

Job Report

Rudy Martinez
Marine Biologist

Project No. MF-R-5 Date March 30, 1964
Project Name: Analysis of Populations of Sports and Commercial Fin-Fish
and of Factors Which Affect These Populations in the
Coastal Bays of Texas
Period Covered: January 1, 1963 to December 31, 1963 Job No. 17

Hydrographic and Meteorological Study of the Corpus Christi Bay System

Abstract: Air and water temperatures were similar in pattern to temperatures recorded in 1962. Rainfall and river flow were below normal in 1963. Salinities averaged 36.4 ppt in January and gradually increased to about 40.2 ppt by July.

Objectives: To gather information on the hydrography and meteorology of Corpus Christi Bay.

Procedures: Fourteen stations located in Corpus Christi Bay were sampled once each month. Surface water temperature was measured in °C., and the salinity was determined with a specific gravity hydrometer and the use of Knudsen's Hydrographic Tables.

All climatological data presented herein were taken from the U. S. Department of Commerce Weather Bureau's publication, "Climatological Data of Texas."

Findings and

Discussion: Monthly air temperature averages steadily increased from just over 10°C. in January to a high of just over 29.5°C. in August (Table 1). Air temperatures then dropped gradually to 10.5°C. by December. Hard freezes occurred during the middle of January and during the last week of December. The lowest temperature recorded for this study period was -8°C. on January 24, 1963. The highest temperature was recorded August 20, 1963, when the temperature increased to 37.2°C.

Monthly precipitation, as recorded at the Corpus Christi Airport, is presented in Table 1. A total of 14.66 inches of rain fell in 1963 compared to 15.49 inches in 1962. The largest amount of monthly rainfall was 2.99 inches in August.

Salinity averages are shown in Table 1 and in Figure 1. Monthly salinity averages ranged from 33.2 ppt in March to a high of 40.2 ppt during July and August. Salinities were higher in 1963 than in the previous year. For example, during the period of January through July 1962, salinities in Corpus Christi Bay ranged from 28 ppt to 33 ppt, while during this study they ranged from 36 ppt in January to 38 ppt in July.

Prepared by: Rudy Martinez
Marine Biologist

Joseph P. Breuer
Project Leader

Ernest G. Simmons
Regional Supervisor

Approved by

Terrance R. Leary
Coordinator

Table 1
Hydrographic and Meteorological Data for 1963
Corpus Christi Bay Area

	Salinity <u>in ppt</u>	Precipitation <u>in Inches</u>	<u>Water Temperature °C.</u>		<u>Average Wind Speed</u>	<u>Air Temperature °C.</u>		
			<u>Corpus Christi</u>	<u>Port Aransas</u>		<u>Maximum</u>	<u>Minimum</u>	<u>Average</u>
January	36.4	0.19	9.5	10.1	12.2	16.2	3.8	10.0
February	34.3	1.36	14.8	12.0	14.0	20.5	6.5	11.8
March	33.2	0.09	25.1	17.5	15.0	25.8	15.0	20.4
April	34.5	0.31	26.0	22.6	16.3	29.5	20.0	24.8
May	37.2	0.85	29.2	25.4	13.4	30.4	22.1	26.0
June	38.8	2.35	31.0	28.1	12.6	33.1	23.6	28.4
July	40.2	0.49	31.0	27.5	12.4	33.6	24.8	29.2
August	40.2	2.99	32.0	27.1	10.4	34.5	24.5	29.5
September	37.5	0.92	31.0	26.6	9.5	32.9	22.5	27.9
October	37.3	2.61	26.0	24.9	9.0	29.1	19.2	24.1
November	37.5	1.64	24.0	21.4	12.9	24.8	14.8	19.8
December	37.1	0.86	16.5	13.1	11.5	15.7	5.4	10.5

* mph

Figure 1
Average Monthly Salinity, Water and Air Temperatures, and Total Monthly Rainfall
for Corpus Christi Bay in 1963

