de_Las_Flechas_2_deg_WGS84.sho
2,275	25723B_Cayo_La_Farola_deg_WGS84.sho
5,760	25723B_Cayo_Levantado_deg_WGS84.sho
1,296	25723B_Cayo_Levantado_Islet_1_deg_WGS84.sho
1,152	25723B_Cayo_Paloma_1_deg_WGS84.sho
700	25723B_Cayo_Paloma_2_deg_WGS84.sho
39,528	25723B_Main_shore_deg_WGS84.sho
646	25723B_Pta_de_Genaro_Islet_1_deg_WGS84.sho
720	25723B_Pto_Viejo_Islet_1_deg_WGS84.sho
665	25723B_Pto_Viejo_Islet_2_deg_WGS84.sho
24,272	25723b_Bottom_Right_Bathy&con_deg_WGS84.xyz
24,272	25723b_Bottom_Right_Spot_soundings_deg_WGS84.xyz

15 shoreline files
2 bathymetry files

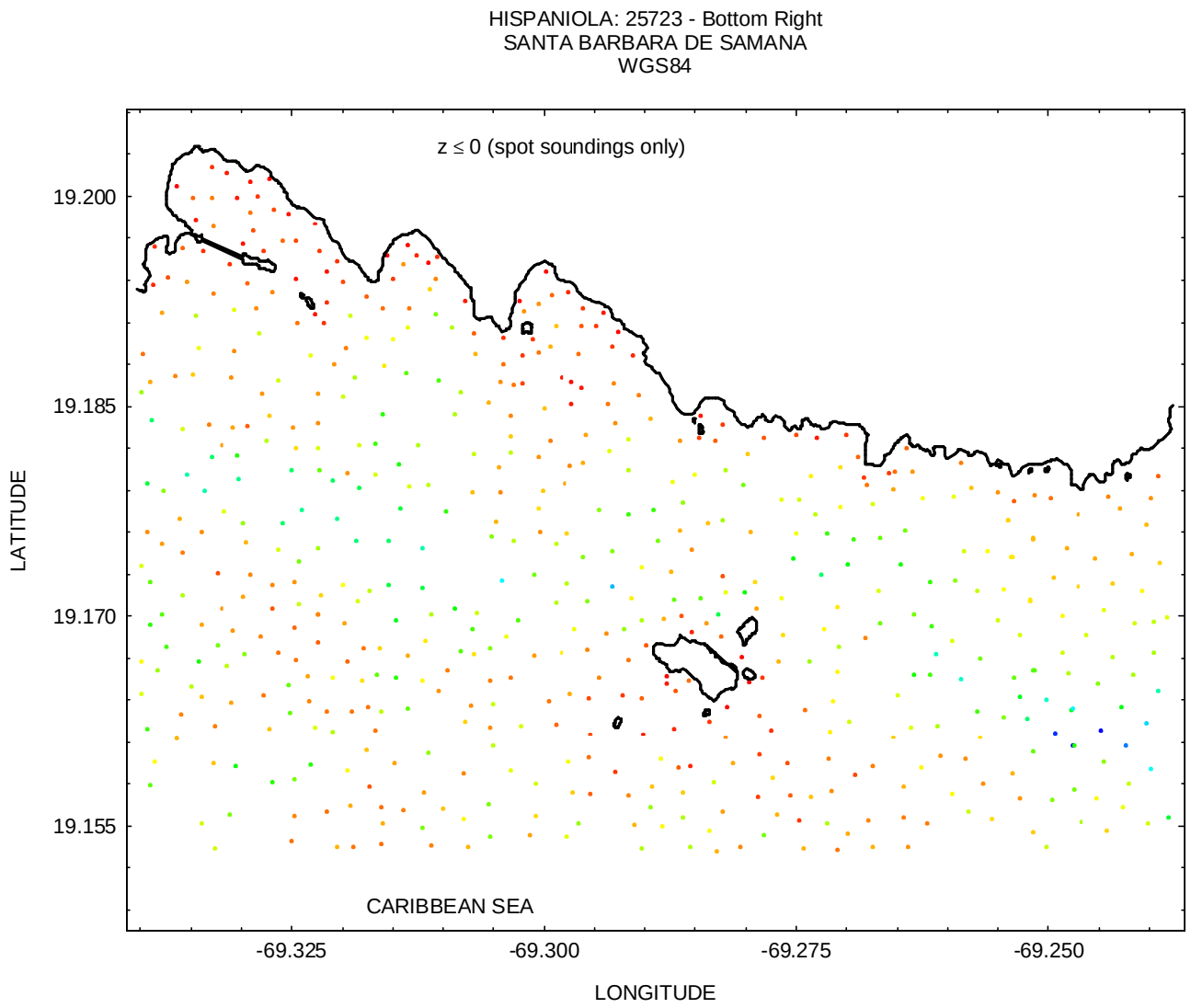
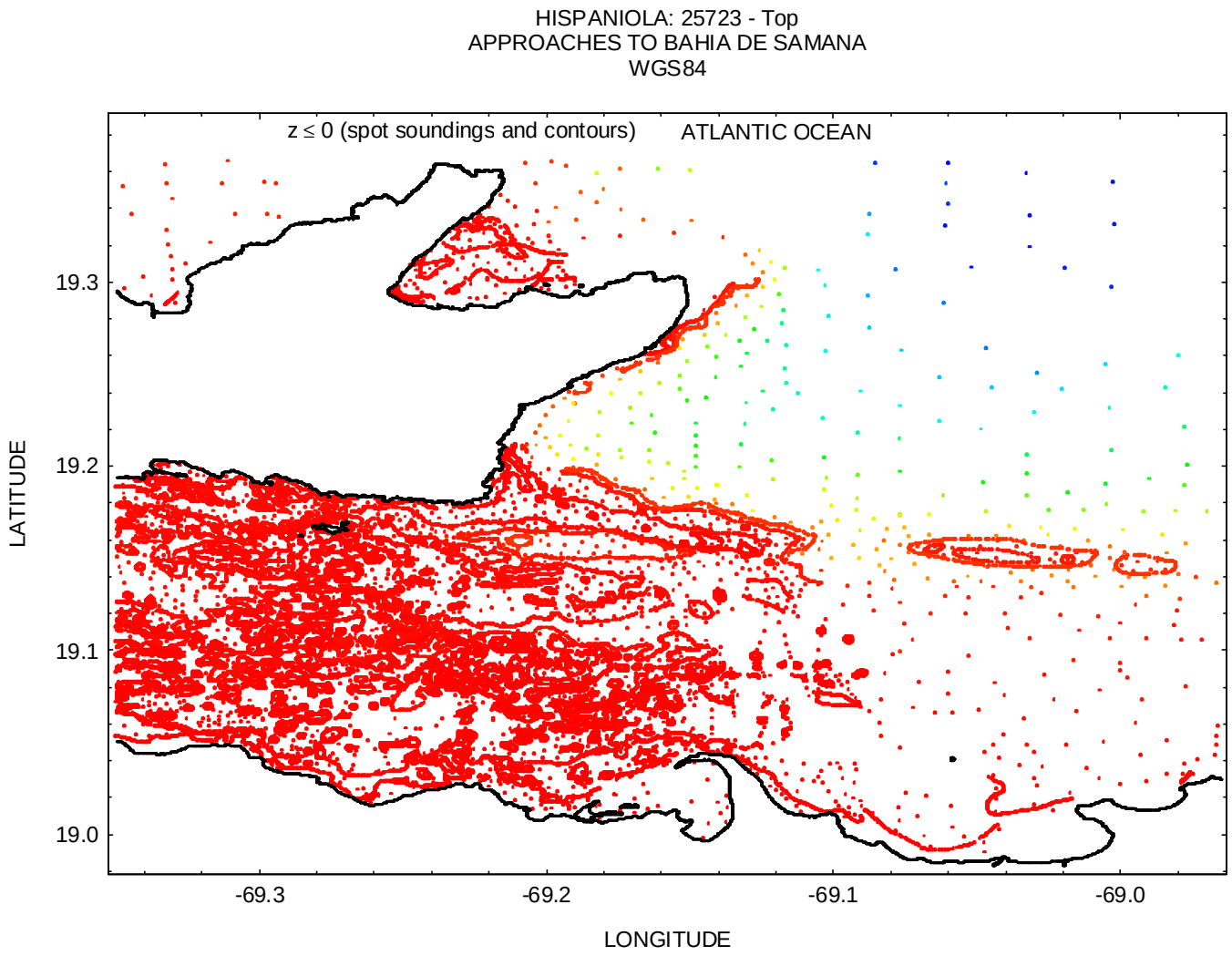

HISPANIOLA: 25723 - Bottom Right
SANTA BARBARA DE SAMANA
WGS84
z ≤ 0 (spot soundings only)
19.200
19.185
19.170
19.155
LATITUDE
CARIBBEAN SEA
-69.325
-69.300
-69.275
-69.250
LONGITUDE

Figure 7: Nautical Chart 25723 - Approaches to Bahia de Samaná (top chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25723\Top

File Size	File Name
455	25723_Cayito_de_Puerto_de_Luis_deg_WGS84.sho
1,155	25723_Cayo_Chico_deg_WGS84.sho
2,244	25723_Cayo_Culebra_deg_WGS84.sho
5,530	25723_Cayo_La_Bocaina_deg_WGS84.sho
1,540	25723_Cayo_La_Farola_deg_WGS84.sho
3,920	25723_Cayo_Levantado_1_deg_WGS84.sho
1,054	25723_Cayo_Levantado_2_deg_WGS84.sho
748	25723_Islet_1_deg_WGS84.sho
850	25723_Islet_2_deg_WGS84.sho
805	25723_Islet_3_deg_WGS84.sho
665	25723_Islet_4_deg_WGS84.sho
165,172	25723_North_shore_deg_WGS84.sho
1,260	25723_Piedra_de_La_Ballena_deg_WGS84.sho
385	25723_Pta_Balandra_Islet_1_deg_WGS84.sho
756	25723_Pta_Las_Flechas_Islet_1_deg_WGS84.sho
612	25723_Pta_La_Palometa_Islet_1_deg_WGS84.sho
118,285	25723_South_shore_deg_WGS84.sho
1,186,542	25723_Bathy&con_deg_WGS84.xyz
134,152	25723_Spot_soundings_deg_WGS84.xyz

17 shoreline files
2 bathymetry files


HISPANIOLA: 25723 - Top
APPROACHES TO BAHIA DE SAMANA
WGS84
z ≤ 0 (spot soundings and contours)
ATLANTIC OCEAN
19.3
19.2
19.1
19.0
LATITUDE
-69.3
-69.2
-69.1
-69.0
LONGITUDE

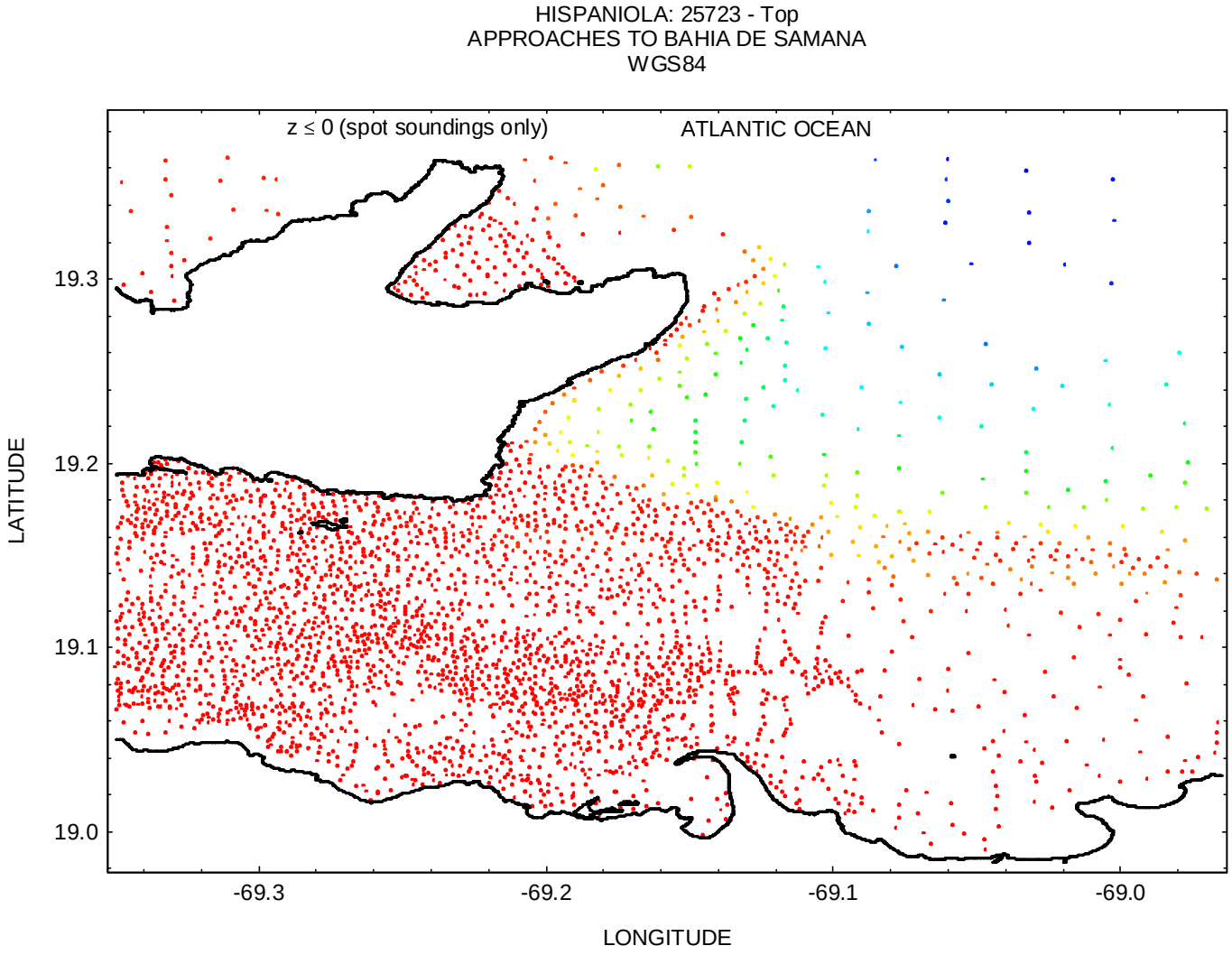

HISPANIOLA: 25723 - Top
APPROACHES TO BAHIA DE SAMANA
WGS84
z ≤ 0 (spot soundings only)
ATLANTIC OCEAN
19.3
19.2
19.1
19.0
LATITUDE
-69.3
-69.2
-69.1
-69.0
LONGITUDE

Figure 8: Nautical Chart 25724 - Bahia de Samaná

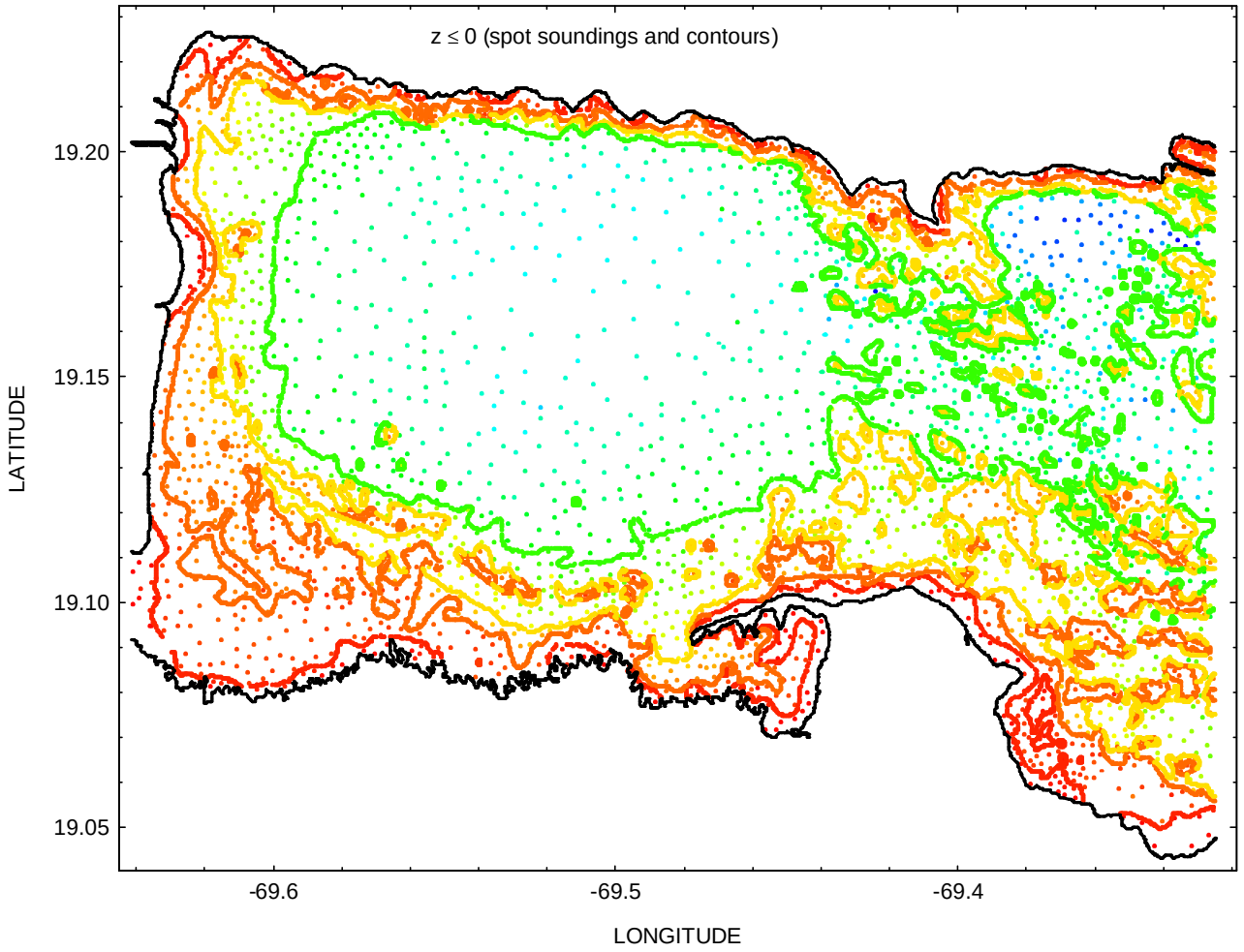
Directory of E:\Work\Republica Dominicana\Nautical_Charts\25724

File Size	File Name
57,486	25724_Bahia_de_Samana_north_shore_deg_WGS84.sho
88,454	25724_Bahia_de_Samana_south_shore_deg_WGS84.sho
884	25724_Bahia_de_San_Lorenzo_Islet_61_deg_WGS.sho
858	25724_Cayos_de_Los_Pajaros_Islet_43_deg_WGS84.sho
650	25724_Cayos_de_Los_Pajaros_Islet_44_deg_WGS84.sho
962	25724_Cayos_de_Los_Pajaros_Islet_45_deg_WGS84.sho
650	25724_Cayos_de_Los_Pajaros_Islet_46_deg_WGS84.sho
1,820	25724_Cayos_de_Los_Pajaros_Islet_47_deg_WGS84.sho
1,404	25724_Cayos_de_Los_Pajaros_Islet_48_deg_WGS84.sho
1,248	25724_Cayos_de_Los_Pajaros_Islet_49_deg_WGS84.sho
754	25724_Cayos_de_Los_Pajaros_Islet_50_deg_WGS84.sho
962	25724_Cayos_de_Los_Pajaros_Islet_51_deg_WGS84.sho
1,404	25724_Cayo_Cacata_deg_WGS84.sho
1,950	25724_Cayo_del_Calvario_deg_WGS84.sho
1,092	25724_Cayo_de_la_Garza_deg_WGS84.sho
2,314	25724_Cayo_de_Pancho_Macho_deg_WGS84.sho
858	25724_Cayo_de_Willy_deg_WGS84.sho
1,040	25724_Cayo_Pelu_deg_WGS84.sho
1,534	25724_Cayo_Redondo_deg_WGS84.sho
728	25724_Ensenada_deg_Callo_Hondo_Islet_62_deg_WGS84.sho
2,002	25724_Islet_10_deg_WGS84.sho
1,404	25724_Islet_11_deg_WGS84.sho
728	25724_Islet_12_deg_WGS84.sho
1,144	25724_Islet_13_deg_WGS84.sho
1,378	25724_Islet_14_deg_WGS84.sho
624	25724_Islet_15_deg_WGS84.sho
962	25724_Islet_18_deg_WGS84.sho
1,118	25724_Islet_19_deg_WGS84.sho
1,326	25724_Islet_20_deg_WGS84.sho
650	25724_Islet_21_deg_WGS84.sho
780	25724_Islet_22_deg_WGS84.sho
1,898	25724_Islet_23_deg_WGS84.sho
520	25724_Islet_24_deg_WGS84.sho
3,198	25724_Islet_25_deg_WGS84.sho
832	25724_Islet_26_deg_WGS84.sho
858	25724_Islet_27_deg_WGS84.sho
884	25724_Islet_28_deg_WGS84.sho
910	25724_Islet_29_deg_WGS84.sho
2,470	25724_Islet_30_deg_WGS84.sho
1,014	25724_Islet_31_deg_WGS84.sho
1,040	25724_Islet_32_deg_WGS84.sho
1,118	25724_Islet_33_deg_WGS84.sho
2,756	25724_Islet_34_deg_WGS84.sho
676	25724_Islet_35_deg_WGS84.sho
728	25724_Islet_36_deg_WGS84.sho
1,430	25724_Islet_37_deg_WGS84.sho
1,794	25724_Islet_38_deg_WGS84.sho
884	25724_Islet_39_deg_WGS84.sho
754	25724_Islet_40_deg_WGS84.sho
1,196	25724_Islet_41_deg_WGS84.sho
1,326	25724_Islet_42_deg_WGS84.sho
910	25724_Islet_52_deg_WGS84.sho
858	25724_Islet_53_deg_WGS84.sho
754	25724_Islet_54_deg_WGS84.sho
806	25724_Islet_55_deg_WGS84.sho
754	25724_Islet_56_deg_WGS84.sho
598	25724_Islet_57_deg_WGS84.sho
754	25724_Islet_58_deg_WGS84.sho
832	25724_Islet_59_deg_WGS84.sho
1,092	25724_Islet_6_deg_WGS84.sho
858	25724_Islet_7_deg_WGS84.sho

2,730 25724_Islet_8_deg_WGS84.sho
884 25724_Islet_9_deg_WGS84.sho
572 25724_Pta_Pascuala_Islet_63_deg_WGS84.sho
1,140,456 25724_Bathy&con_deg_WGS84.xyz
119,140 25724_Spot_soundings_deg_WGS84.xyz

