JOB PROGRESS REPORT

As required by

FEDERAL AID IN WILDLIFE RESTORATION ACT

TEXAS

Federal Aid Project No. W-29-R-25

COASTAL WATERFOWL PROJECT

Job No. 20 Inventory of Aquatic Vegetation

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December 13, 1972

SUMMARY

Vegetative type mapping of Cedar Lakes, Christmas, Bastrop, and Galveston Bays was completed. Christmas Bay and portions of the southern shore of West Galveston Bay proved to be most productive of aquatic vegetation.

Long-term vegetative trend transects in Laguna Madre, Aransas, Port, Copano, and St. Charles Bays indicated little significant change in species composition or density.

Seasonal hydrographic and phenology stations were checked to monitor saline aquatic plant growth. No significant change from previously reported information was found.

JOB PROGRESS REPORT

State Texas

Project No. W-29-R-25 Project Title: Coastal Waterfowl Project

Job No. 20 Job Title: Inventory of Aquatic Vegetation

Period Covered: October 1, 1971 to September 30, 1972

Objectives:

1. Prepare a vegetative type map of Cedar Lakes, Christmas, Bastrop, and Galveston Bays.

2. Determine vegetative trends and phenology in Laguna Madre, Copano, St. Charles, Aransas, and Port Bays.

Procedures:

1. In Cedar Lakes, Christmas, Bastrop, and Galveston Bays, transects spaced 1 to 3 miles apart were traveled by boat. The rooted plant species composition noted at one-third mile intervals along each transect. Diplanthera wrightii was classified by one of four shoot-volume classes: (1) very abundant stand - 20 to 55 ml. per base unit (25 square inches of area), (2) moderately abundant stand - 11 to 19 ml. per base unit, (3) light stand - 2 to 10 ml. per base unit, and (4) sparse stand - .5 to 1.5 ml. per base unit. Thalassia testudinum was classified by 1 of 3 shoot-volume classes: (1) abundant stand - 36 to 100+ ml. per base unit, (2) moderately abundant stand - 11 to 35 ml. per base unit, and (3) light stand - 1 to 10 ml. per base unit. Ruppia maritima was classified by 1 of 3 shoot-volume classes: (1) abundant stand - 20 to 110+ ml. per base unit, (2) moderately abundant stand - 8 to 19 ml. per base unit, and (3) light stand - 2 to 7 ml. per base unit. Cymodocea manatorum was classified the same as described for Ruppia maritima. Ten bottom samples were collected at each interval stop along each transect. The per cent cover of each volume class per species was recorded on prepared data sheets.

2. Transects established under segment 21 in Laguna Madre, Copano, Aransas, St. Charles, and Port Bays were checked in July to determine vegetation trends and species composition. Data were obtained and recorded as described in Procedure 1 (vegetative type mapping). The determination of Diplanthera wrightii phenology and Cymodocea manatorum, Ruppia maritima, and Thalassia testudinum phenology and

Procedures: (Cont.)

trend was studied on established locations in Laguna Madre, Aransas, and St. Charles Bays. Each location was checked seasonally (April, July, October, and January). Ten samples (25 square inches each) were collected with a posthole digger within a 5-yard radius of each location. Pertinent plant phenology data together with light, temperature, and salinity readings were recorded on prepared data sheets for each location.

Findings:

1. Vegetative type mapping in Cedar Lakes, Christmas, Bastrop, and Galveston Bays was completed on schedule.

   The main, open-water portions of all bays, except Christmas, were either too deep, contained shell reefs, or were too badly silted to support aquatic vegetation. Nearly all vegetation was found in shallow areas and coves in less than 5 feet of water. Light to moderate stands of shoalgrass and widgeongrass characterized those areas having vegetation (Figures 1-3). No significant vegetation was found in Cedar Lakes, East Galveston Bay, or Trinity Bay. Christmas Bay (Figure 1) and portions of the southern shore of West Galveston Bay proved to be most productive of aquatic vegetation. Christmas Bay was characterized by moderate to scattered heavy stands of shoalgrass and widgeongrass. These areas must be considered the best bay waterfowl habitat on the upper Texas Gulf coast.

2. Vegetative Trend Transects

   Long-term vegetative trend transects established under segment 21 were run in July and observations recorded on prepared data sheets. A comparison of 1971 and 1972 data recorded for these transects is shown in Table 1. Some relatively minor changes can be seen; however, these changes are likely part of the normal fluctuation influenced by weather and water conditions.