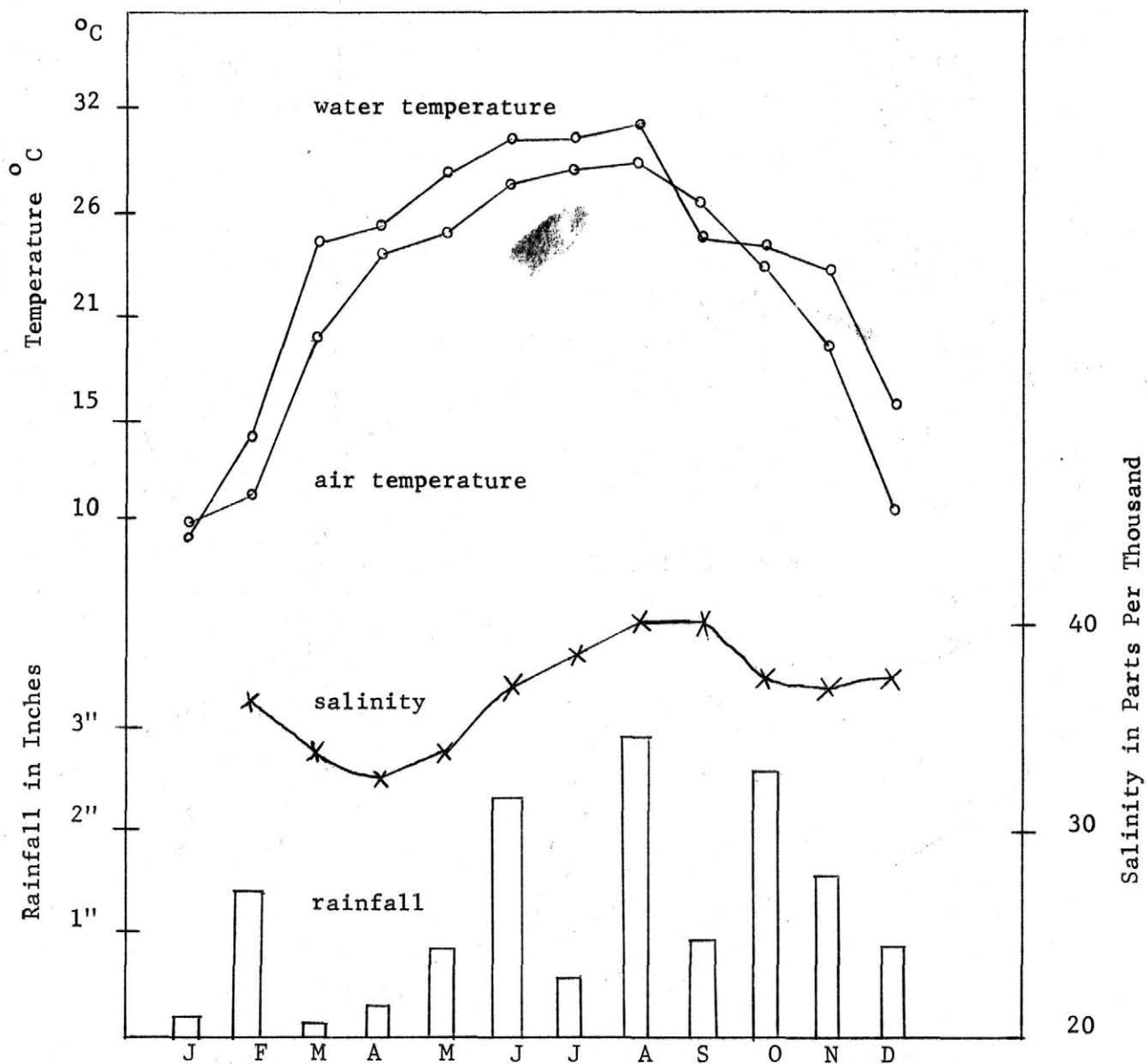


Figure 2
HYDROGRAPHIC STATIONS
CORPUS CHRISTI AREA

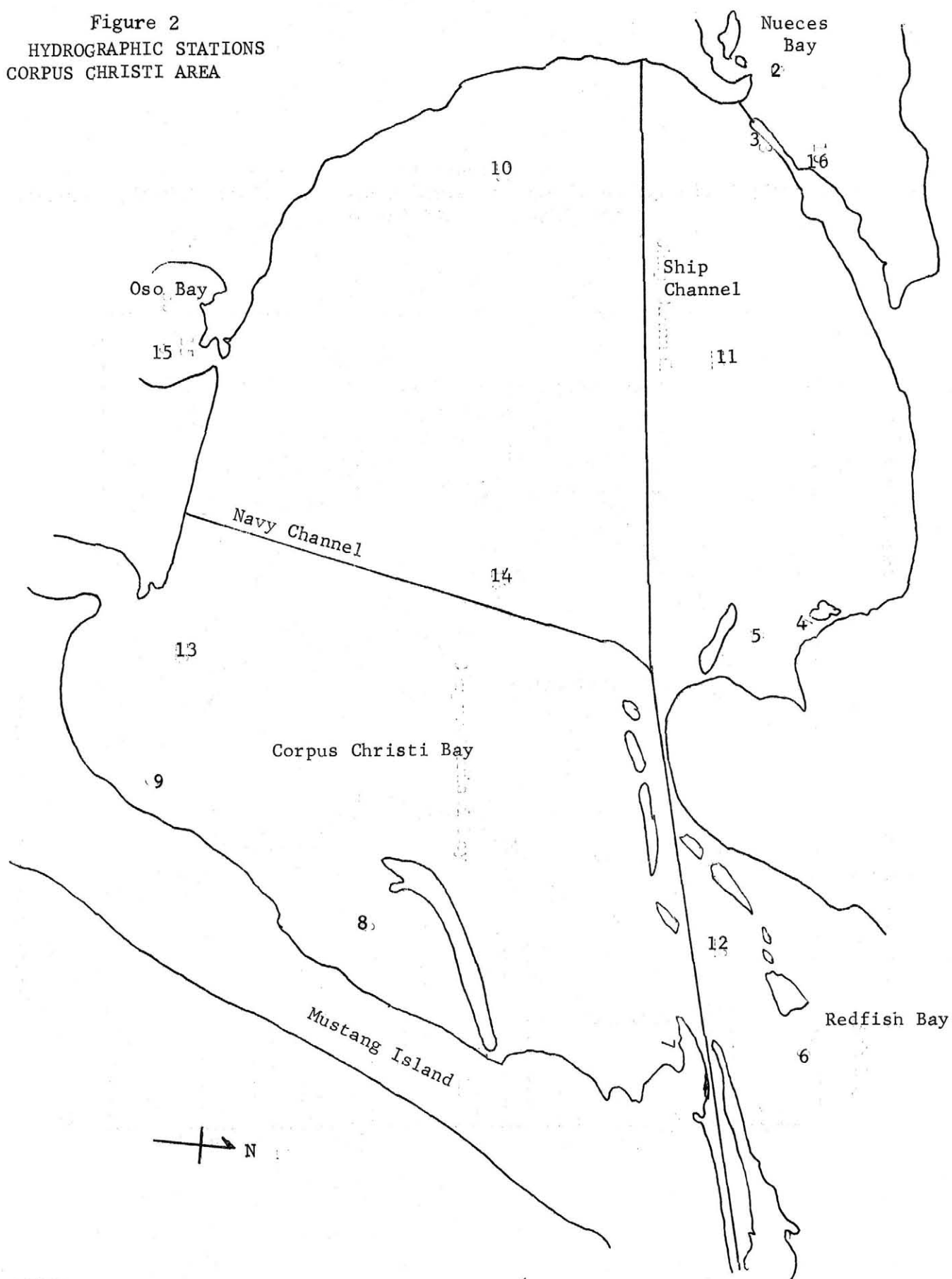


Table 2
SALINITY (IN PPT) BY STATION BY MONTH, 1963
CORPUS CHRISTI BAY AREA

<u>Station</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
2	37.65	35.88	34.03	35.20	36.90	40.25	39.33	38.87	36.50	36.10	37.62	37.20
3	35.65	32.81	33.73	34.01	36.90	39.75	39.84	38.62	36.20	36.18	36.25	36.00
4	35.68	33.31	32.66	33.71	36.75	39.90	40.24	39.54	37.86	37.50	37.42	37.42
5	35.49	33.26	33.73	34.22	36.60	37.56	40.23	39.54	37.60	37.52	37.42	37.42
6	35.48	32.54	31.74	33.68	35.50	36.90	39.42	39.50	37.24	36.86	36.84	36.25
7	36.27	33.91	32.41	31.02	34.90	36.00	36.51	37.42	36.00	36.15	37.87	37.67
8	36.34	35.24	32.85	33.75	37.75	39.32	39.42	39.86	36.82	*	38.20	38.15