64 shoreline files
2 bathymetry file

HISPANIOLA: 25724
BAHIA DE SAMANA
WGS84



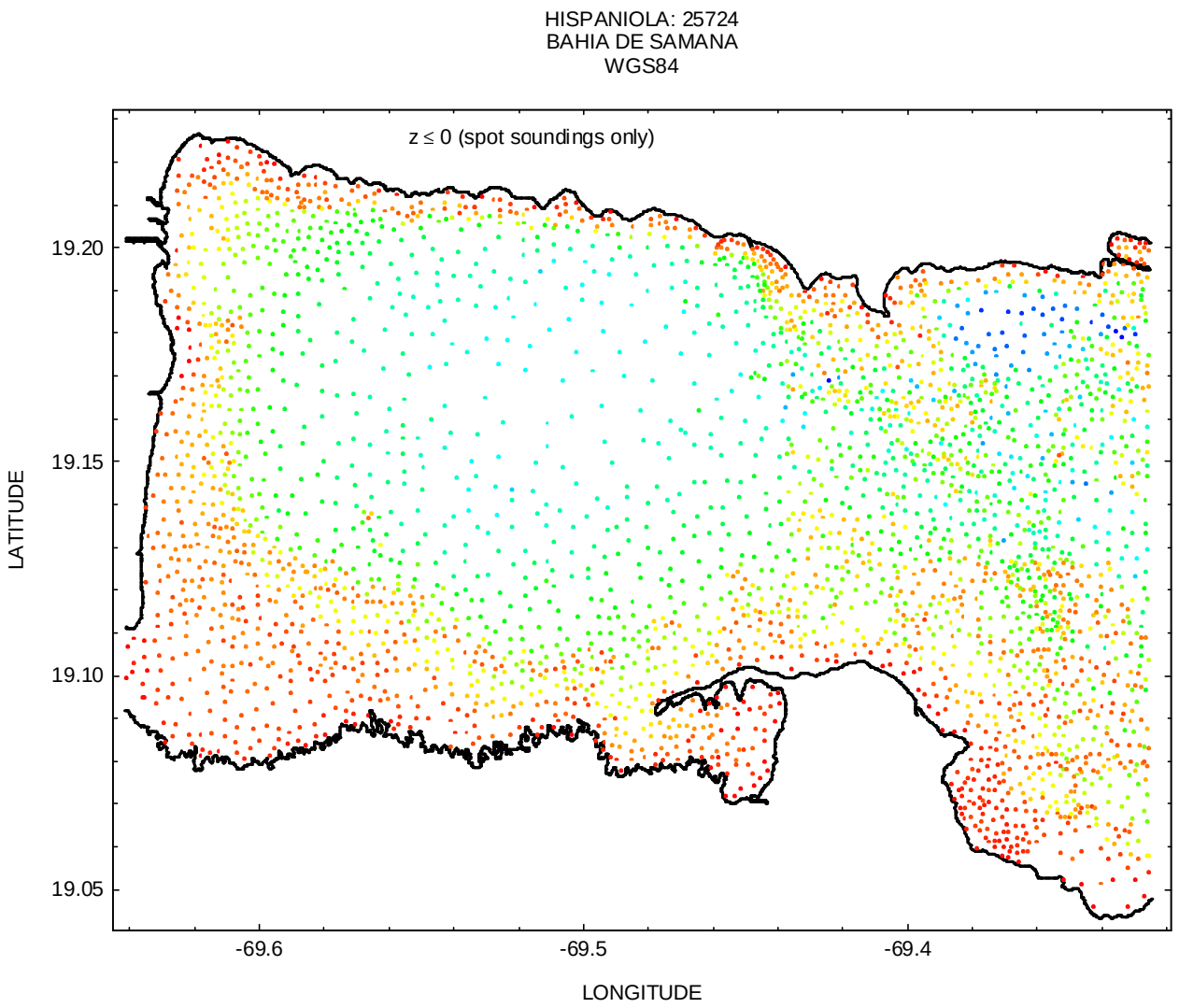
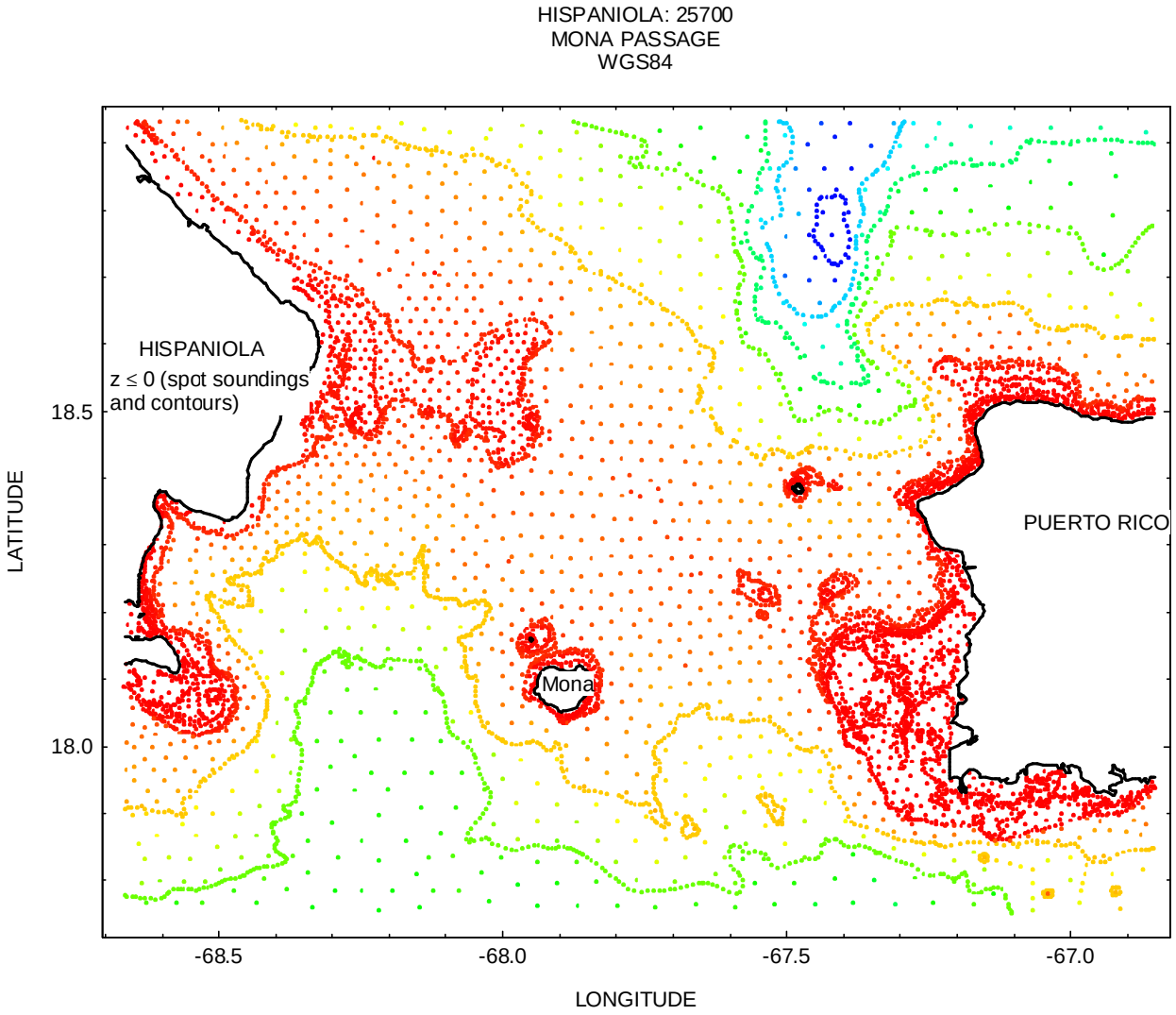

HISPANIOLA: 25724
BAHIA DE SAMANA
WGS84
z ≤ 0 (spot soundings only)
19.20
19.15
19.10
19.05
LATITUDE
-69.6
-69.5
-69.4
LONGITUDE

Figure 9: Nautical Chart 25700 - Mona Passage

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25700

File Size	File Name
313	25700_Cayo_Raton_deg_WGS72.sho
243	25700_Cayo_Raton_deg_WGS84.sho
3,743	25700_Desecheo_deg_WGS72.sho
2,889	25700_Desecheo_deg_WGS84.sho
11,111	25700_Hispaniola_Main_shoreline_deg_WGS72.sho
8,401	25700_Hispaniola_Main_shoreline_deg_WGS84.sho
313	25700_Isla_Catalinita_deg_WGS72.sho
243	25700_Isla_Catalinita_deg_WGS84.sho
2,214	25700_Isla_Mona_deg_WGS72.sho
1,674	25700_Isla_Mona_deg_WGS84.sho
1,927	25700_Isla_Saona_deg_WGS72.sho
1,457	25700_Isla_Saona_deg_WGS84.sho
328	25700_Monito_deg_WGS72.sho
248	25700_Monito_deg_WGS84.sho
16,523	25700_Puerto_Rico_Main_shoreline_deg_WGS72.sho
12,493	25700_Puerto_Rico_Main_shoreline_deg_WGS84.sho
263,477	25700_Mona_Passage_Bathy&con_deg_WGS72.xyz
212,941	25700_Mona_Passage_Bathy&con_deg_WGS84.xyz
87,912	25700_Mona_Passage_Spot_soundings_deg_WGS72.xyz
70,845	25700_Mona_Passage_Spot_soundings_deg_WGS84.xyz

16 shoreline files (8 in WGS72 datum, 8 in WGS84 datum
4 bathymetry files (2 in WGS72 datum, 4 in WGS84 datum)


HISPANIOLA: 25700
MONA PASSAGE
WGS84
HISPANIOLA
z ≤ 0 (spot soundings
and contours)
PUERTO RICO
Mona
18.5
18.0
LATITUDE
-68.5
-68.0
-67.5
-67.0
LONGITUDE

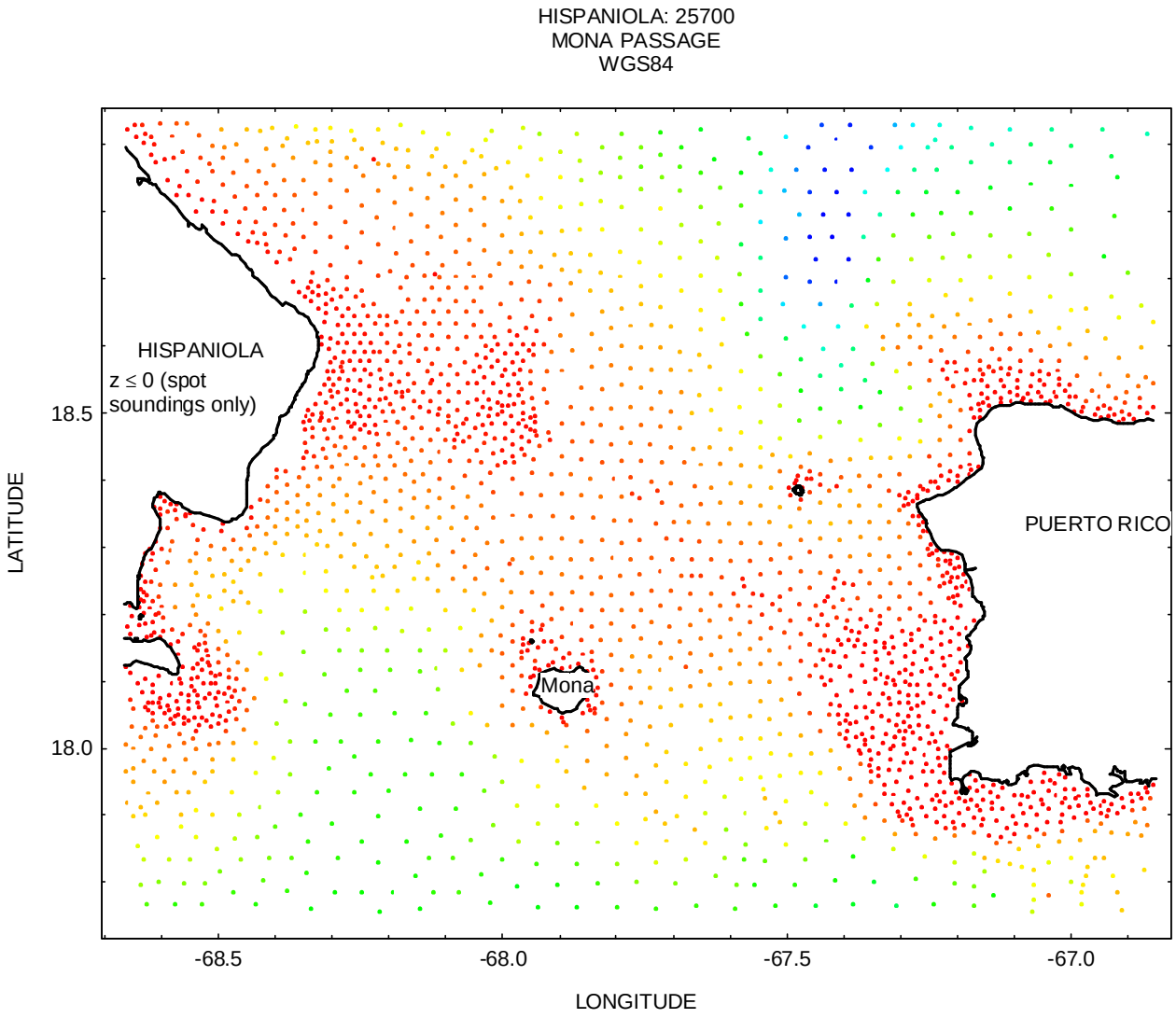

HISPANIOLA: 25700
MONA PASSAGE
WGS84
HISPANIOLA
z ≤ 0 (spot soundings only)
PUERTO RICO
Mona
18.5
18.0
LATITUDE
-68.5
-68.0
-67.5
-67.0
LONGITUDE

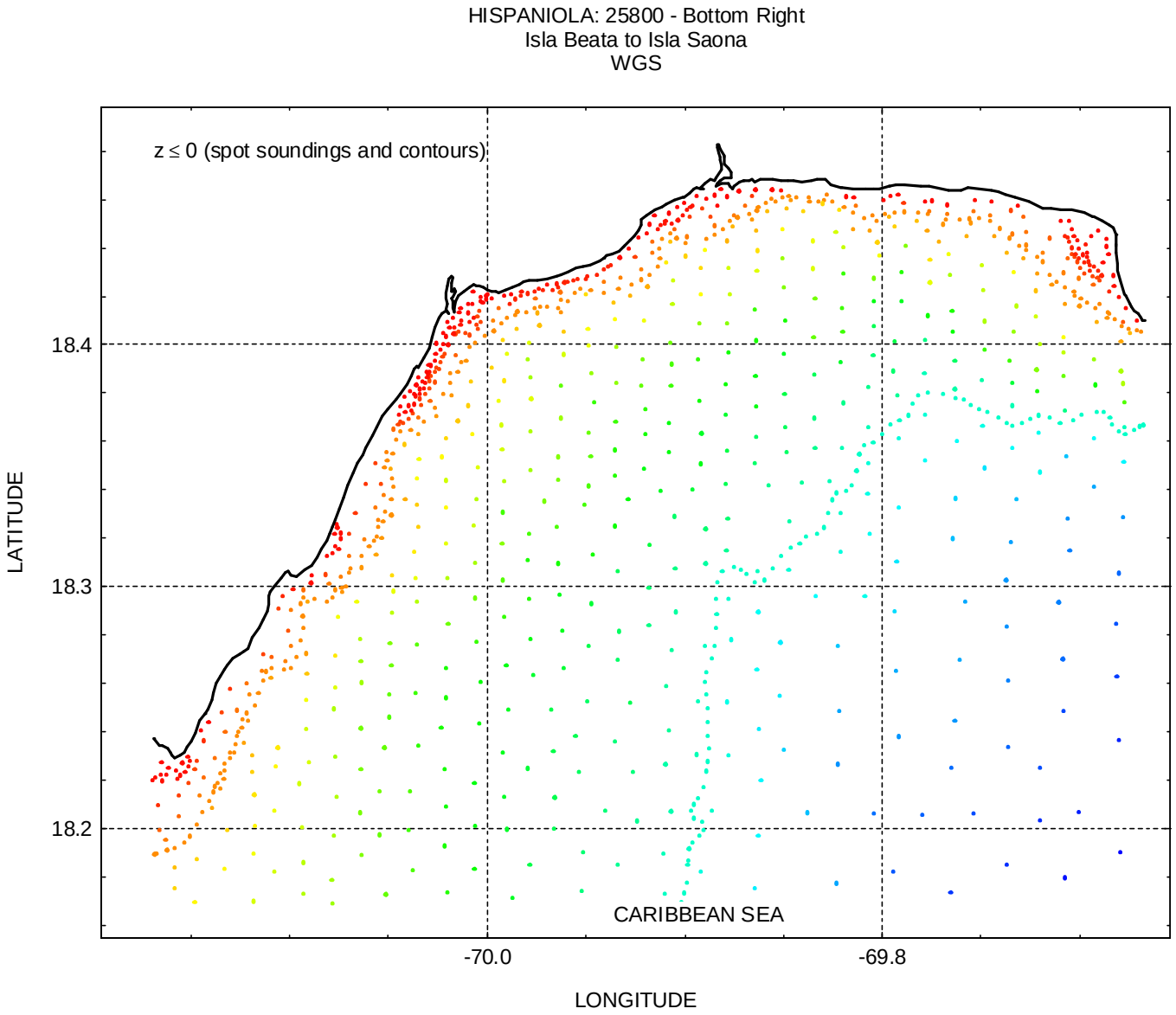
Figure 10: Nautical Chart 25800 - Isla Beata to Isla Saona (bottom right chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25800\Bottom_Right

File Size File Name
    9,717 25800_Bottom_Right_Main_shorelin_deg_WGS84.sho

   32,802 25800_Bottom_Right_Bathy&con_deg_WGS84.xyz
   23,717 25800_Bottom_Right_Spot_soundings_deg_WGS84.xyz

1 shoreline file
2 bathymetry files


HISPANIOLA: 25800 - Bottom Right
Isla Beata to Isla Saona
WGS
z ≤ 0 (spot soundings and contours)
18.4
18.3
18.2
LATITUDE
CARIBBEAN SEA
-70.0
-69.8
LONGITUDE

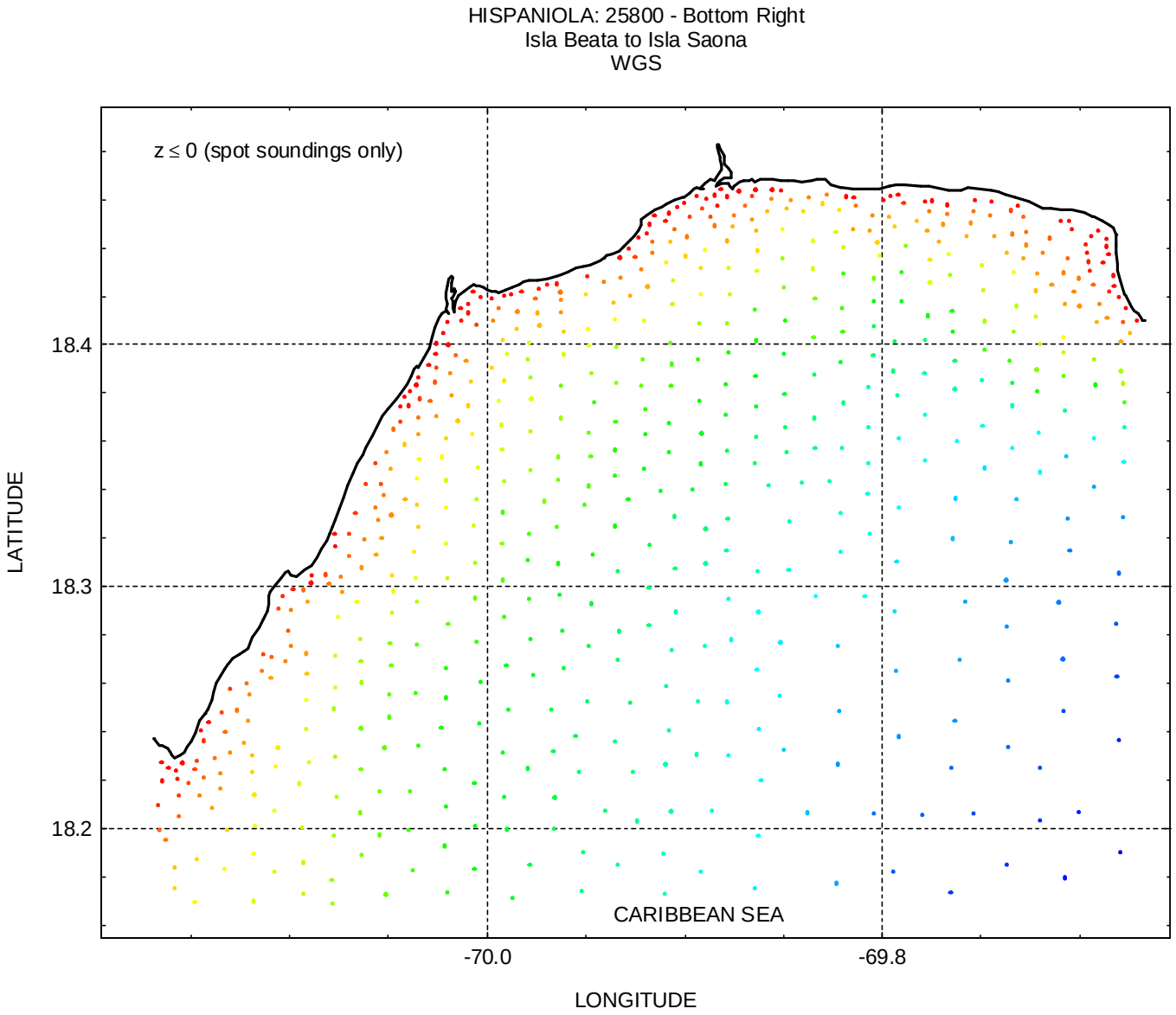

HISPANIOLA: 25800 - Bottom Right
Isla Beata to Isla Saona
WGS
z ≤ 0 (spot soundings only)
18.4
18.3
18.2
LATITUDE
CARIBBEAN SEA
-70.0
-69.8
LONGITUDE

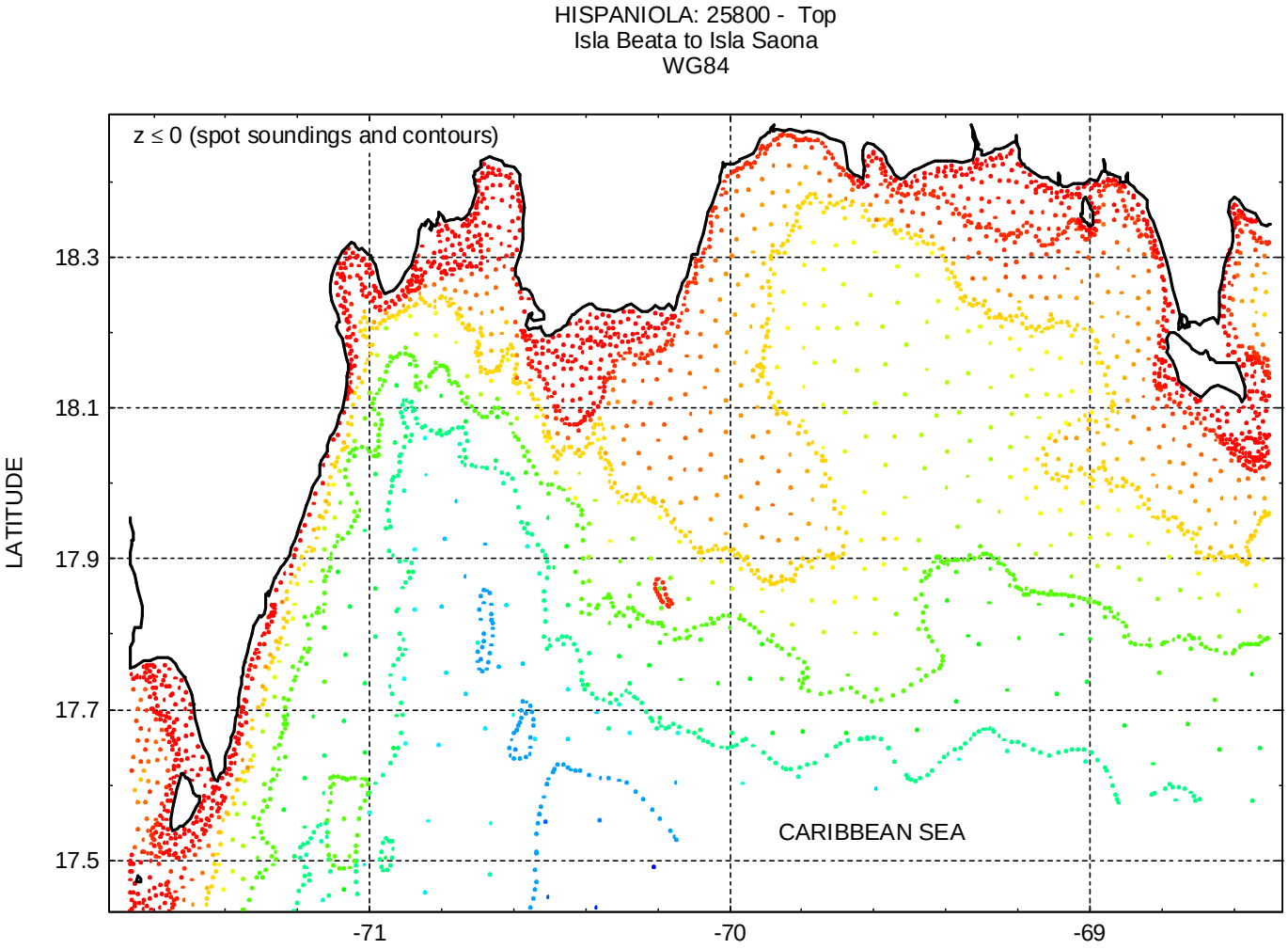
Figure 11: Nautical Chart 25800 - Isla Beata to Isla Saona (top chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25800\Top

File Size File Name
      287 25800_Top_Isla_Alto_Velo_deg_WGS84.sho
    1,154 25800_Top_Isla_Beata_deg_WGS84.sho
      826 25800_Top_Isla_Catalina_deg_WGS84.sho
    1,766 25800_Top_Isla_Saona_deg_WGS84.sho
   21,853 25800_Top_Main_shoreline_deg_WGS84.sho

  163,426 25800_Top_Bathy&con_deg_WGS84.xyz
   62,234 25800_Top_Spot_soundings_deg_WGS84.xyz