   Plant Phenology Stations

   Hydrographic and phenology stations established under segment 21 were checked seasonally to monitor aquatic plant growth. No significant changes in plant phenology were observed during segment 25.

Prepared by Robert L. West
Project Leader

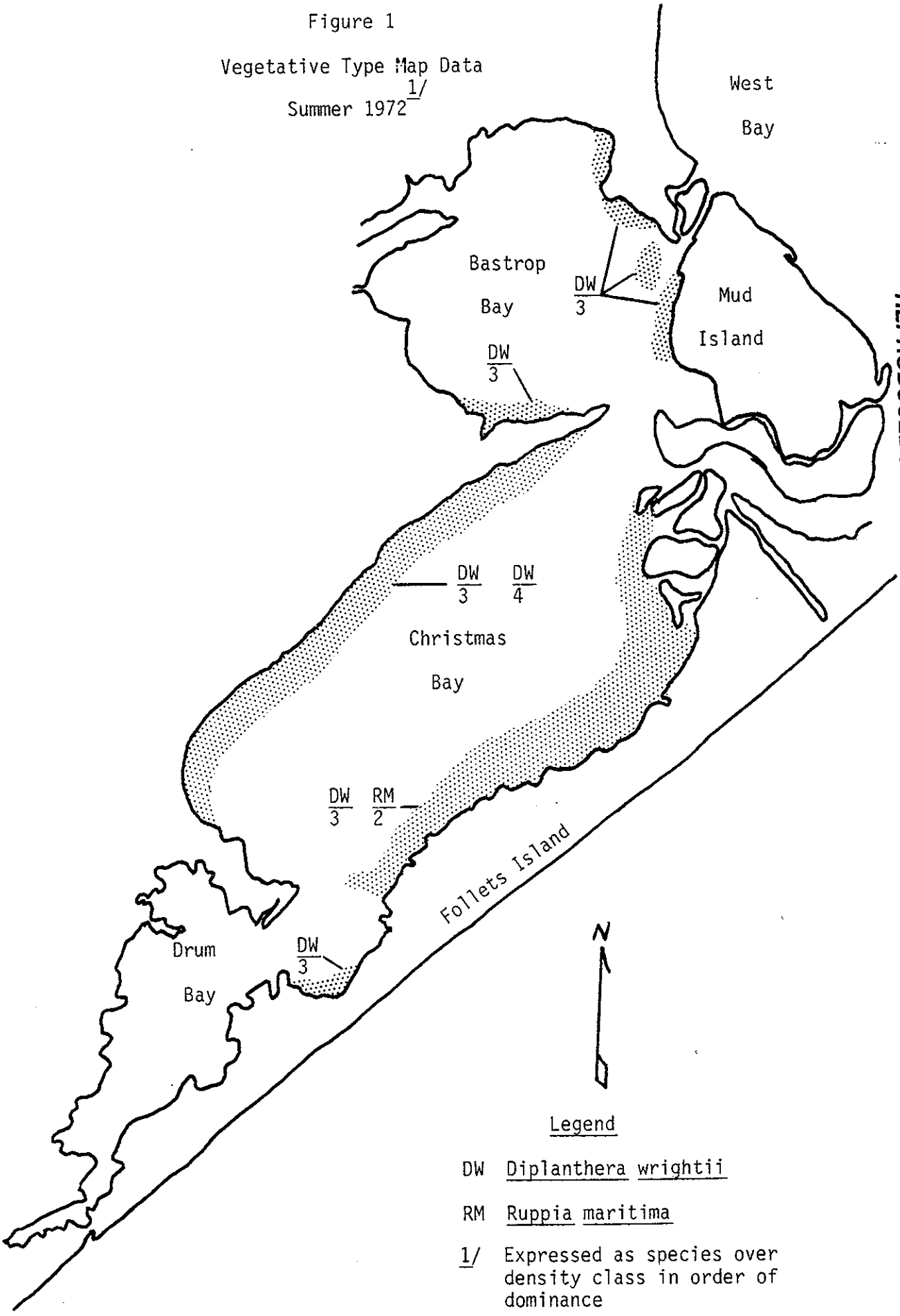
Approved by P. B. Uzzell

Date December 13, 1972