9	37.47	34.87	32.85	33.64	38.90	39.84	40.84	41.61	39.88	*	38.60	37.80
10	36.41	33.26	33.45	34.33	36.70	38.26	39.64	39.78	38.06	37.62	36.45	36.30
11	35.89	32.99	33.06	34.20	36.51	37.47	41.02	40.26	37.72	*	37.22	36.82
12	36.21	36.24	33.06	34.20	35.49	36.85	36.02	38.06	36.20	*	36.42	36.00
13	37.29	34.58	32.85	34.20	37.53	39.60	48.60	47.82	38.42	39.62	38.15	37.25
14	36.16	33.26	32.60	35.55	36.53	38.26	41.28	42.86	36.87	*	37.70	37.38
15	37.50	36.09	34.60	39.90	40.22	40.68	40.62	41.67	38.52	39.42	38.17	38.40
16	*	35.71	33.73	36.64	40.66	40.94	39.85	38.72	36.64	36.54	37.62	37.00

* No Sample

Table 3

TEMPERATURE (IN °C.) BY STATION BY MONTH, 1963

CORPUS CHRISTI BAY AREA

<u>STATION</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
2	9.6	14.8	25.1	26.3	28.7	31.2	31.4	32.2	26.2	25.6	23.5	15.2
3	9.6	14.8	25.1	26.3	28.7	31.2	31.2	32.1	26.4	25.8	23.5	15.2