5 shoreline files
2 bathymetry files


HISPANIOLA: 25800 - Top
Isla Beata to Isla Saona
WG84
z ≤ 0 (spot soundings and contours)
LATITUDE
18.3
18.1
17.9
17.7
17.5
-71
-70
-69
CARIBBEAN SEA

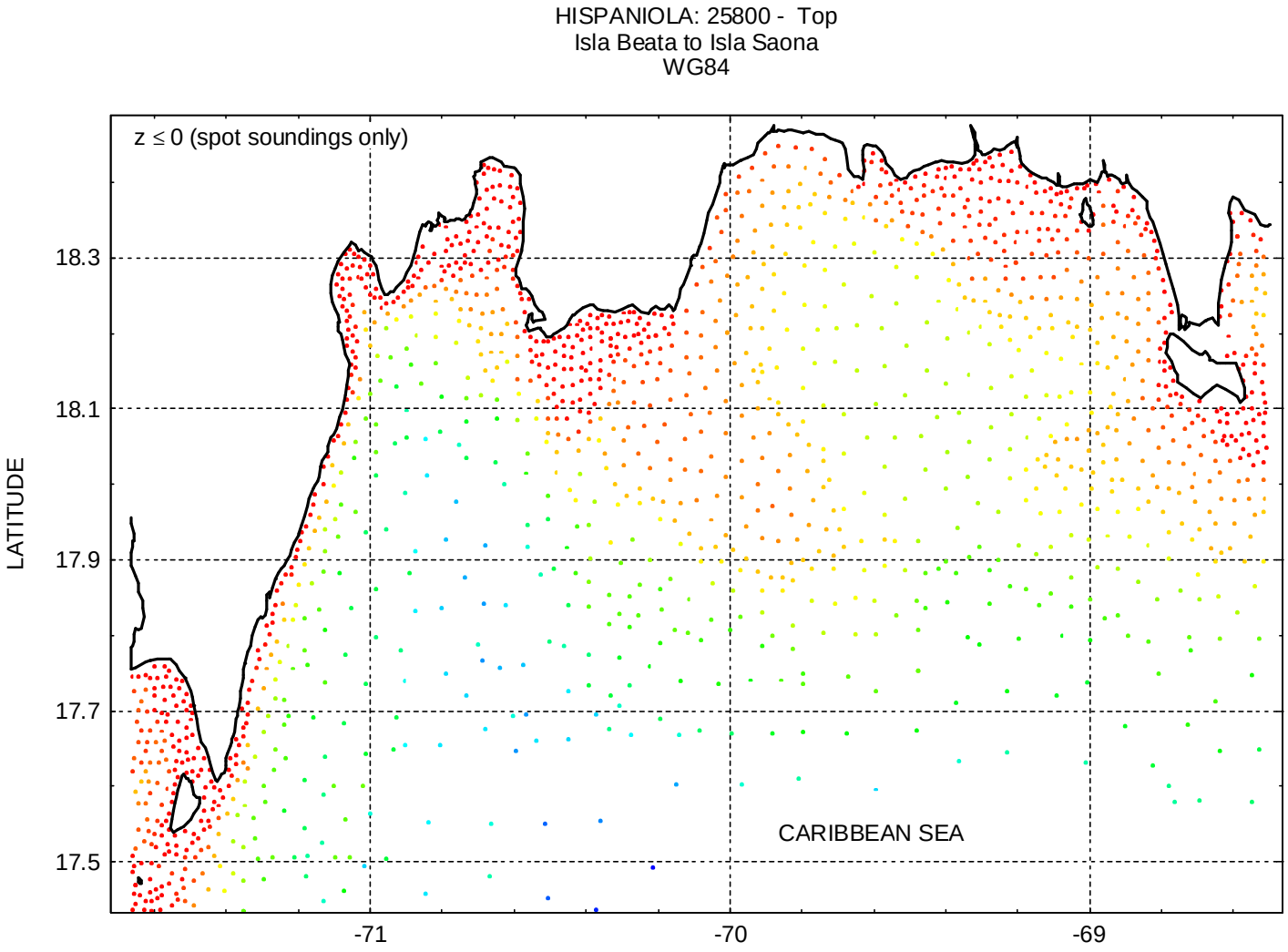

HISPANIOLA: 25800 - Top
Isla Beata to Isla Saona
WG84
z ≤ 0 (spot soundings only)
18.3
18.1
17.9
17.7
17.5
LATITUDE
CARIBBEAN SEA
-71
-70
-69

Figure 12: Nautical Chart 25803 - Bahia de Puerto Plata

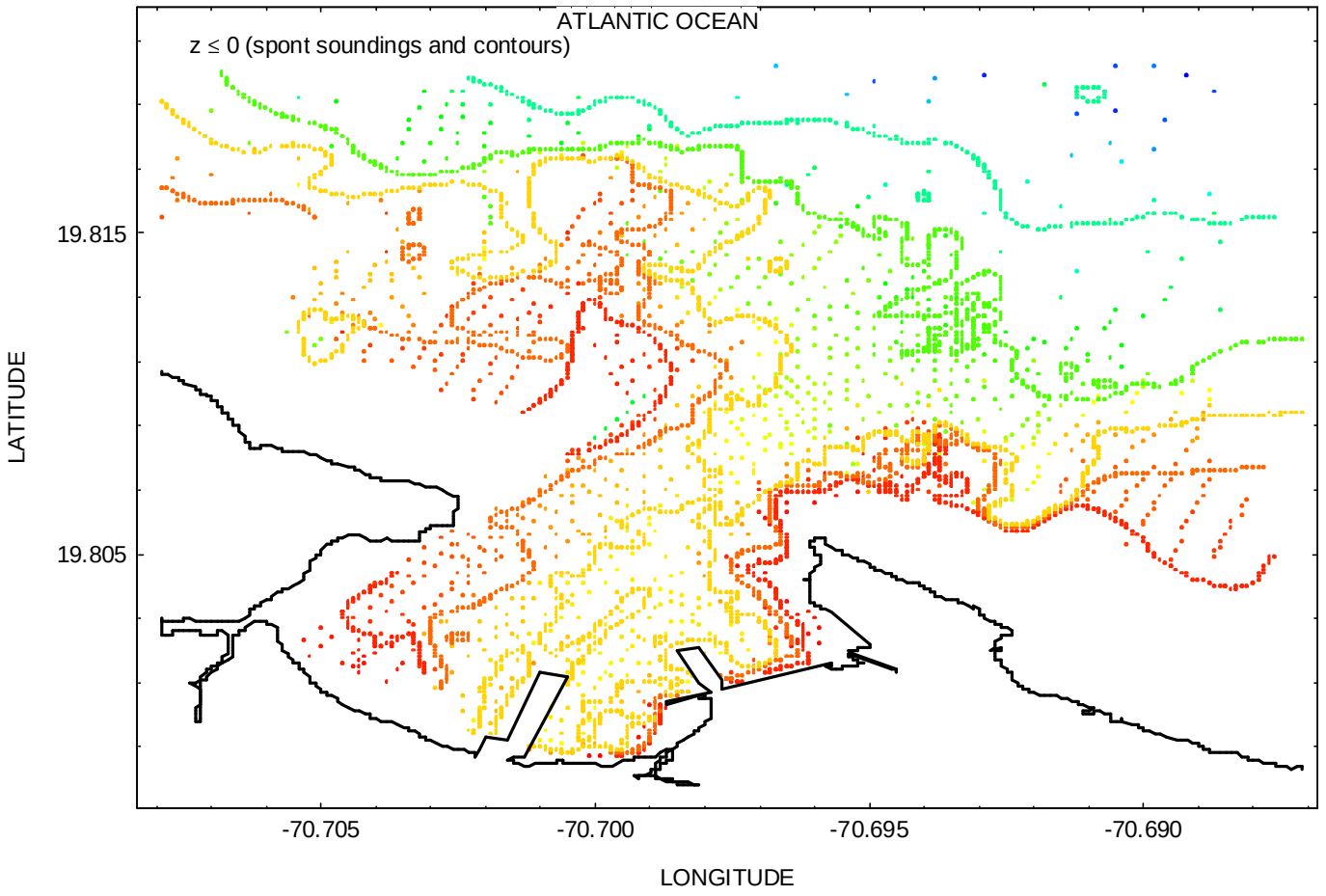
Directory of E:\Work\Republica Dominicana\Nautical_Charts\25803

File Size File Name
   44,964 25803_Bahia_de_Pto_Plata_Main_shore_deg_WGS84.sho

  233,085 25803_Bahia_de_Pto_Plata_Bathy&con_deg_WGS84.xyz
   46,916 25803_Bahia_de_Pto_Plata_Spot_soundings_deg_WGS84.xyz
   88,232 25803_reefs_deg_WGS84.xyz

1 shoreline file
2 bathymetry files

HISPANIOLA: 25803
BAHIA DE PUERTO PLATA
WGS84



HISPANIOLA: 25803
BAHIA DE PUERTO PLATA
WGS84

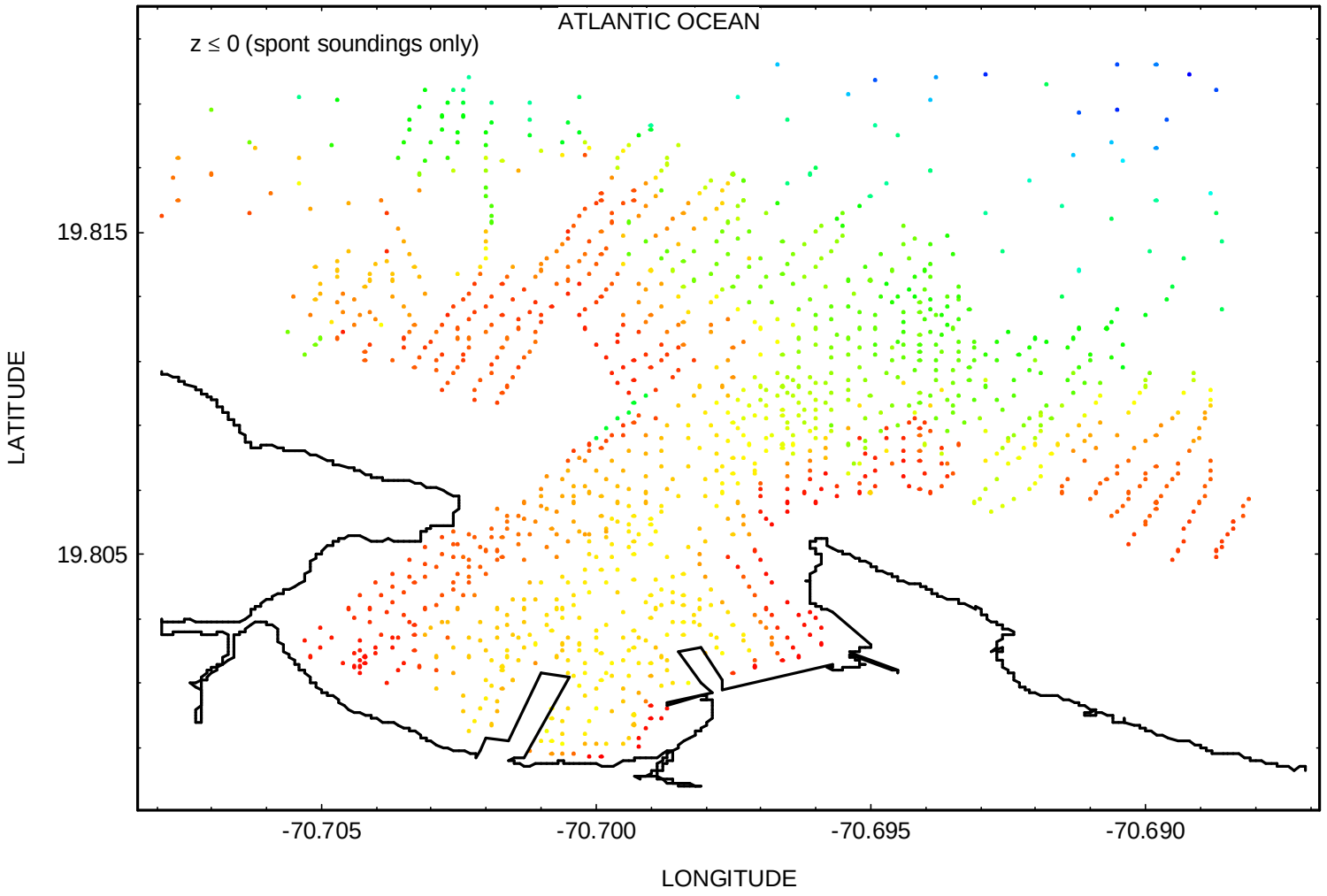


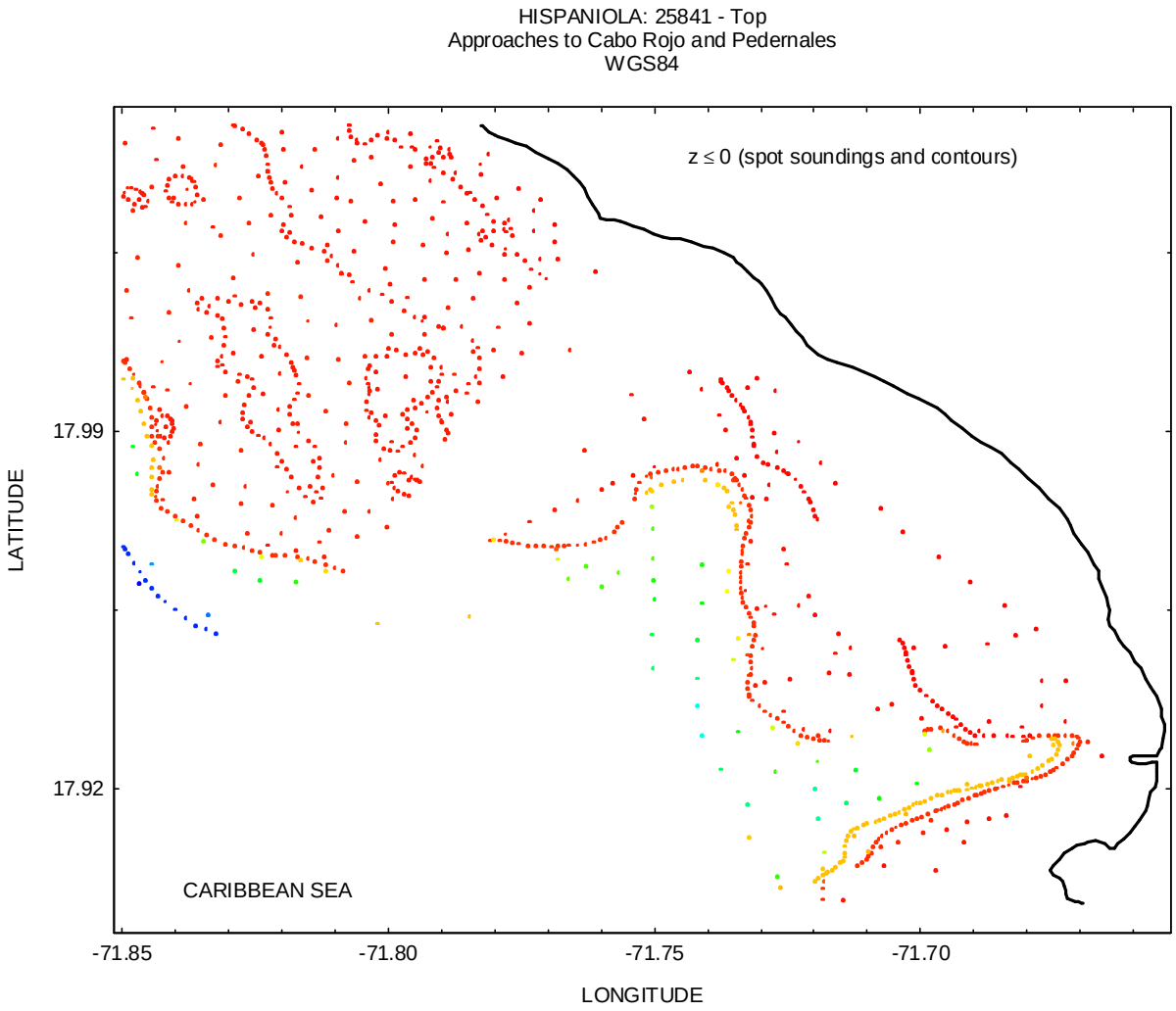
Figure 13: Nautical Chart 25841 - Approaches to Cabo Rojo and Pedernales (top chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25841\25841_Top

File Size File Name
6,560 25841_Top_Main_shoreline_deg_WGS84.sho

41,120 25841_Top_Bathy&con_deg_WGS84.xyz
14,393 25841_Top_Spot_soundings_deg_WGS84.xyz

1 shoreline file
2 bathymetry files


HISPANIOLA: 25841 - Top
Approaches to Cabo Rojo and Pedernales
WGS84
z ≤ 0 (spot soundings and contours)
17.99
17.92
LATITUDE
CARIBBEAN SEA
-71.85
-71.80
-71.75
-71.70
LONGITUDE

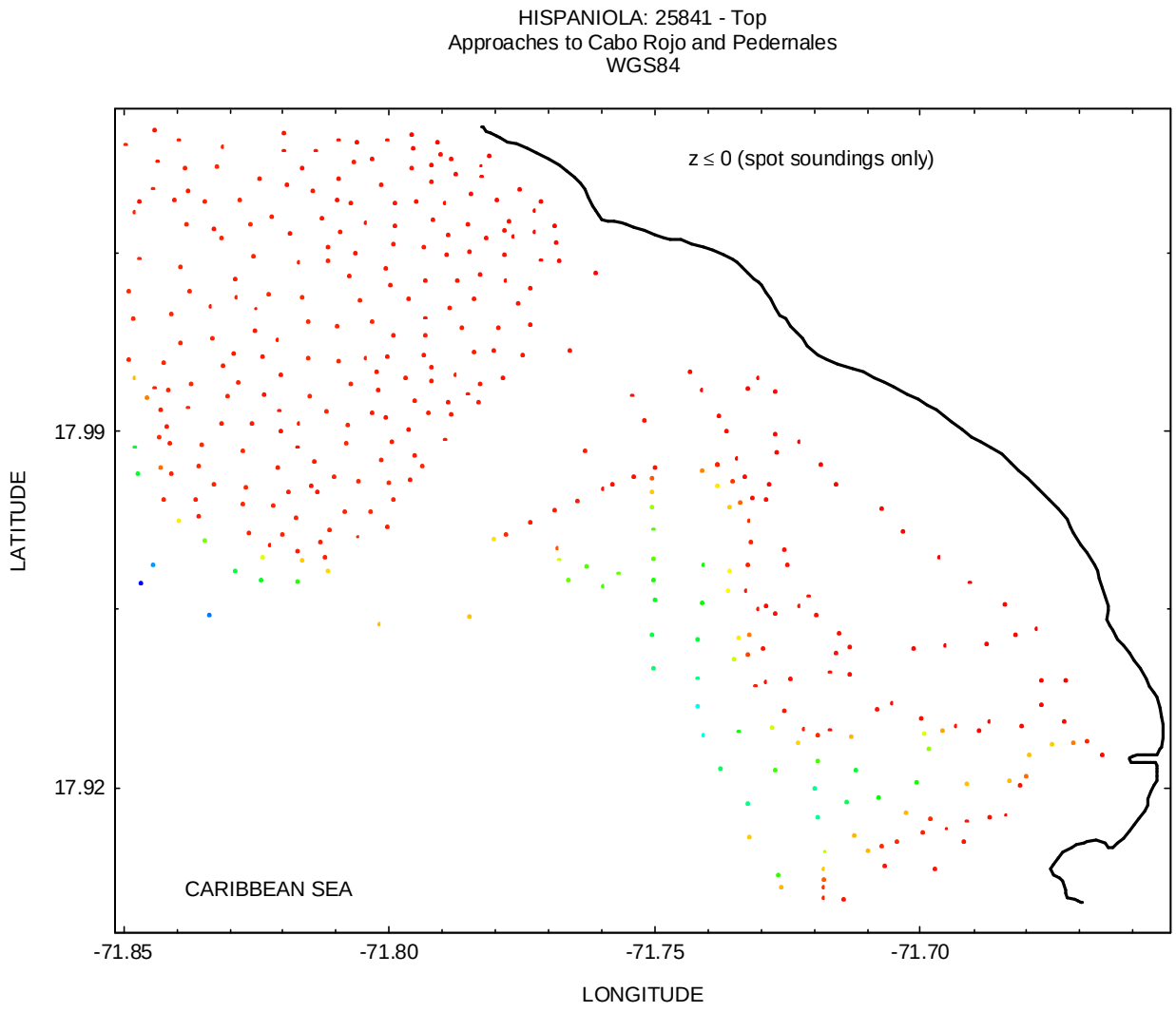

HISPANIOLA: 25841 - Top
Approaches to Cabo Rojo and Pedernales
WGS84
z ≤ 0 (spot soundings only)
CARIBBEAN SEA
17.99
17.92
LATITUDE
-71.85
-71.80
-71.75
-71.70
LONGITUDE

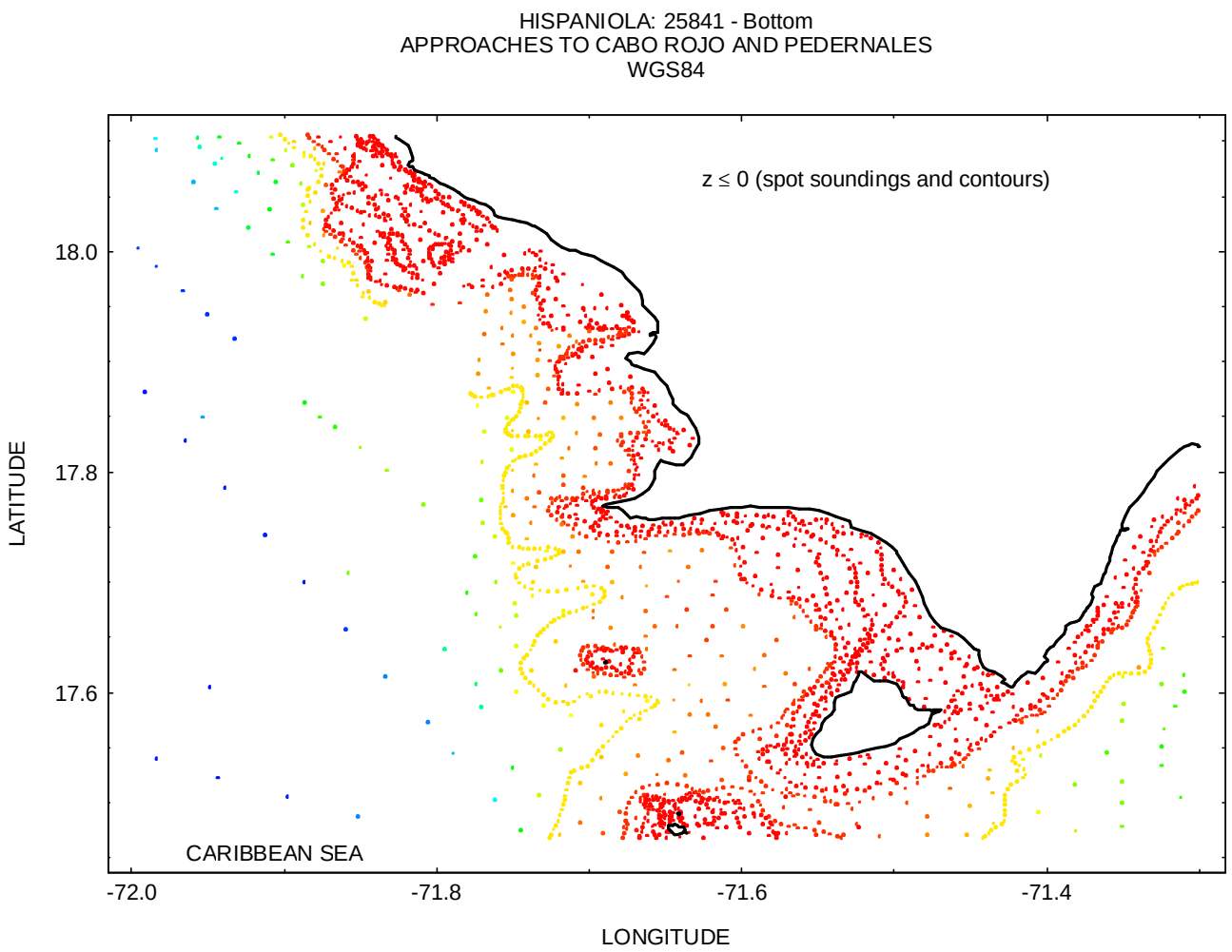
Figure 14: Nautical Chart 25841 - Approaches to Cabo Rojo and Pedernales (bottom chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25841\25841_Bottom