4	9.7	14.6	25.1	26.3	28.9	30.5	30.8	32.2	26.2	25.6	23.7	16.5
5	9.6	14.5	25.1	26.3	28.9	30.6	30.0	32.4	26.1	25.6	23.4	16.5
6	9.5	14.5	24.7	25.1	28.5	30.5	31.4	32.5	26.1	25.9	23.4	16.5
7	9.5	15.2	25.1	26.3	28.8	31.8	31.4	32.5	26.0	26.1	23.8	16.5
8	9.5	15.3	25.2	25.8	29.6	31.6	31.8	32.8	26.0	*	23.6	16.4
9	9.6	15.2	25.2	26.1	29.6	31.8	31.8	32.3	26.2	*	23.7	16.5
10	9.5	15.3	25.3	26.1	29.3	30.8	30.6	32.2	25.8	26.0	23.7	16.5
11	9.6	15.3	25.1	26.3	29.1	30.8	30.8	32.2	25.7	*	23.8	16.4
12	9.5	14.8	24.9	26.3	29.6	31.0	30.8	32.3	26.0	*	23.4	16.3
13	9.5	15.1	25.1	26.1	29.9	31.2	31.2	32.6	26.1	26.1	23.5	16.4
14	9.6	15.3	25.1	26.3	29.8	30.9	31.4	32.4	25.9	*	23.5	16.2
15	9.5	15.3	25.1	26.5	30.2	31.4	31.8	32.8	25.8	26.6	23.7	15.6
16	*	15.2	25.3	26.5	30.3	31.4	31.2	32.7	25.2	26.5	23.8	15.4

* No Sample