File Size File Name
    779 25841_Bottom_Isla_Alto_Velo_deg_WGS84.sho
  2,624 25841_Bottom_Isla_Beata_deg_WGS84.sho
    244 25841_Bottom_Los_Frailes_deg_WGS84.sho
 11,029 25841_Bottom_Main_shoreline_deg_WGS84.sho
    244 25841_Bottom_Piedra_Negra_deg_WGS84.sho

 99,095 25841_Bottom_Bathy&con_deg_WGS84.xyz
 32,597 25841_Bottom_Spot_soundings_deg_WGS84.xyz

5 shoreline files
2 bathymetry files


HISPANIOLA: 25841 - Bottom
APPROACHES TO CABO ROJO AND PEDERNALES
WGS84
z ≤ 0 (spot soundings and contours)
18.0
17.8
17.6
LATITUDE
CARIBBEAN SEA
-72.0
-71.8
-71.6
-71.4
LONGITUDE

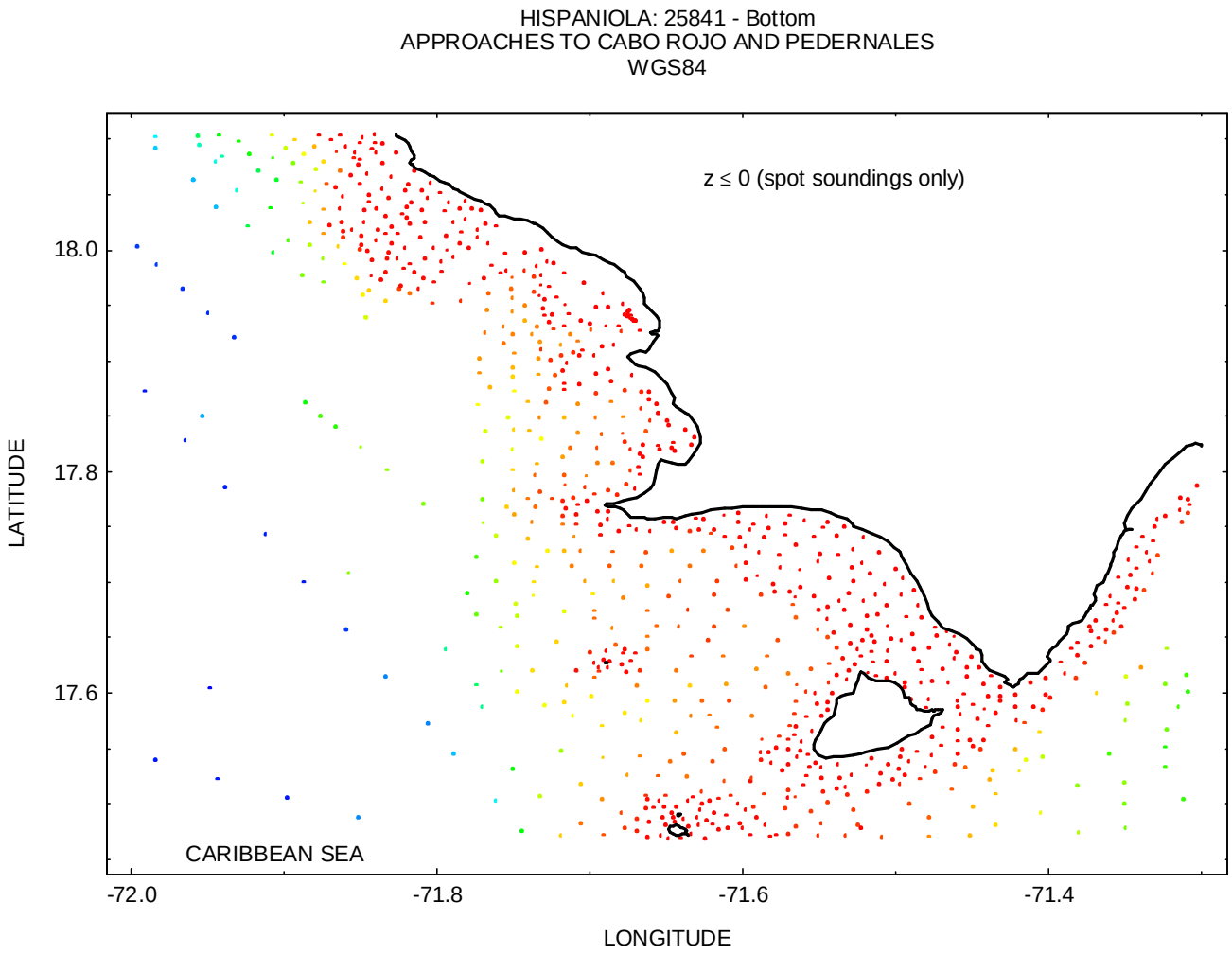

HISPANIOLA: 25841 - Bottom
APPROACHES TO CABO ROJO AND PEDERNALES
WGS84
z ≤ 0 (spot soundings only)
CARIBBEAN SEA
LATITUDE
18.0
17.8
17.6
-72.0
-71.8
-71.6
-71.4
LONGITUDE

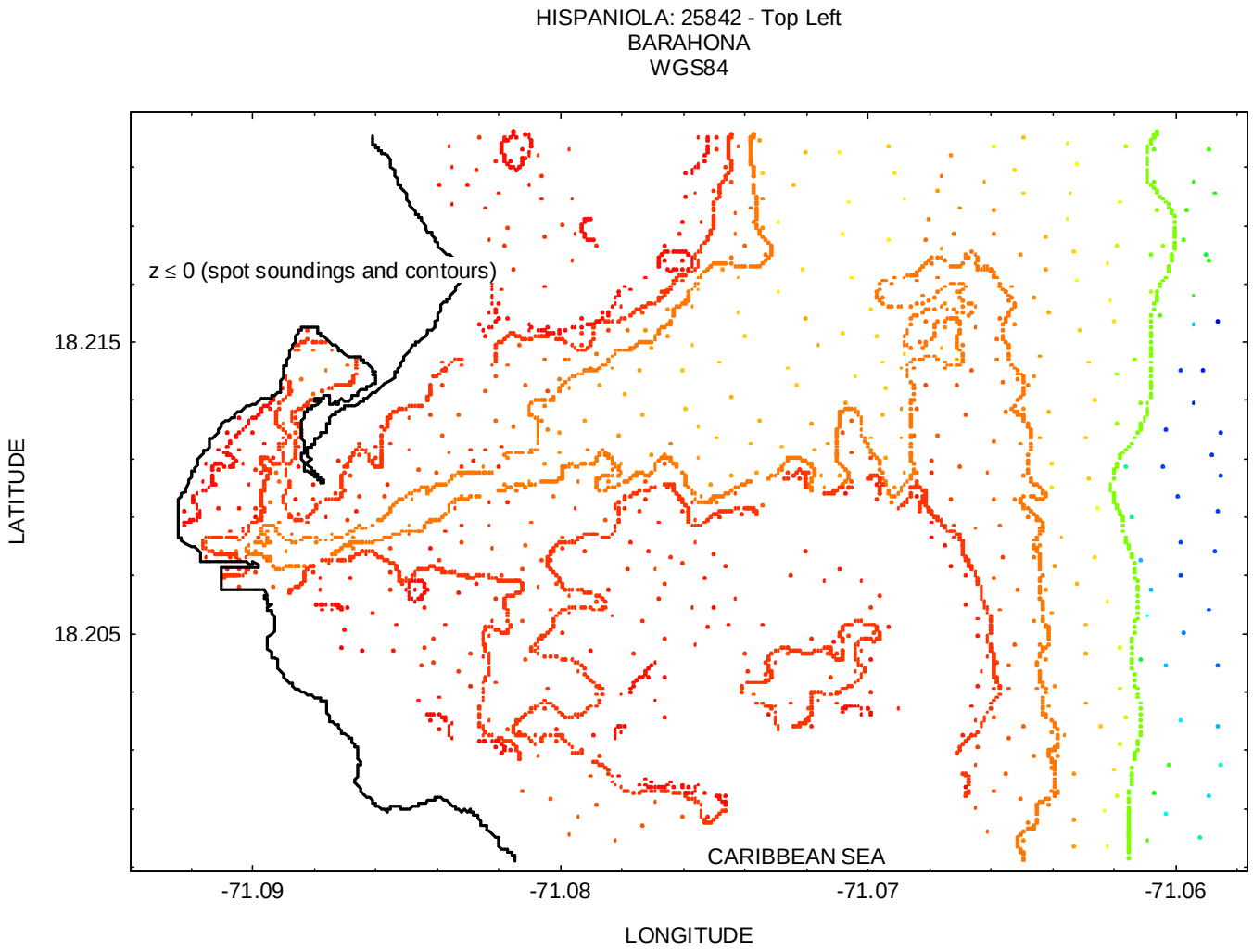
Figure 15: Nautical Chart 25842 - Barahona (top left chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25842\25842_Top_Left

File Size File Name
  32,300 25842_Top_Left_Barahona_Main_shoreline_deg_WGS84.sho

 147,723 25842_Top_Left_Barahona_Bathy&con_deg_WGS84.xyz
  26,825 25842_Top_Left_Barahona_Spot_soundings_deg_WGS84.xyz

1 shoreline file
2 bathyemtry files


HISPANIOLA: 25842 - Top Left
BARAHONA
WGS84
z ≤ 0 (spot soundings and contours)
18.215
18.205
LATITUDE
CARIBBEAN SEA
-71.09
-71.08
-71.07
-71.06
LONGITUDE

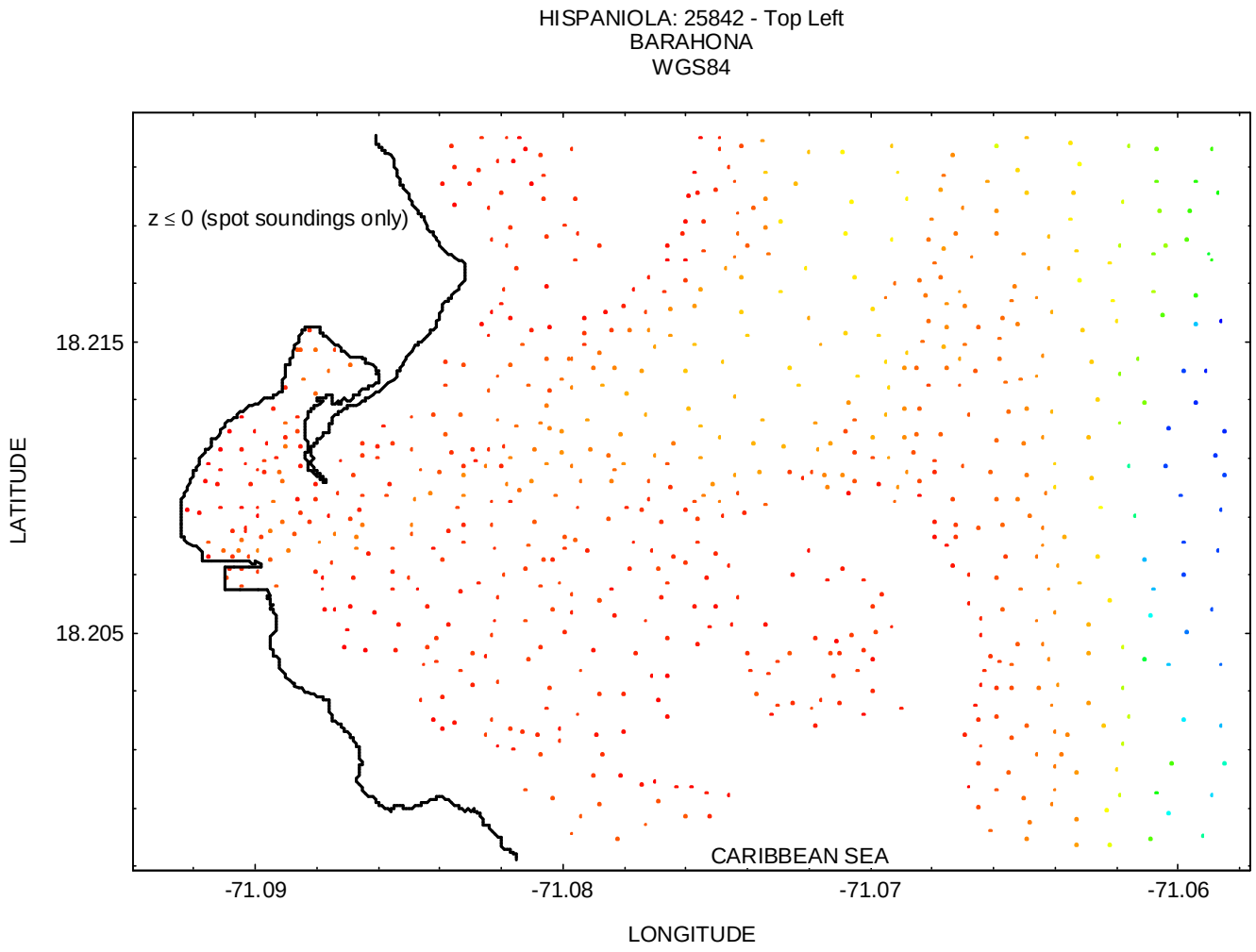

HISPANIOLA: 25842 - Top Left
BARAHONA
WGS84
z ≤ 0 (spot soundings only)
18.215
18.205
LATITUDE
CARIBBEAN SEA
-71.09
-71.08
-71.07
-71.06
LONGITUDE

Figure 16: Nautical Chart 25842 - Approaches to Barahona and Punta Palenque (bottom chart)

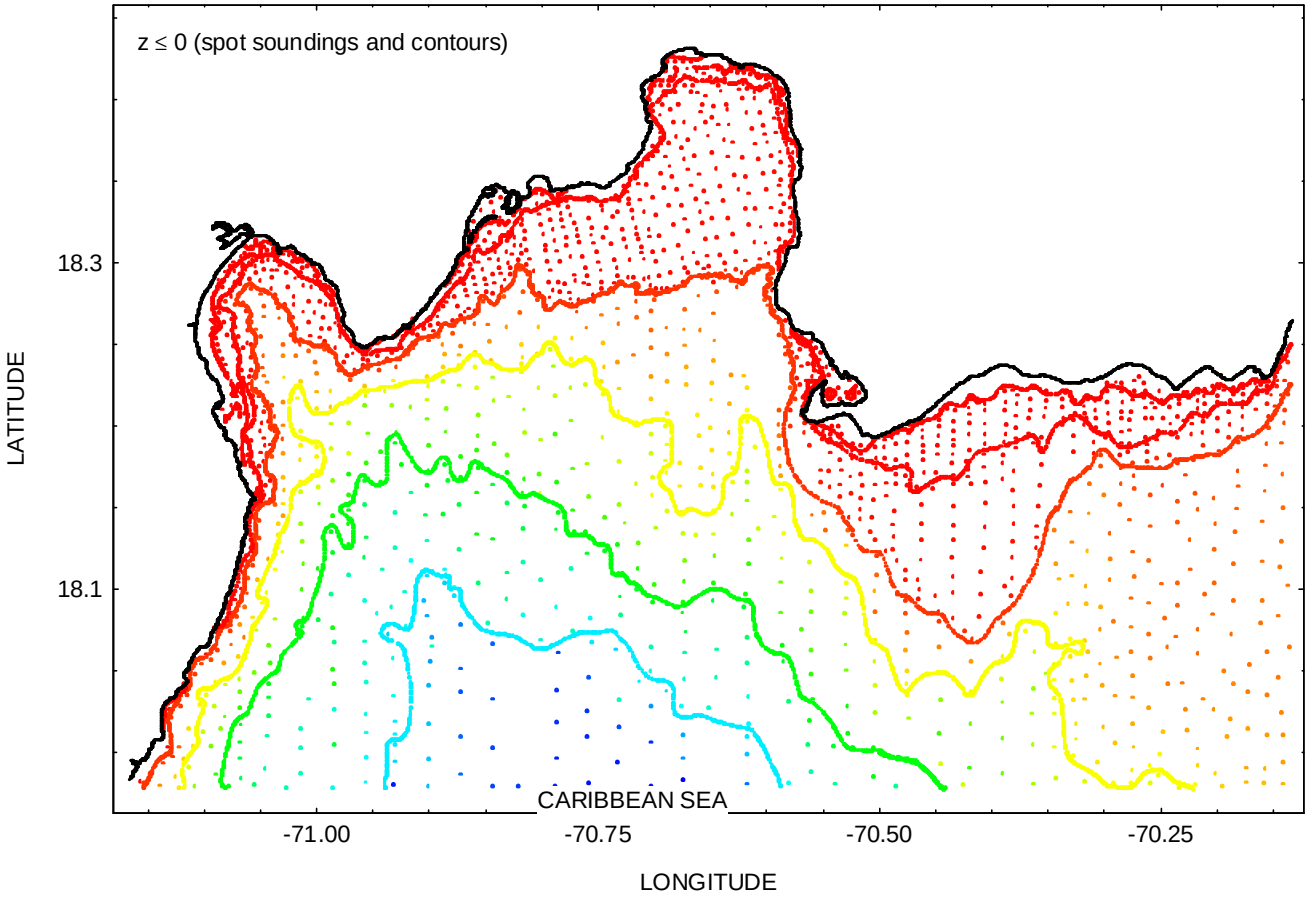
Directory of E:\Work\Republica Dominicana\Nautical_Charts\25842\25842_Bottom

File Size File Name
735 25842_Bottom_Islet_1_Pto_Viejo_de_Azua_deg_WGS84.sho
910 25842_Bottom_Islet_1_south_Pto_Alejandro_deg_WGS84.sho
3,955 25842_Bottom_Islet_2_Pto_Viejo_de_Azua_deg_WGS84.sho
792 25842_Bottom_Islet_2_south_Pto_Alejandro_deg_WGS84.sho
2,870 25842_Bottom_Islet_3_Pto_Viejo_de_Azua_deg_WGS84.sho
945 25842_Bottom_Islet_3_south_Pto_Alejandro_deg_WGS84.sho
1,088 25842_Bottom_Islet_4_Pto_Viejo_de_Azua_deg_WGS84.sho
2,940 25842_Bottom_Islet_5_Pto_Viejo_de_Azua_deg_WGS84.sho
2,520 25842_Bottom_Islet_6_Pto_Viejo_de_Azua_deg_WGS84.sho
1,995 25842_Bottom_Islet_7_Pto_Viejo_de_Azua_deg_WGS84.sho
910 25842_Bottom_Islet_8_Pto_Viejo_de_Azua_deg_WGS84.sho
1,015 25842_Bottom_Islet_Bahia_de_Neiba_deg_WGS84.sho
1,540 25842_Bottom_Islet_east_Pta_Martin_Garcia_deg_WGS84.sho
1,190 25842_Bottom_Islet_off_Pta_Barreras_deg_WGS84.sho
211,599 25842_Bottom_Main_shoreline_deg_WGS84.sho

319,554 25842_Bottom_Bathy&con_deg_WGS84.xyz
62,752 25842_Bottom_Spot_soundings_deg_WGS84.xyz

15 shoreline files
2 bathymetry files

HISPANIOLA: 25842 - Bottom
APPROACHES TO BARAHONA AND PUNTA PALENQUE
WGS84



HISPANIOLA: 25842 - Bottom
APPROACHES TO BARAHONA AND PUNTA PALENQUE
WGS84

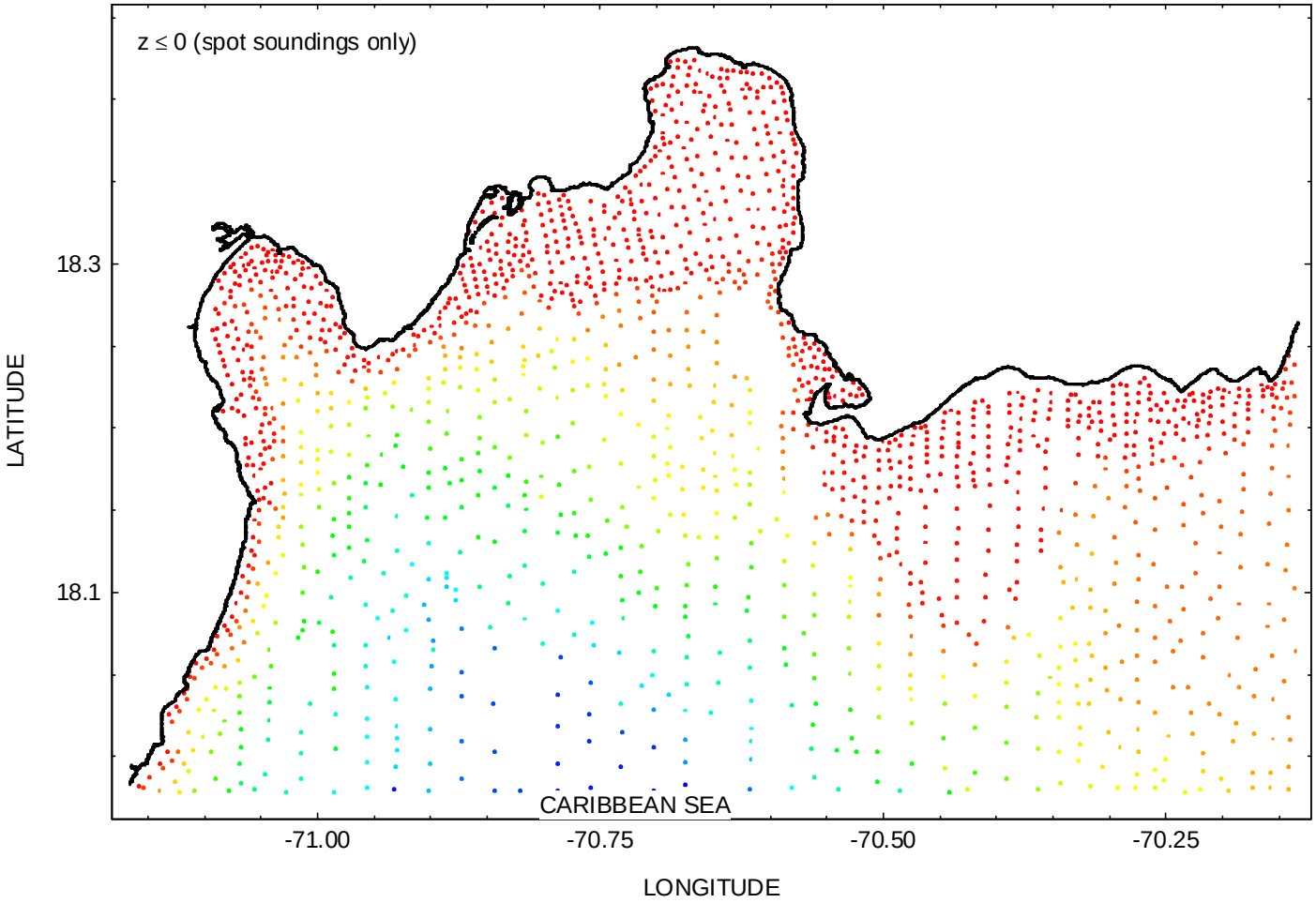


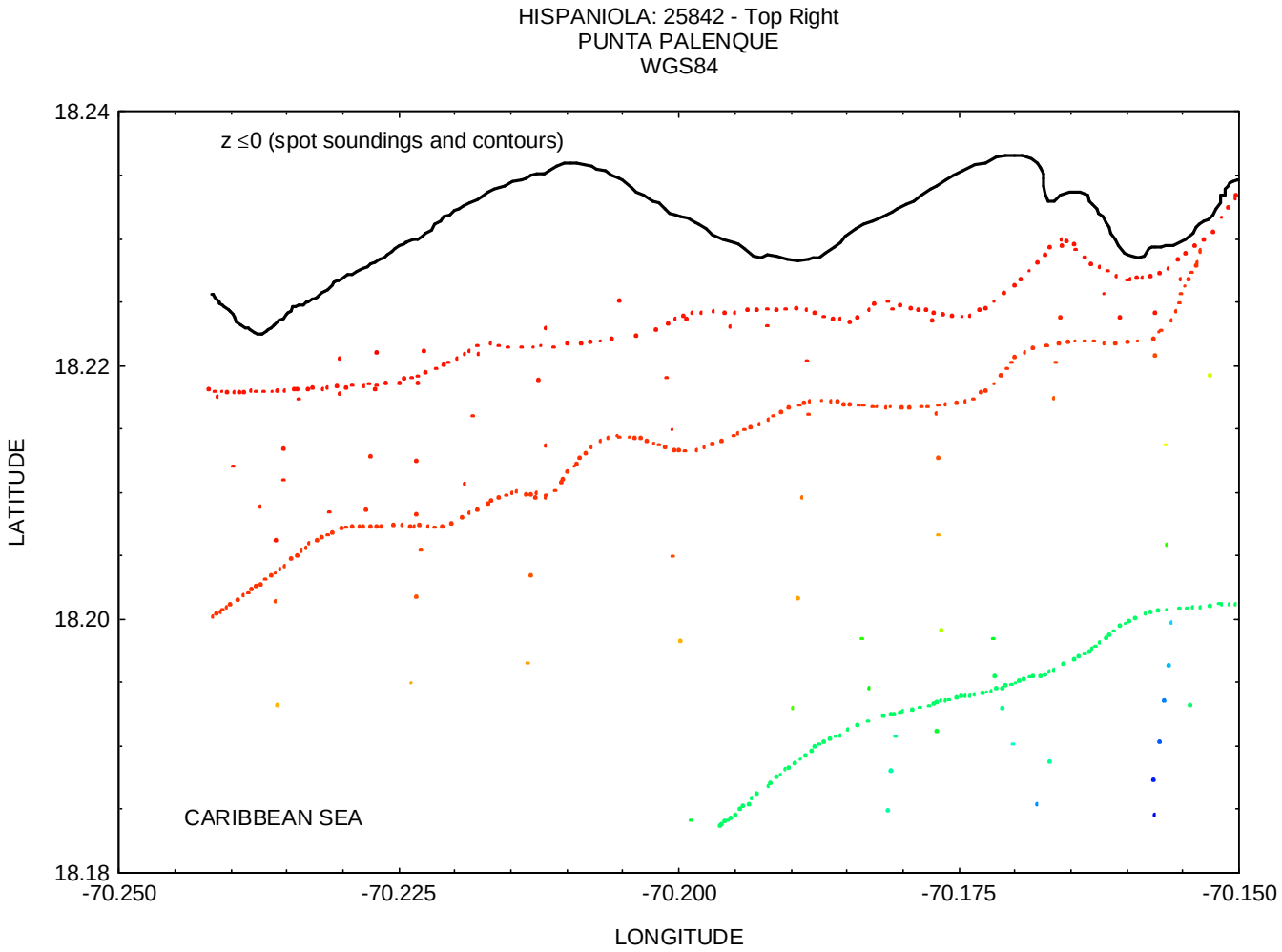
Figure 17: Nautical Chart 25842 - Punta Palenque (top right chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25842\25842_Top_Right

File Size File Name
   7,623 25842_Top_Right_Pta_Palenque_Main_shoreline_deg_WGS84.sho

   3,145 25842_Top_Right_Pta_Palenque_Spot_soundings_deg_WGS84.xyz
  18,410 25842_Top_Right_Pta_Palenque_Bathy&con_deg_WGS84.xyz

1 shoreline file
2 bathymetry files


HISPANIOLA: 25842 - Top Right
PUNTA PALENQUE
WGS84
z ≤0 (spot soundings and contours)
CARIBBEAN SEA
18.24
18.22
18.20
18.18
LATITUDE
-70.250
-70.225
-70.200
-70.175
-70.150
LONGITUDE

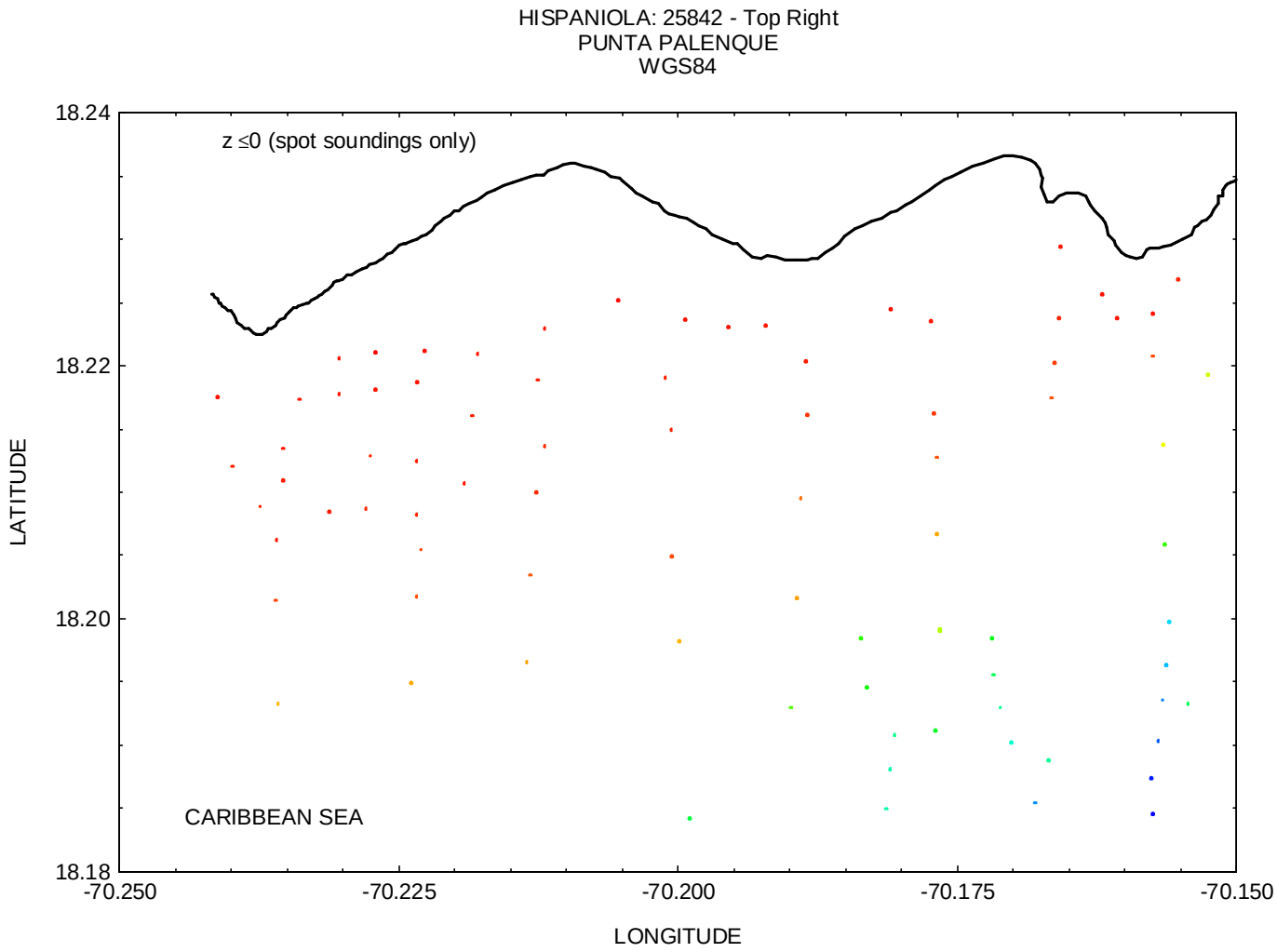

HISPANIOLA: 25842 - Top Right
PUNTA PALENQUE
WGS84
z ≤0 (spot soundings only)
CARIBBEAN SEA
18.24
18.22
18.20
18.18
LATITUDE
-70.250
-70.225
-70.200
-70.175
-70.150
LONGITUDE

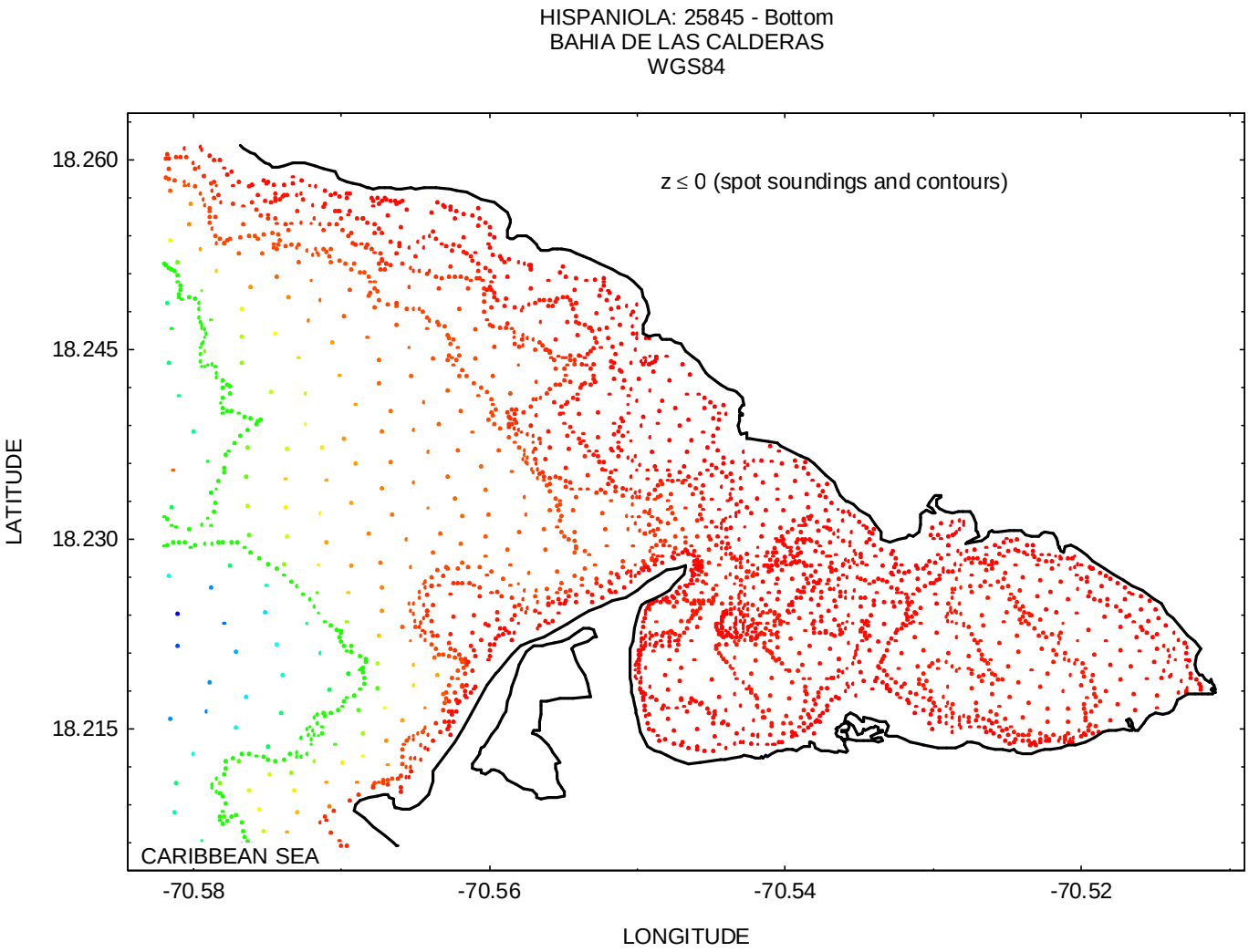
Figure 18: Nautical Chart 25845 - Bahia de Las Calderas (bottom chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25845\25845_Bottom

File Size File Name
3,690 25845_Bottom_Bahia_de_las_Calderas_lake_deg_WGS84.sho
19,315 25845_Bottom_Bahia_de_las_Calderas_Main_shoreline_deg_WGS84.sho
941 25845_Bottom_Islet_Bahia_de_las_Calderas_deg_WGS84.sho

111,718 25845_Bottom_Bahia_de_las_Calderas_Bathy&con_deg_WGS84.xyz
111,718 25845_Bottom_Bahia_de_las_Calderas_Bathy&con_deg_WGS84.xyz

3 shoreline files
2 bathymetry files


HISPANIOLA: 25845 - Bottom
BAHIA DE LAS CALDERAS
WGS84
z ≤ 0 (spot soundings and contours)
CARIBBEAN SEA
18.260
18.245
18.230
18.215
LATITUDE
-70.58
-70.56
-70.54
-70.52
LONGITUDE

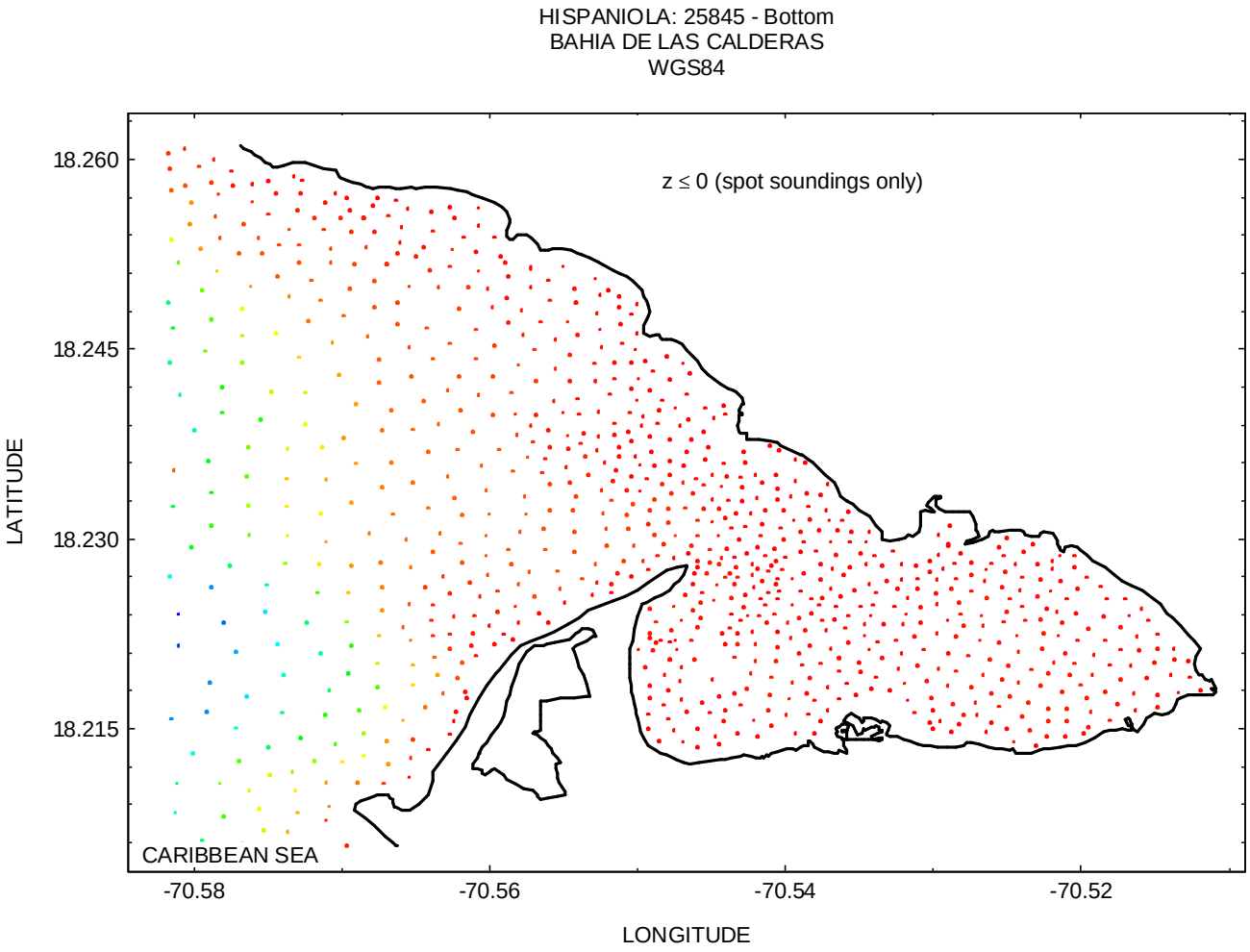

HISPANIOLA: 25845 - Bottom
BAHIA DE LAS CALDERAS
WGS84
z ≤ 0 (spot soundings only)
CARIBBEAN SEA
18.260
18.245
18.230
18.215
LATITUDE
-70.58
-70.56
-70.54
-70.52
LONGITUDE

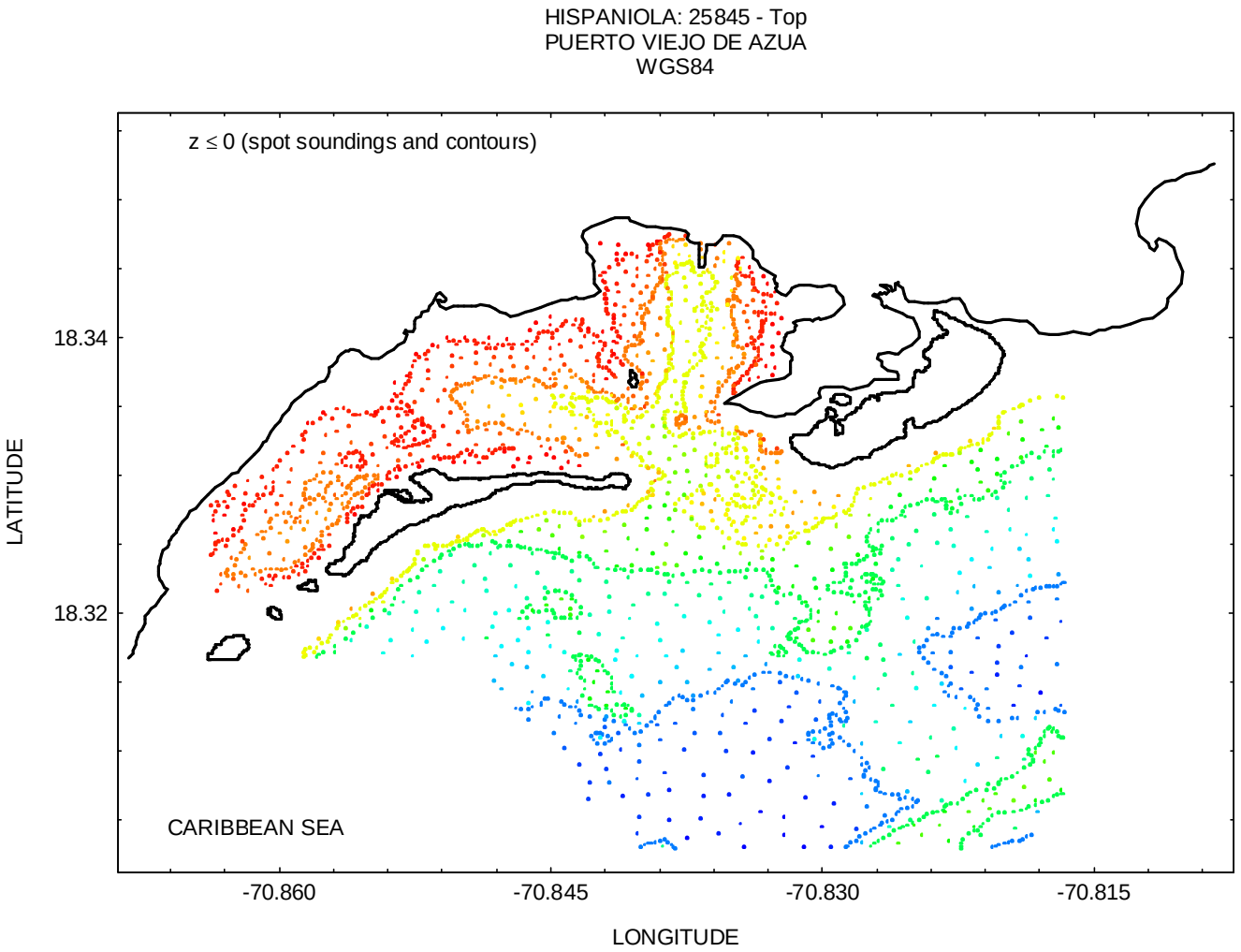
Figure 19: Nautical Chart 25845 - Puerto Viejo de Azua (top chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25845\25845_Top

File Size File Name
    5,215 25845_Cayo_Pto_Viejo_Islet_1_deg_WGS84.sho
    3,745 25845_Pto_Ruben_Islet_1_deg_WGS84.sho
   33,110 25845_Pto_Ruben_Islet_2_deg_WGS84.sho
    1,890 25845_Pto_Ruben_Islet_3_deg_WGS84.sho
    7,000 25845_Top_Cayo_Agua_Dulce_deg_WGS84.sho
    2,975 25845_Top_Cayo_Pto_Corral_deg_WGS84.sho
   37,170 25845_Top_Cayo_Pto_Viejo_deg_WGS84.sho
    4,235 25845_Top_Cayo_Puertecito_deg_WGS84.sho
   16,492 25845_Top_Pto_Viejo_de_Azua_Main_shore_deg_WGS84.sho

   36,889 25845_Top_Spot_soundings_deg_WGS84.xyz
  115,372 25845_Top_Bathy_deg_WGS84.xyz

9 shoreline files
2 bathymetry files


HISPANIOLA: 25845 - Top
PUERTO VIEJO DE AZUA
WGS84
z ≤ 0 (spot soundings and contours)
18.34
18.32
LATITUDE
CARIBBEAN SEA
-70.860
-70.845
-70.830
-70.815
LONGITUDE

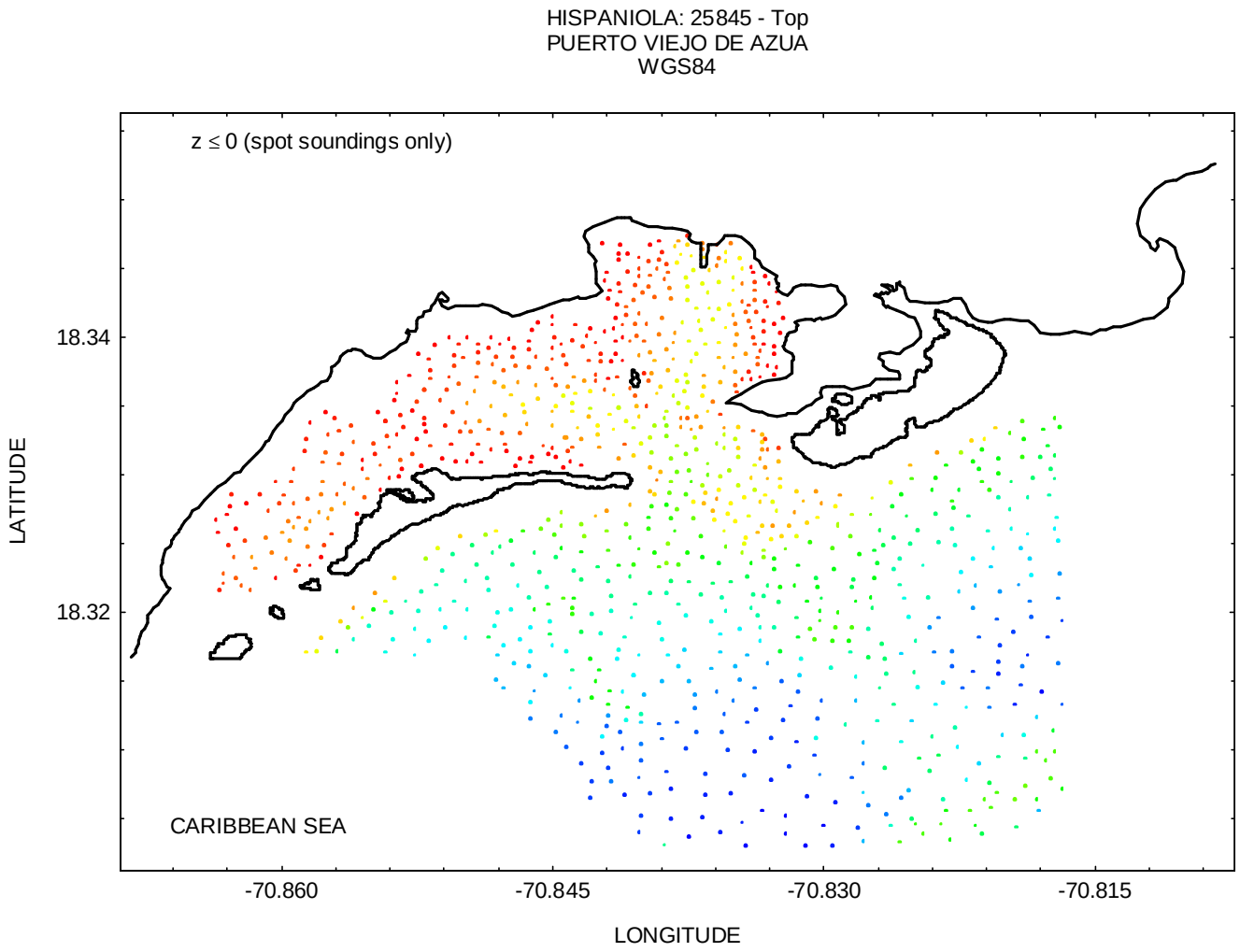

HISPANIOLA: 25845 - Top
PUERTO VIEJO DE AZUA
WGS84
z ≤ 0 (spot soundings only)
18.34
18.32
LATITUDE
CARIBBEAN SEA
-70.860
-70.845
-70.830
-70.815
LONGITUDE

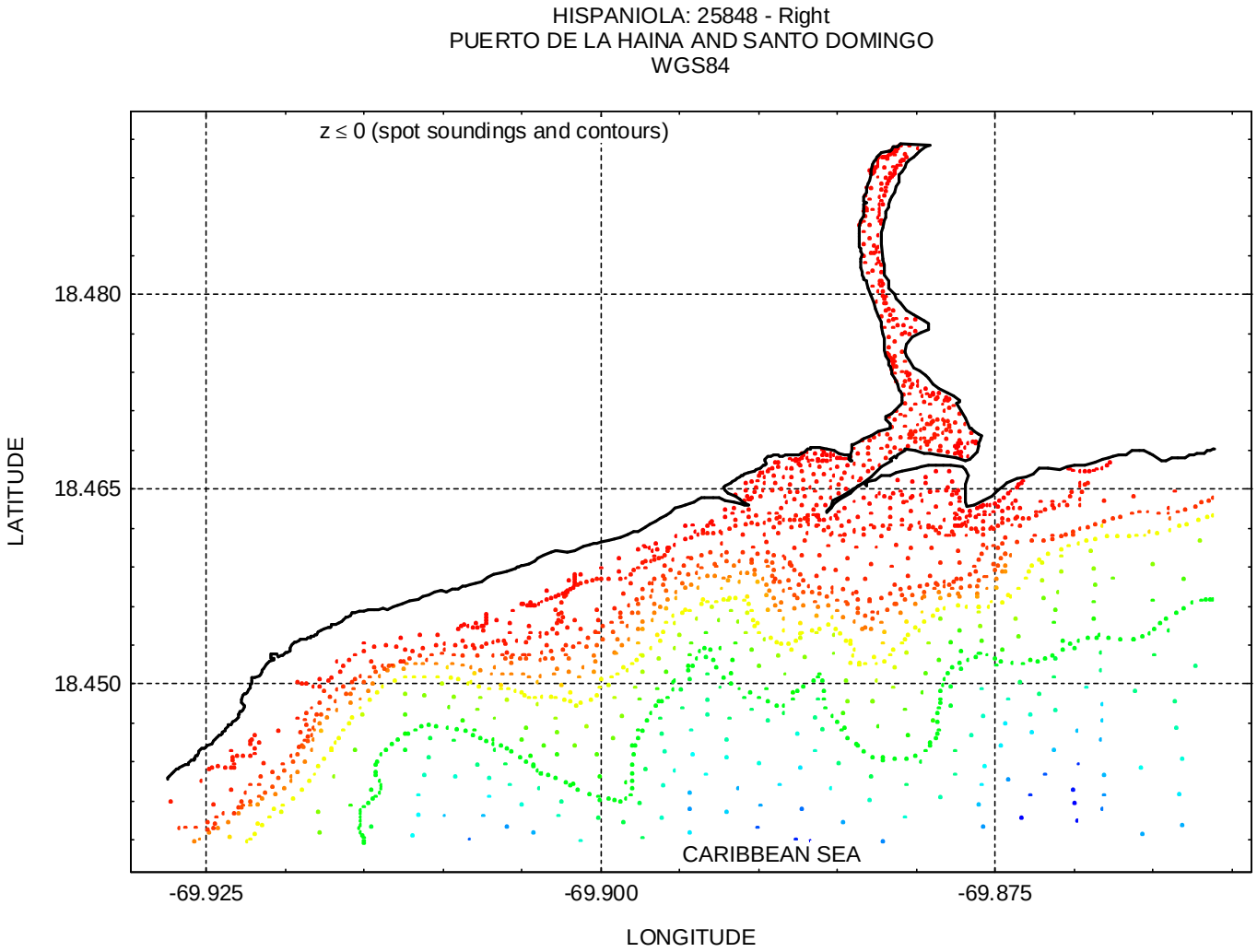
Figure 20: Nautical Chart 25848 - Puerto de La Haina and Santo Domingo (right chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25848\Right

File Size File Name
  11,501 25848_Right_Main_shoreline_deg_WGS84.sho

  78,624 25848_Right_Bathy&con_deg_WGS84.xyz
  32,449 25848_Right_Spot_soundings_deg_WGS84.xyz

1 shoreline file
2 bathymedtry files


HISPANIOLA: 25848 - Right
PUERTO DE LA HAINA AND SANTO DOMINGO
WGS84
z ≤ 0 (spot soundings and contours)
18.480
18.465
18.450
LATITUDE
CARIBBEAN SEA
-69.925
-69.900
-69.875
LONGITUDE

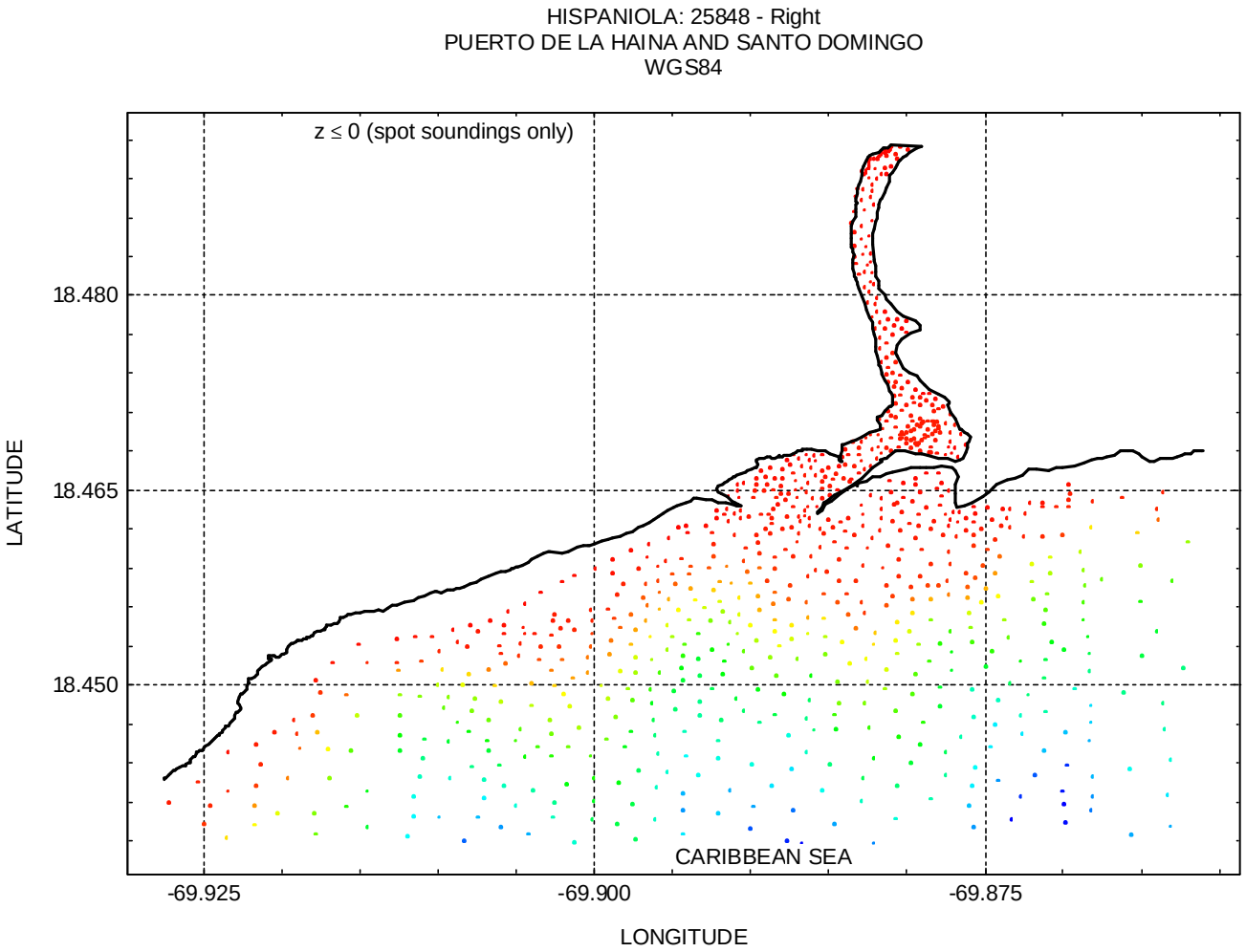

HISPANIOLA: 25848 - Right
PUERTO DE LA HAINA AND SANTO DOMINGO
WGS84
z ≤ 0 (spot soundings only)
18.480
18.465
18.450
LATITUDE
CARIBBEAN SEA
-69.925
-69.900
-69.875
LONGITUDE

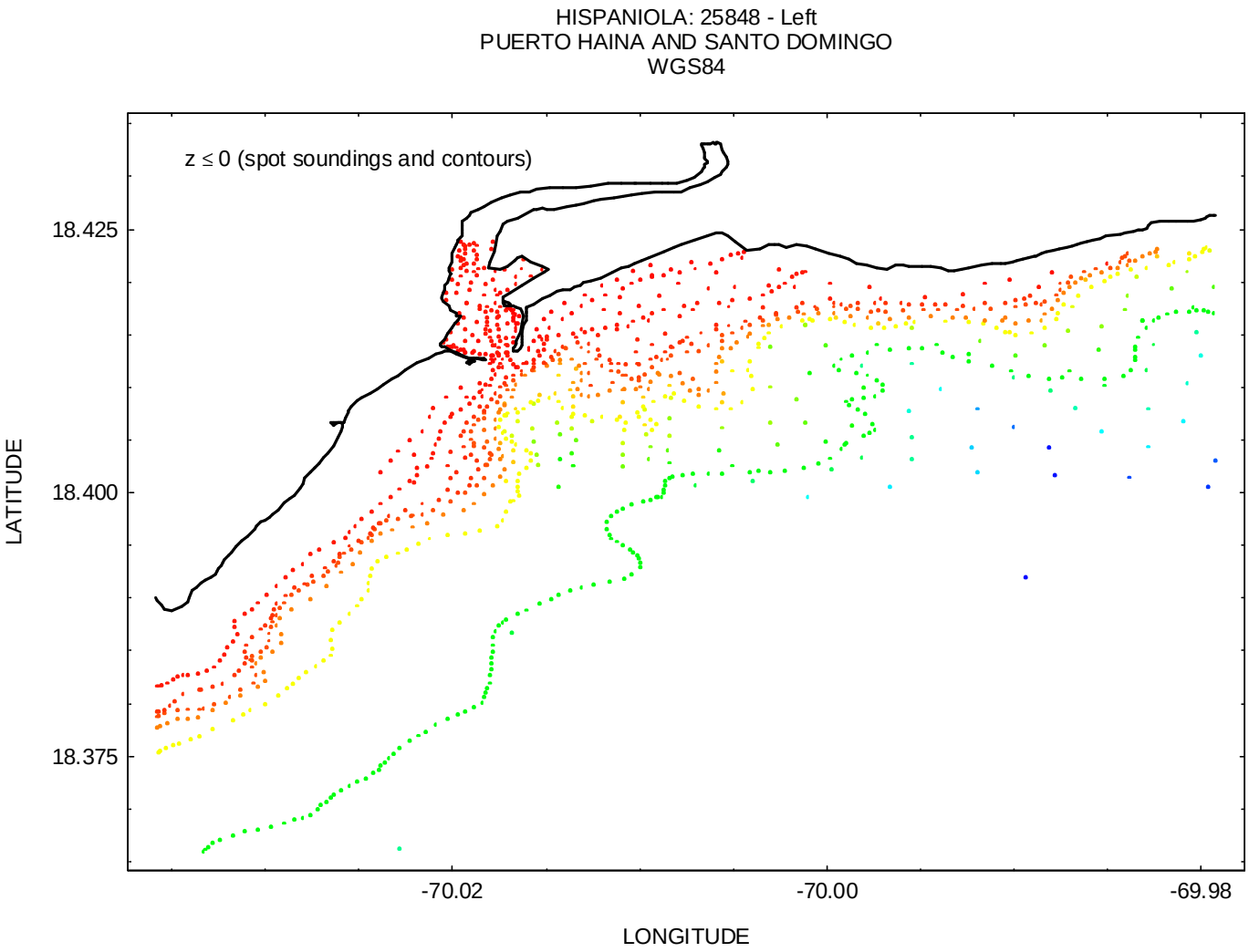
Figure 21: Nautical Chart 25848 - Puerto Haina and Santo Domingo (left chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25848\Left

File Size File Name
9,855 25848_Left_Main_shoreline_deg_WGS84.sho
312 25848_Left_Wk_deg_WGS84.sho

46,371 25848_Left_Bathy&con_deg_WGS84.xyz
18,537 25848_Left_Spot_soundings_deg_WGS84.xyz

2 shorleine files
2 bathymetry files


HISPANIOLA: 25848 - Left
PUERTO HAINA AND SANTO DOMINGO
WGS84
z ≤ 0 (spot soundings and contours)
18.425
18.400
18.375
LATITUDE
-70.02
-70.00
-69.98
LONGITUDE

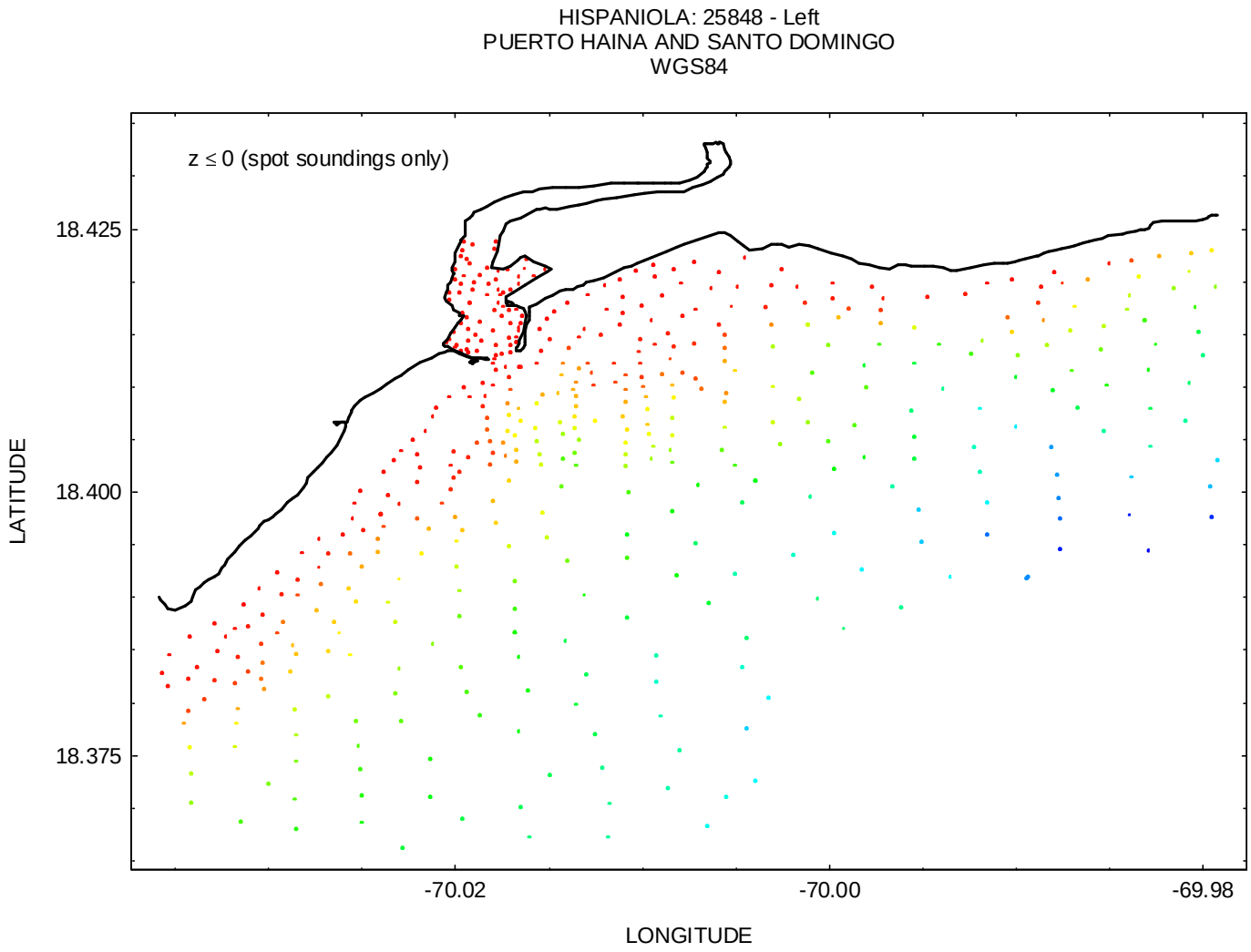

HISPANIOLA: 25848 - Left
PUERTO HAINA AND SANTO DOMINGO
WGS84
z ≤ 0 (spot soundings only)
18.425
18.400
18.375
LATITUDE
-70.02
-70.00
-69.98
LONGITUDE

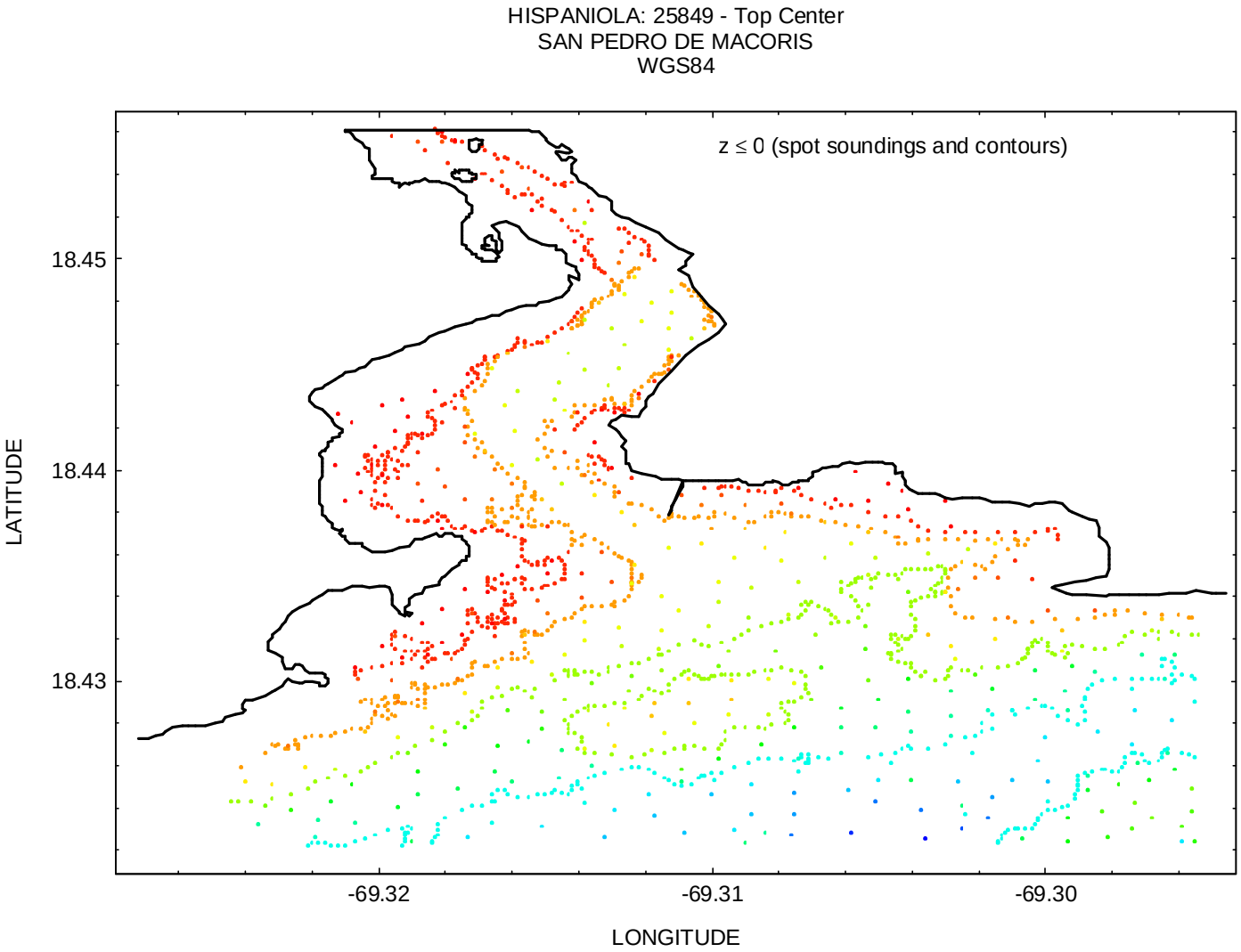
Figure 22: Nautical Chart 25849 - San Pedro de Macoris (top center chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25849\Top_Center

File Size File Name
2,278 25849b_Top_Center_Macoris_Islet_1_deg_WGS84.sho
2,695 25849b_Top_Center_Macoris_Islet_2_deg_WGS84.sho
22,248 25849b_Top_Center_Macoris_Main_shore_deg_WGS84.sho
2,210 25849b_Top_Center_Macoris_reefs_deg_WGS84.sho

65,313 25849b_Top_Center_Macoris_Bathy&con_deg_WGS84.xyz
17,316 25849b_Top_Center_Macoris_Spot_soundings_deg_WGS84.xyz

4 shoreline files
2 bathymetry files


HISPANIOLA: 25849 - Top Center
SAN PEDRO DE MACORIS
WGS84
z ≤ 0 (spot soundings and contours)
18.45
18.44
18.43
LATITUDE
-69.32
-69.31
-69.30
LONGITUDE

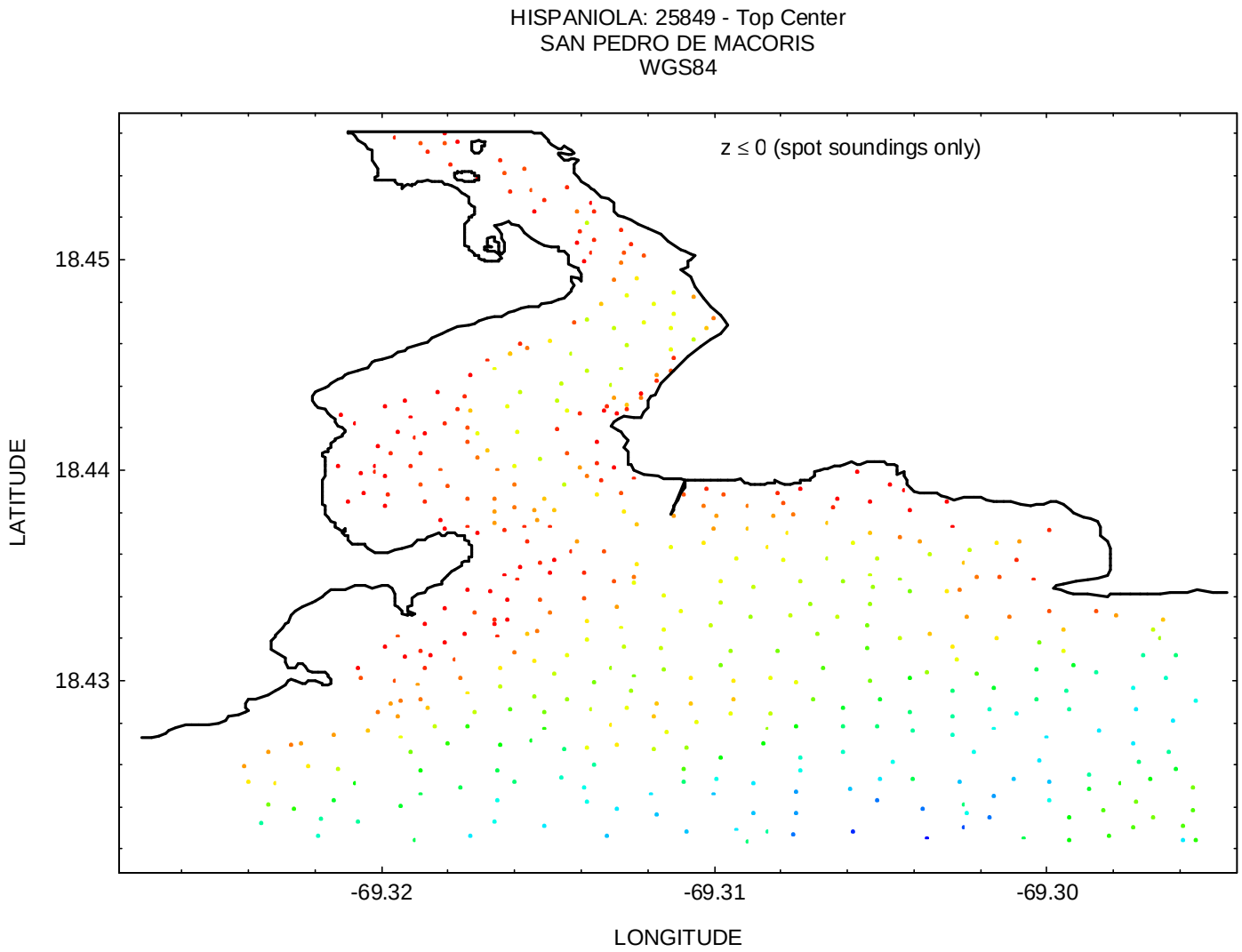

HISPANIOLA: 25849 - Top Center
SAN PEDRO DE MACORIS
WGS84
z ≤ 0 (spot soundings only)
18.45
18.44
18.43
LATITUDE
-69.32
-69.31
-69.30
LONGITUDE

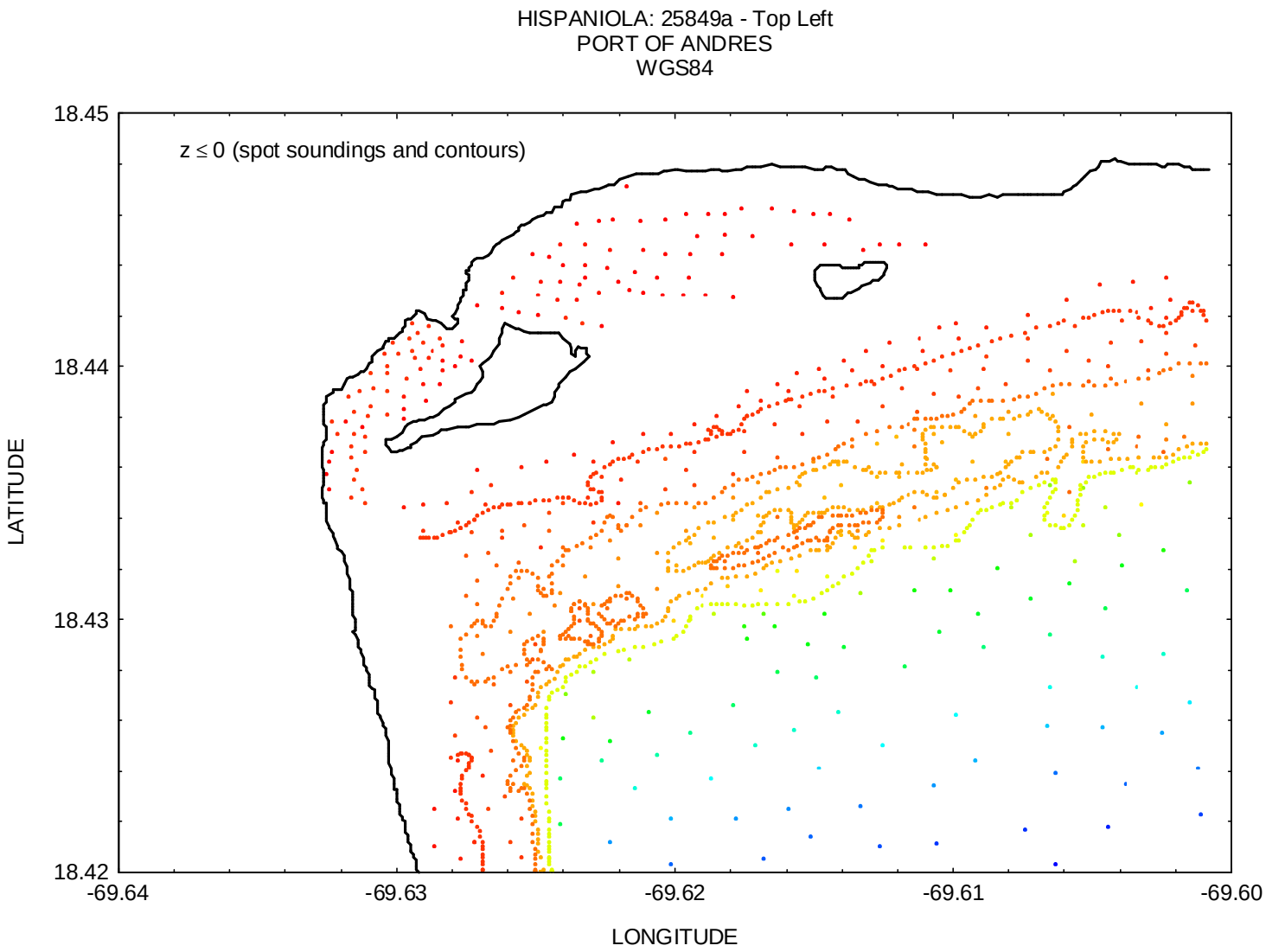
Figure 23: Nautical Chart 25849 - Port of Andres (top left chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25849\Top_Left

File Size File Name
17,759 25849a_Top_Left_Andres_Main_shore_deg_WGS84.sho
2,148 25849a_Top_Left_Isla_La_Matica_deg_WGS84.sho
4,126 25849a_Top_Left_Isla_La_Piedra_deg_WGS84.sho

60,798 25849a_Top_Left_Andres_Bathy&con_deg_WGS84.xyz
16,946 25849a_Top_Left_Andres_Spot_soundings_deg_WGS84.xyz

3 shoreline files
2 bathymetry files


HISPANIOLA: 25849a - Top Left
PORT OF ANDRES
WGS84
z ≤ 0 (spot soundings and contours)
18.45
18.44
18.43
18.42
LATITUDE
-69.64
-69.63
-69.62
-69.61
-69.60
LONGITUDE

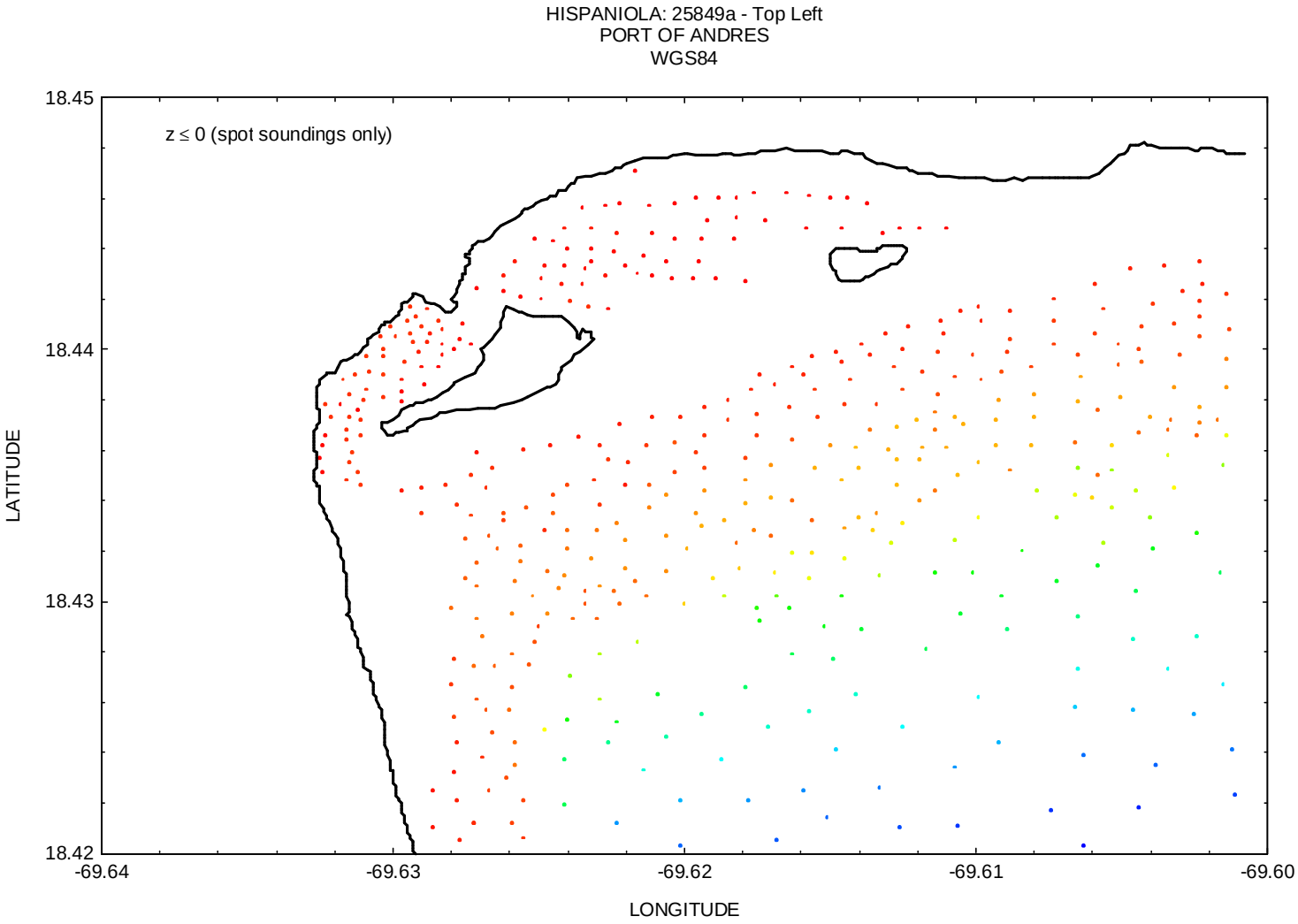

HISPANIOLA: 25849a - Top Left
PORT OF ANDRES
WGS84
z ≤ 0 (spot soundings only)
18.45
18.44
18.43
18.42
LATITUDE
-69.64
-69.63
-69.62
-69.61
-69.60
LONGITUDE

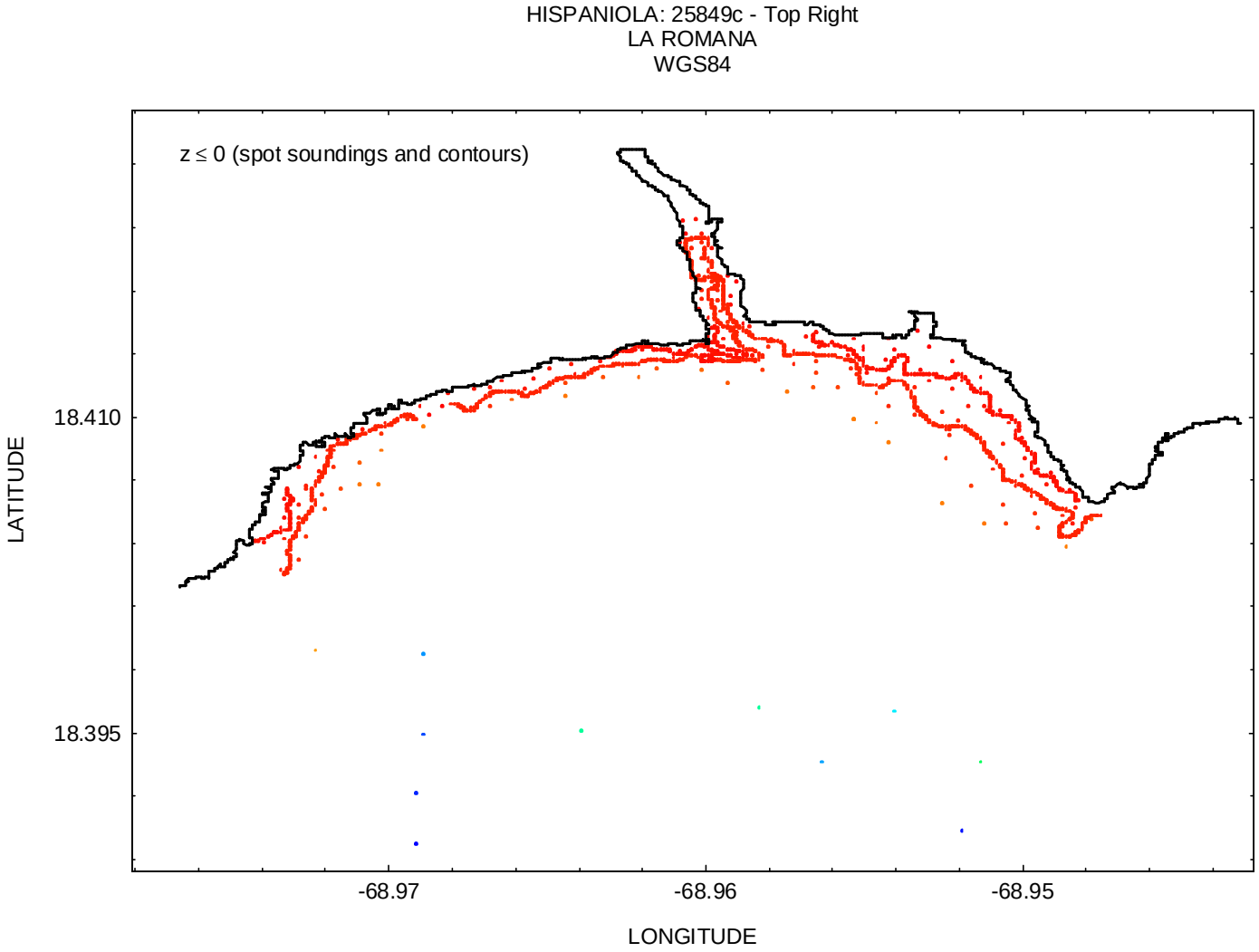
Figure 24: Nautical Chart 25849 - La Romana (top right chart)

Directory of E:\Work\Republica Dominicana\Nautical_Charts\25849\Top_Right

File Size File Name
 105,636 25849c_Top_Right_Main_shore_deg_WGS84.sho

  70,234 25849c_Top_Right_Bathy&con_deg_WGS84.xyz
   6,697 25849c_Top_Right_Spot_soundings_deg_WGS84.xyz

1 shoreline file
2 bathymetryfiles


HISPANIOLA: 25849c - Top Right
LA ROMANA
WGS84
z ≤ 0 (spot soundings and contours)
18.410
18.395
LATITUDE
-68.97
-68.96
-68.95
LONGITUDE

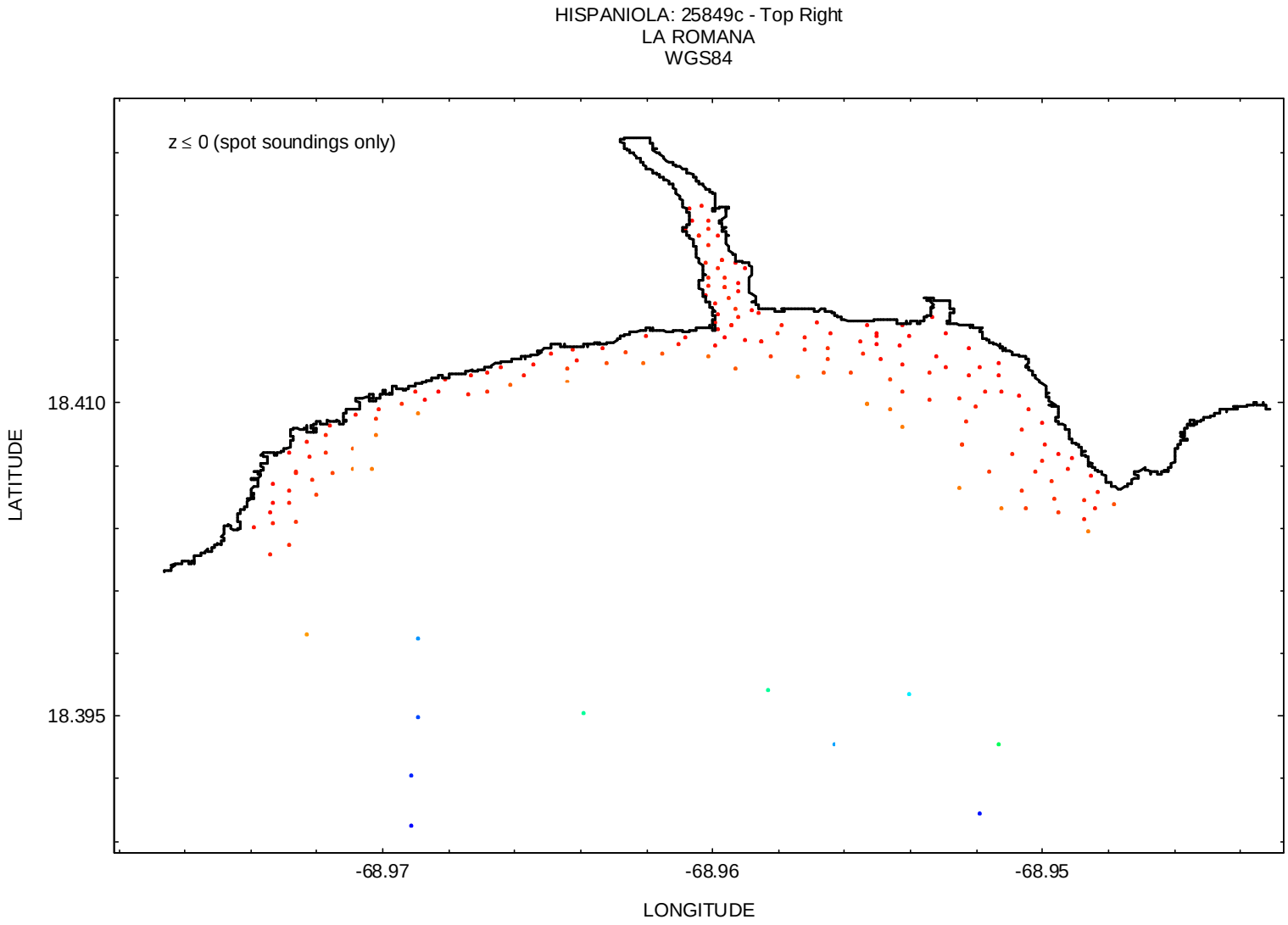

HISPANIOLA: 25849c - Top Right
LA ROMANA
WGS84
z ≤ 0 (spot soundings only)
18.410
18.395
LATITUDE
-68.97
-68.96
-68.95
LONGITUDE

Figure 25: Nautical Chart 25849 - Approaches to Andrés, San Pedro de Macoris, and La Romana (bottom chart)

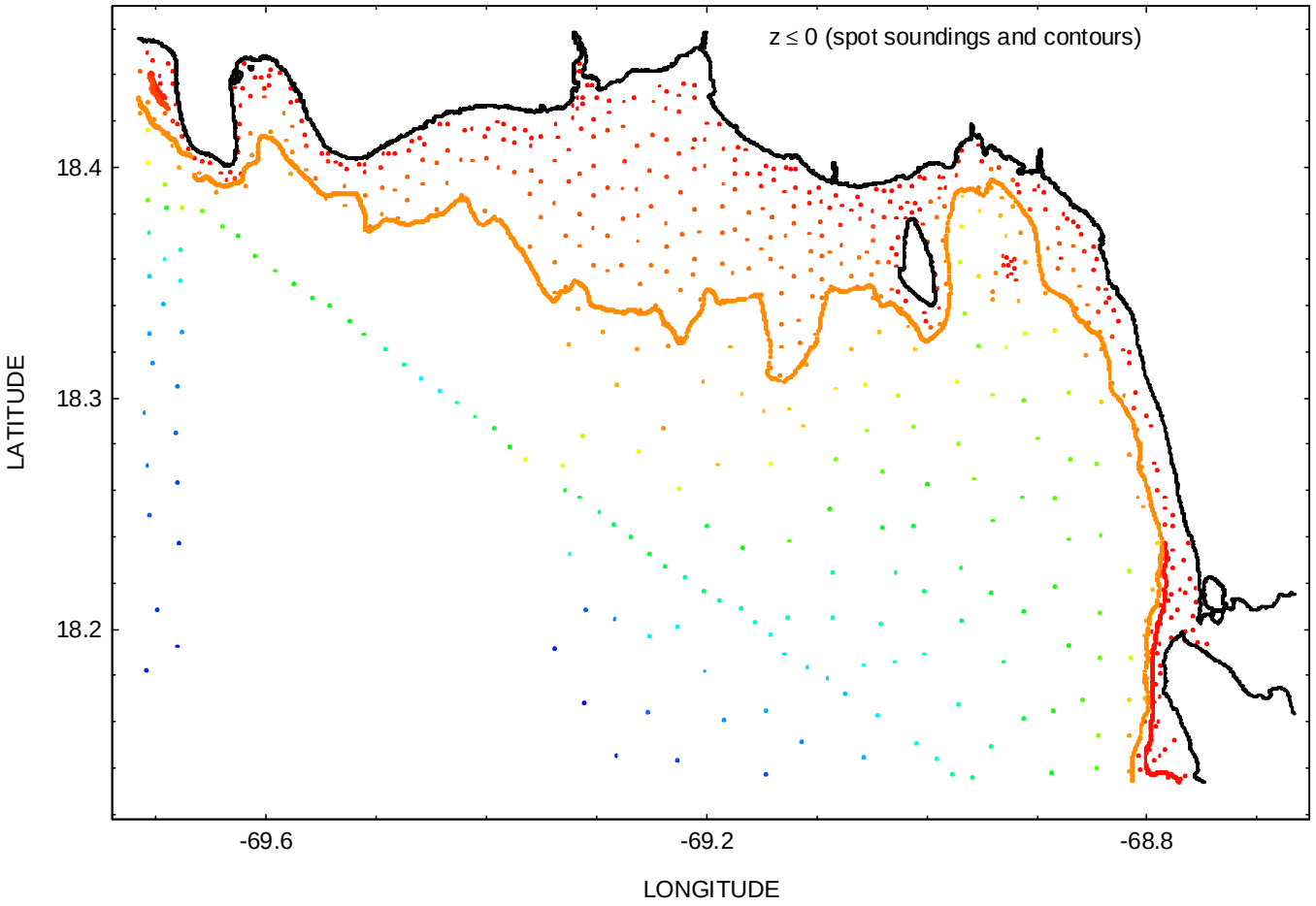
Directory of E:\Work\Republica Dominicana\Nautical_Charts\25849\Bottom

File Size File Name
   13,174 25849_Bottom_Isla_Catalina_deg_WGS84.sho
    1,407 25849_Bottom_Isla_La_Matica_deg_WGS84.sho
    3,851 25849_Bottom_Isla_La_Piedra_deg_WGS84.sho
   16,596 25849_Bottom_Isla_Saona_(west)_deg_WGS84.sho
  201,909 25849_Bottom_Main_shore_deg_WGS84.sho

  103,525 25849_Bottom_Bathy&con_deg_WGS84.xyz
   24,790 25849_Bottom_Spot_soundings_deg_WGS84.xyz

5 shoreline files
2 bathymetry

HISPANIOLA: 25849 - Bottom
APPROACHES TO ANDRES, SAN PEDRO DE MACORIS, AND LA ROMANA
WGS84



HISPANIOLA: 25849 - Bottom
APPROACHES TO ANDRES, SAN PEDRO DE MACORIS, AND LA ROMANA
WGS84

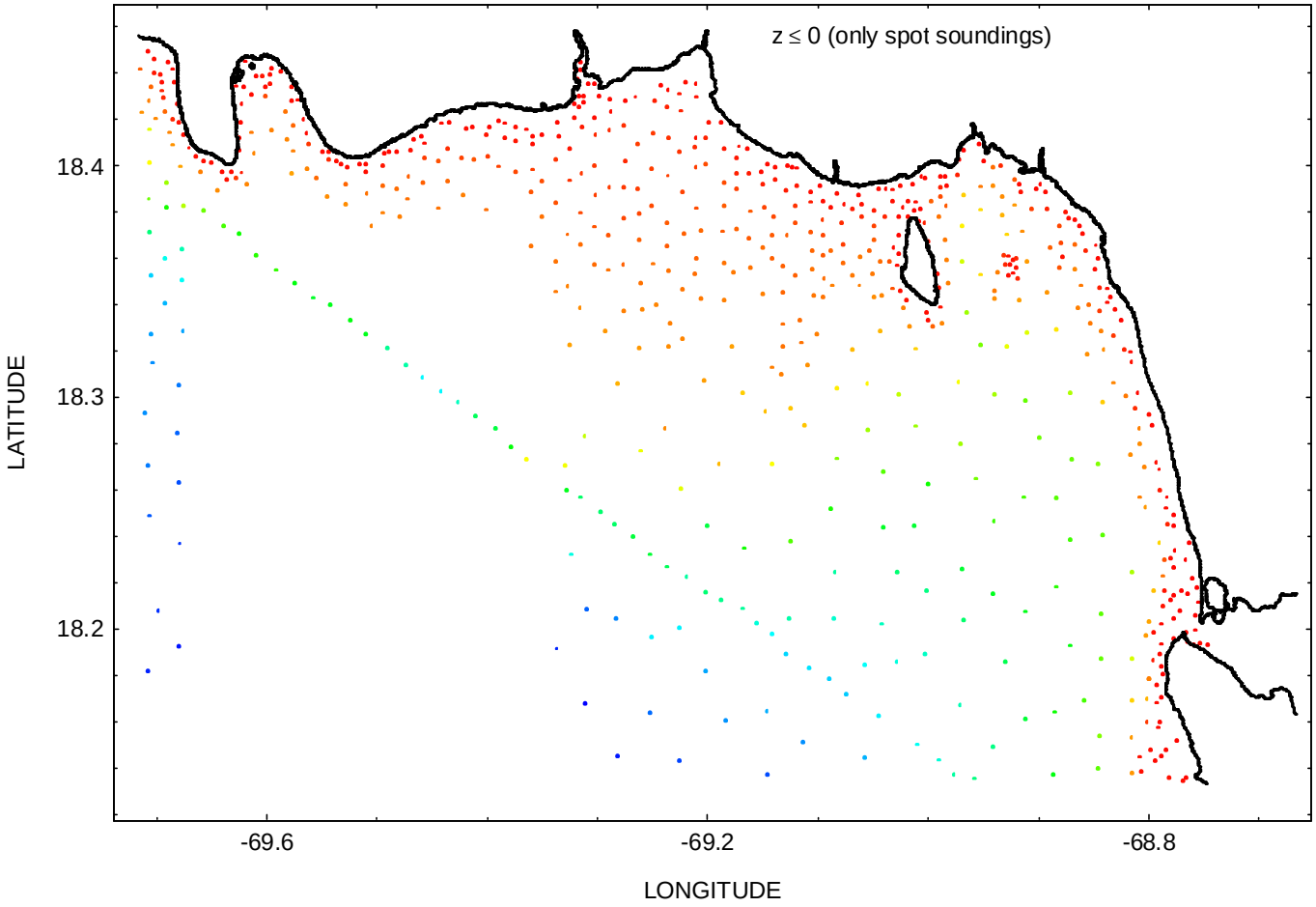
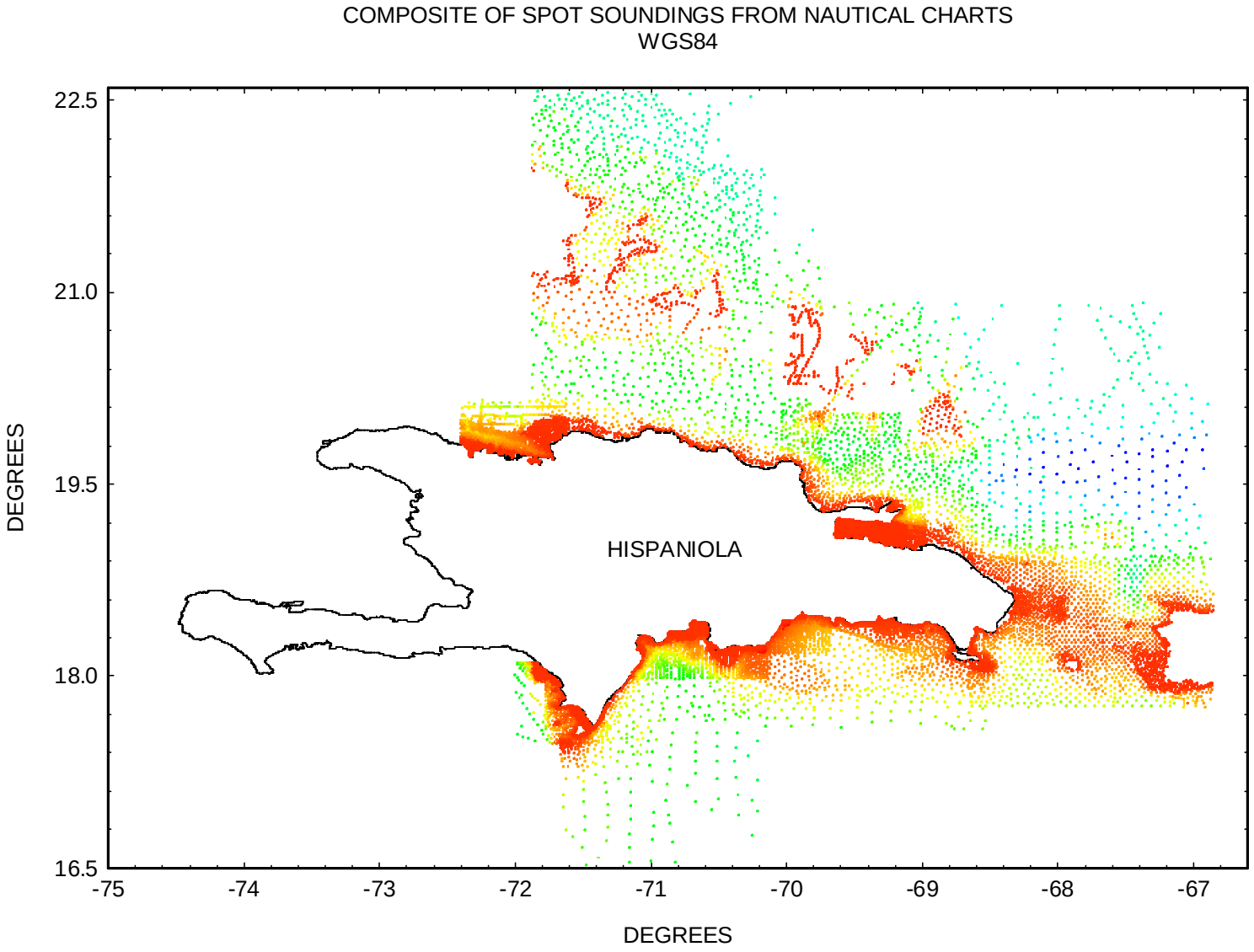


Figure 26: Nautical Charts Composite


COMPOSITE OF SPOT SOUNDINGS FROM NAUTICAL CHARTS
WGS84
22.5
21.0
19.5
18.0
16.5
DEGREES
HISPANIOLA
-75
-74
-73
-72
-71
-70
-69
-68
-67
DEGREES

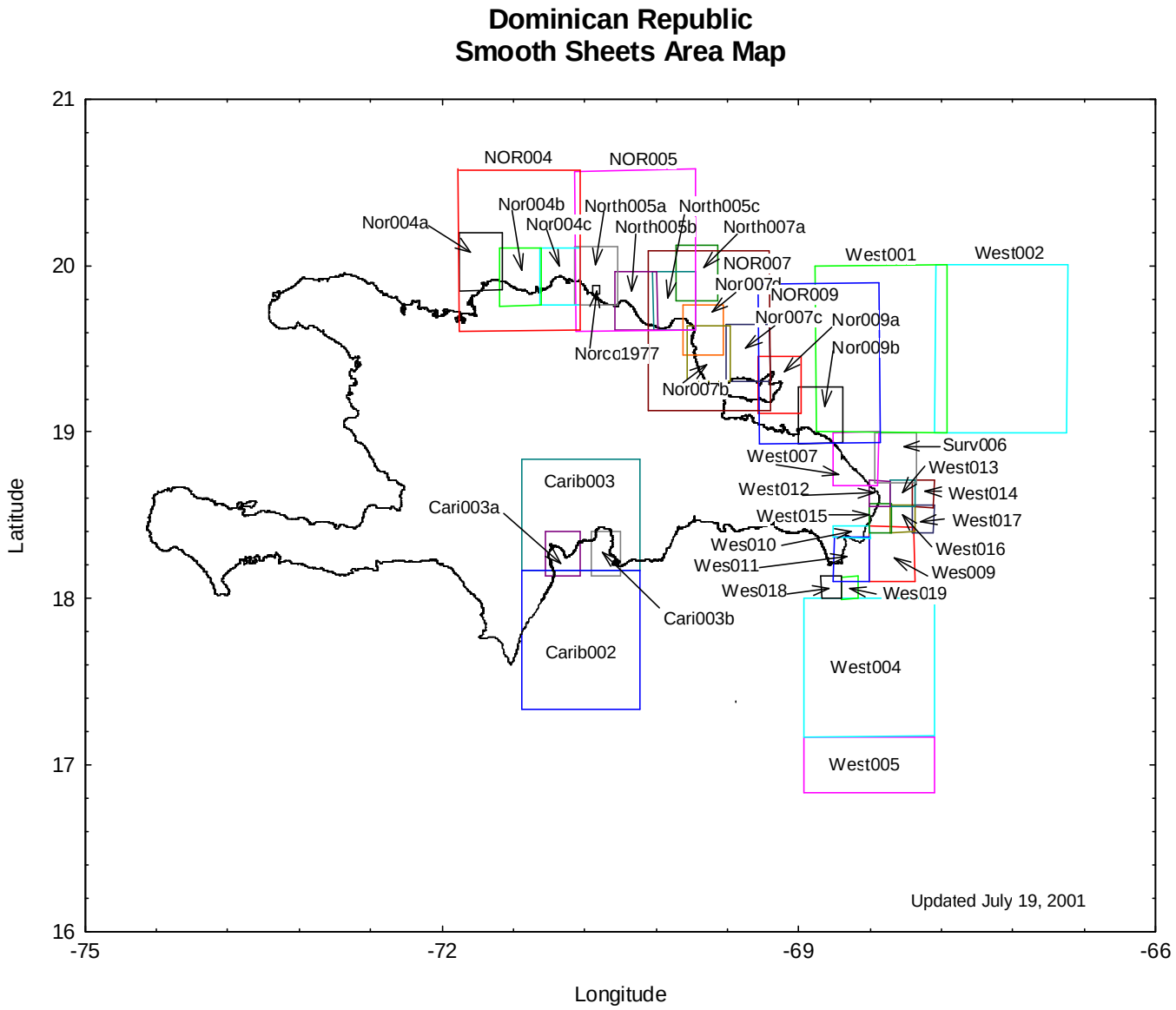


Figure 27: Location map of smooth sheets. Rectangles show the areas inside of which the smooth sheets fall.

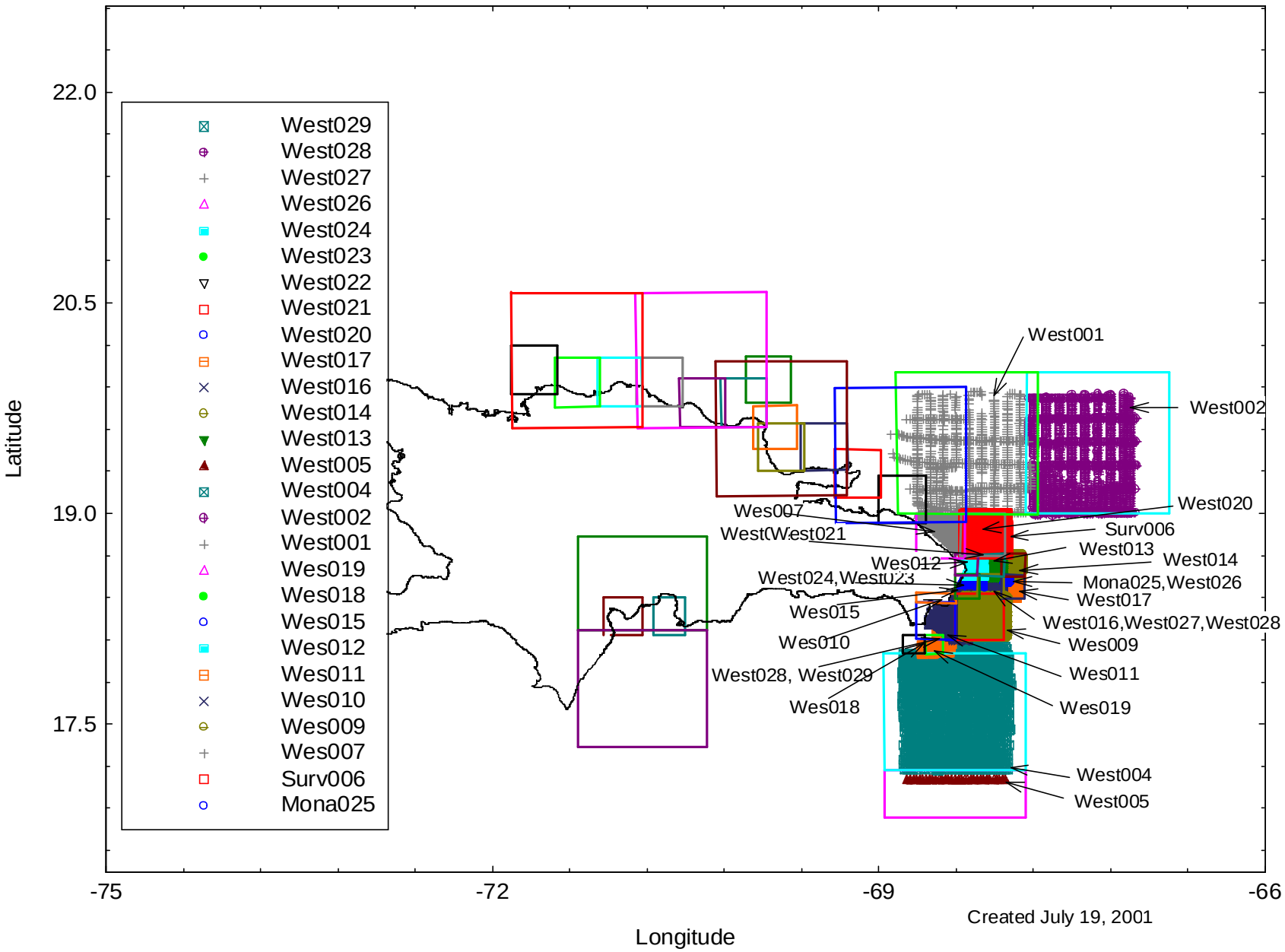


Figure 28a - Composite of east coast smooth sheets digitized in this project. Each smooth sheets is drawn with a different color.

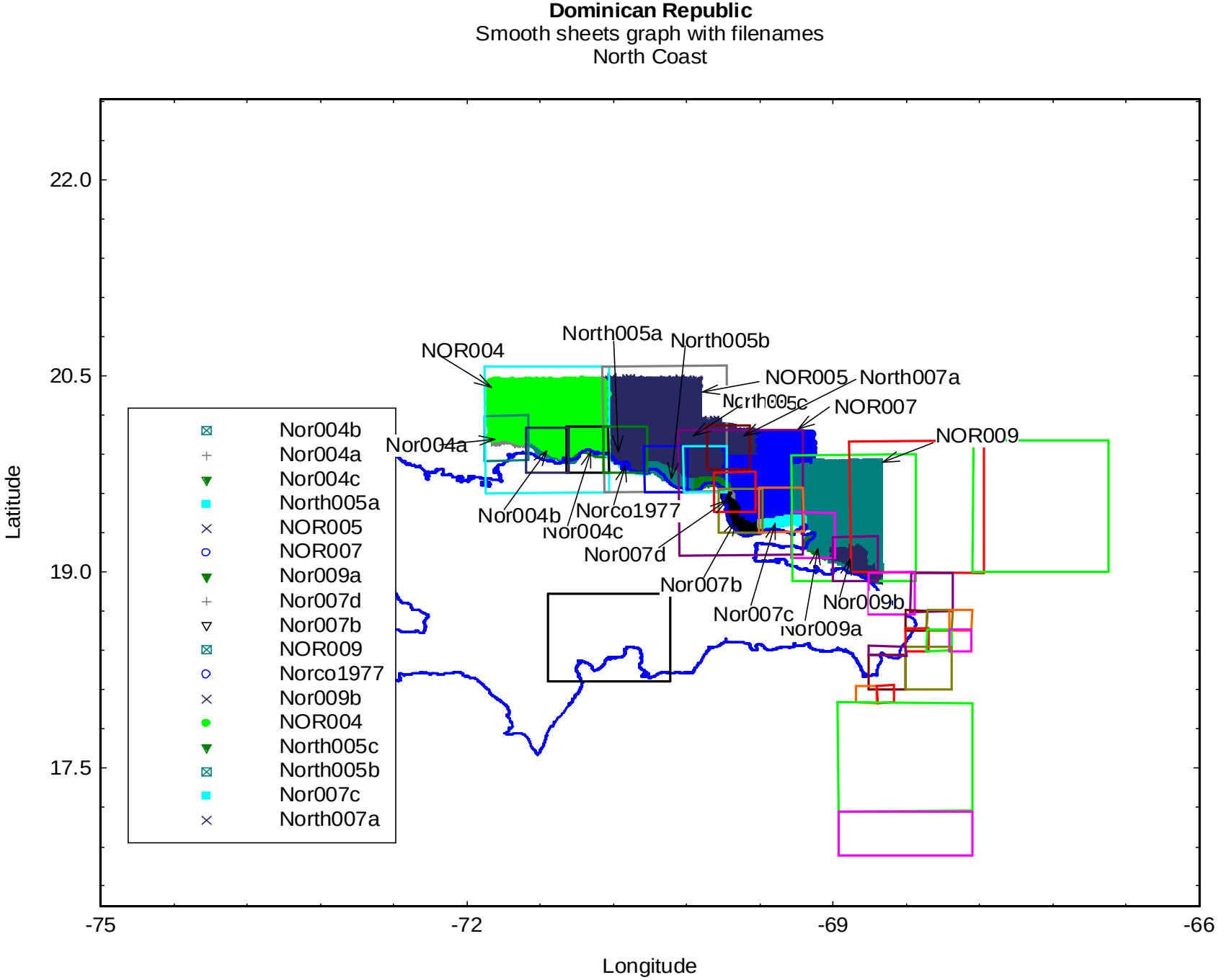


Figure 28b - Composite of north coast smooth sheets digitized in this project. Each smooth sheets is drawn with a different color.

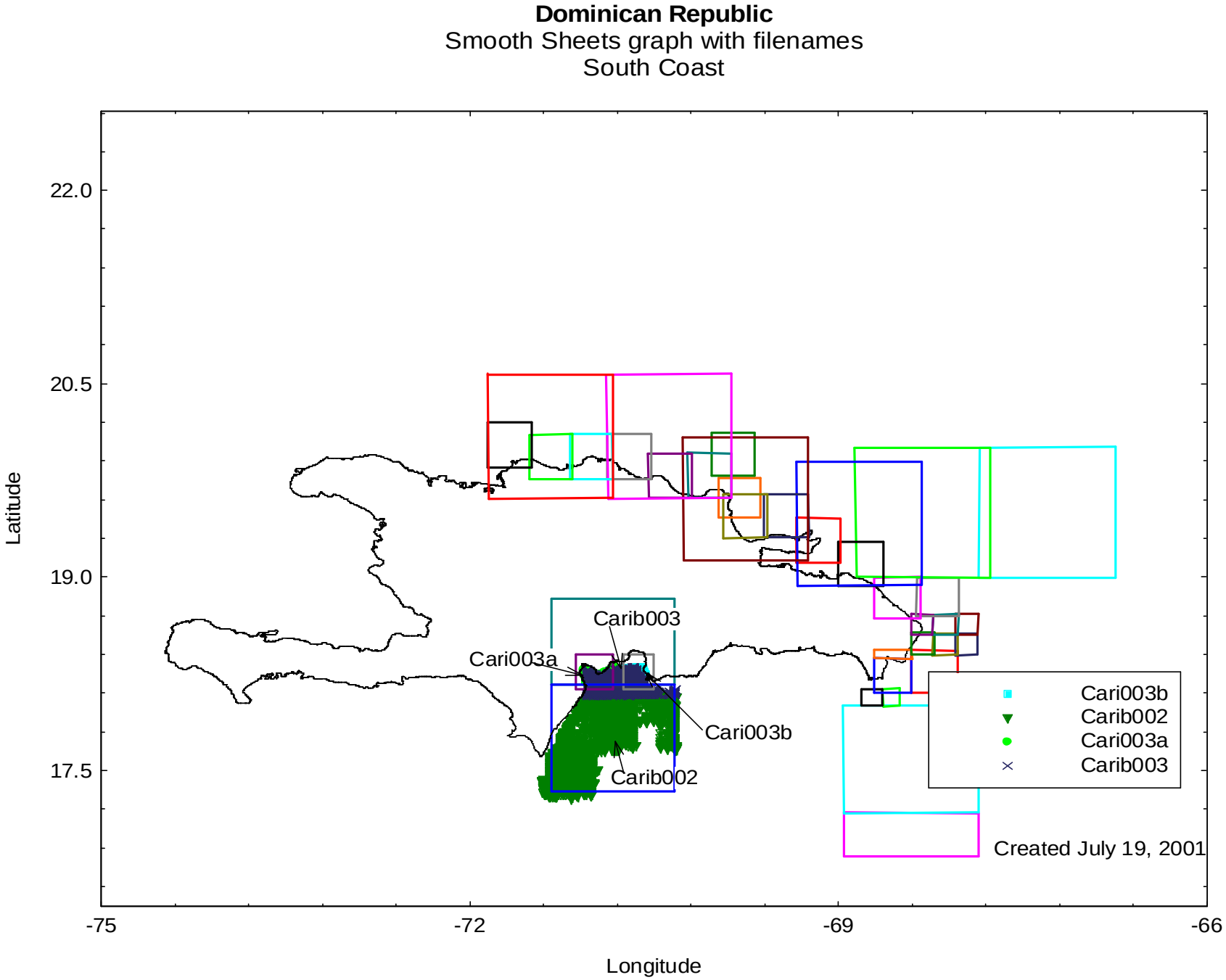


Figure 28c - Composite of south coast smooth sheets digitized in this project. Each smooth sheets is drawn with a different color.

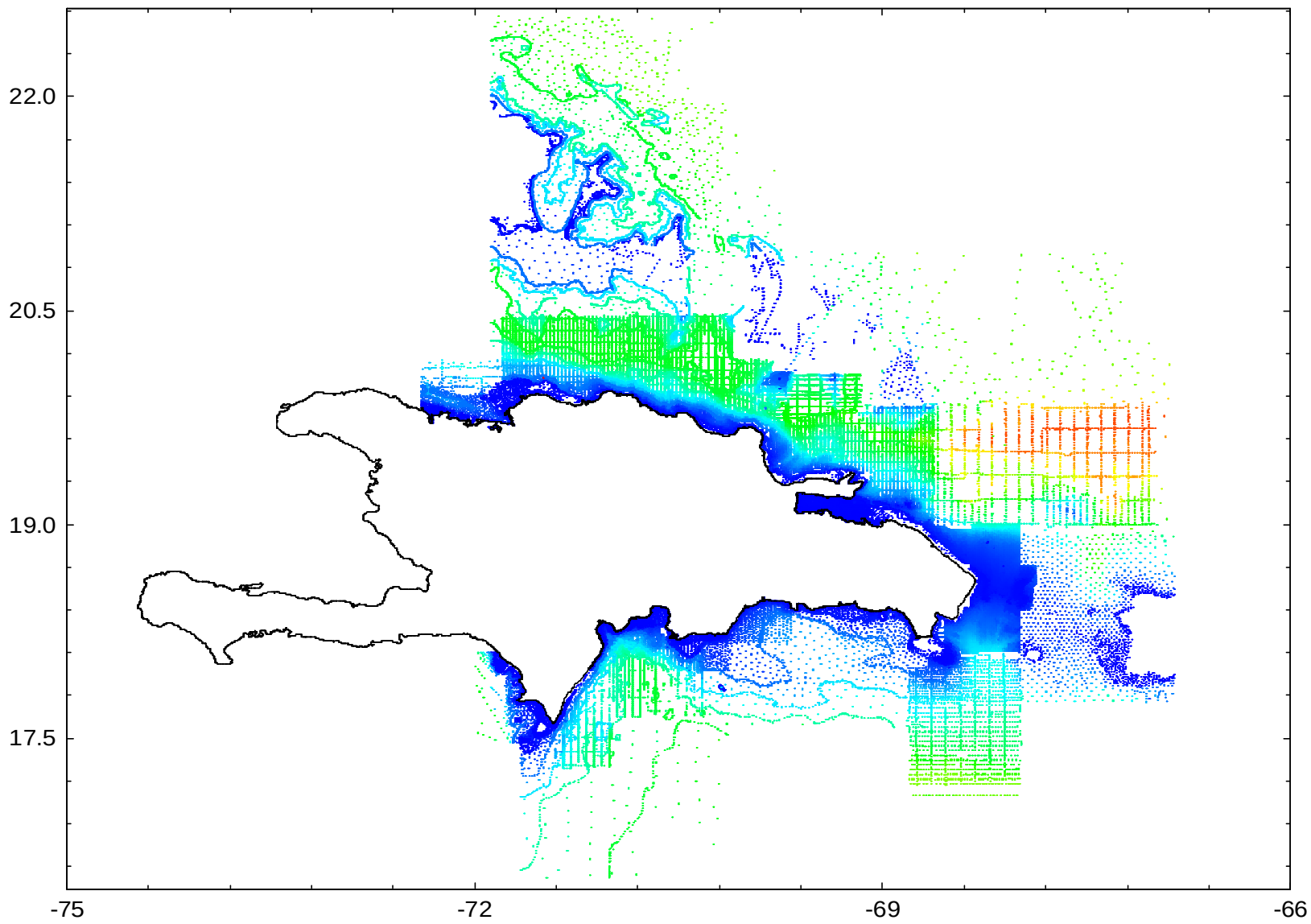


Figure 29 - Composite of all nautical charts and smooth sheets, with depth value color coded.