Charles K. Winkler
Regional Director for Wildlife

Figure 1

Vegetative Type Map Data
Summer 1972 1/



Legend

DW Diplanthera wrightii

RM Ruppia maritima

1/ Expressed as species over density class in order of dominance

Scale: 1 inch = 1 statute mile

Figure 2

Vegetative Type Map Data
1/
Summer 1972

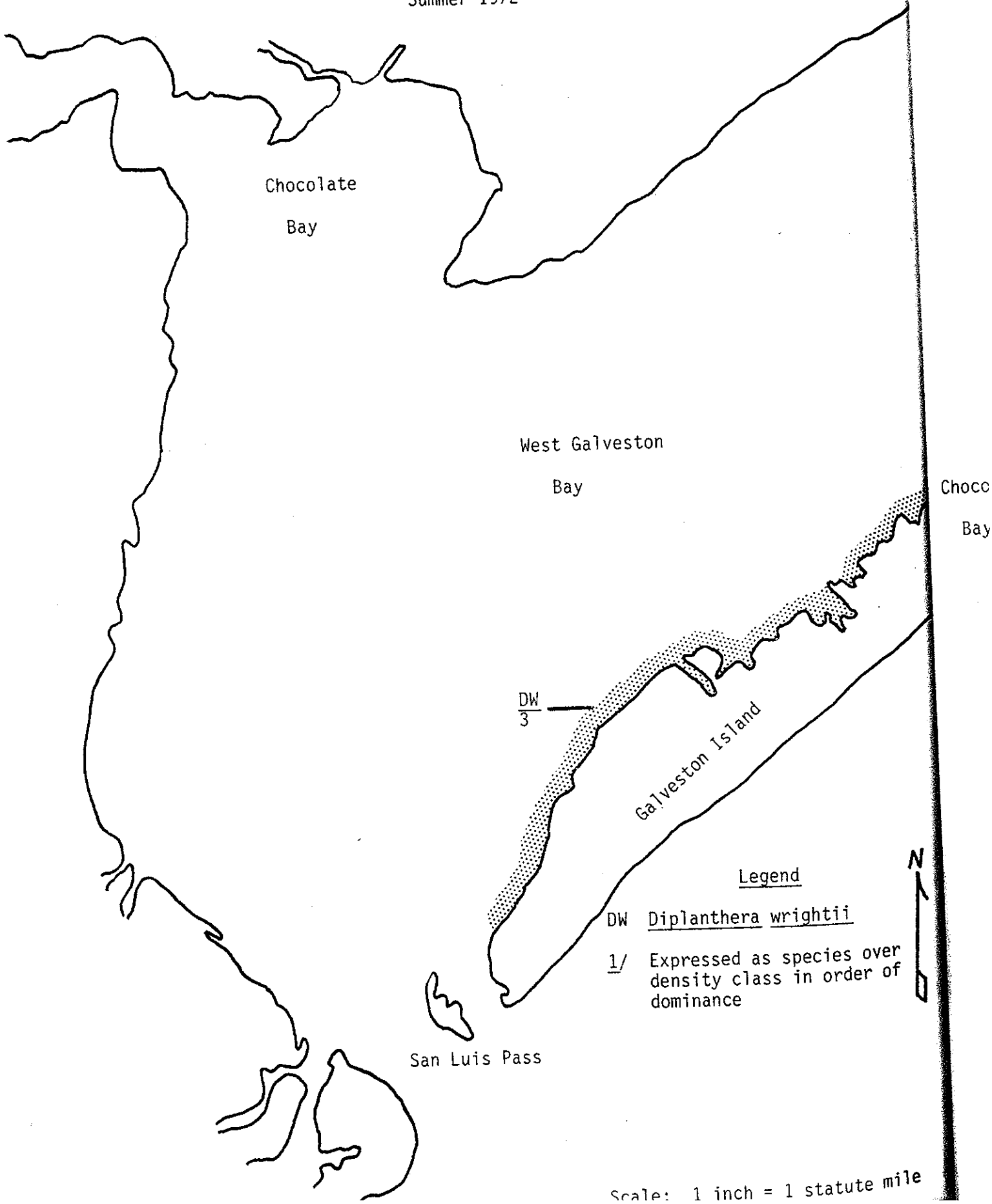
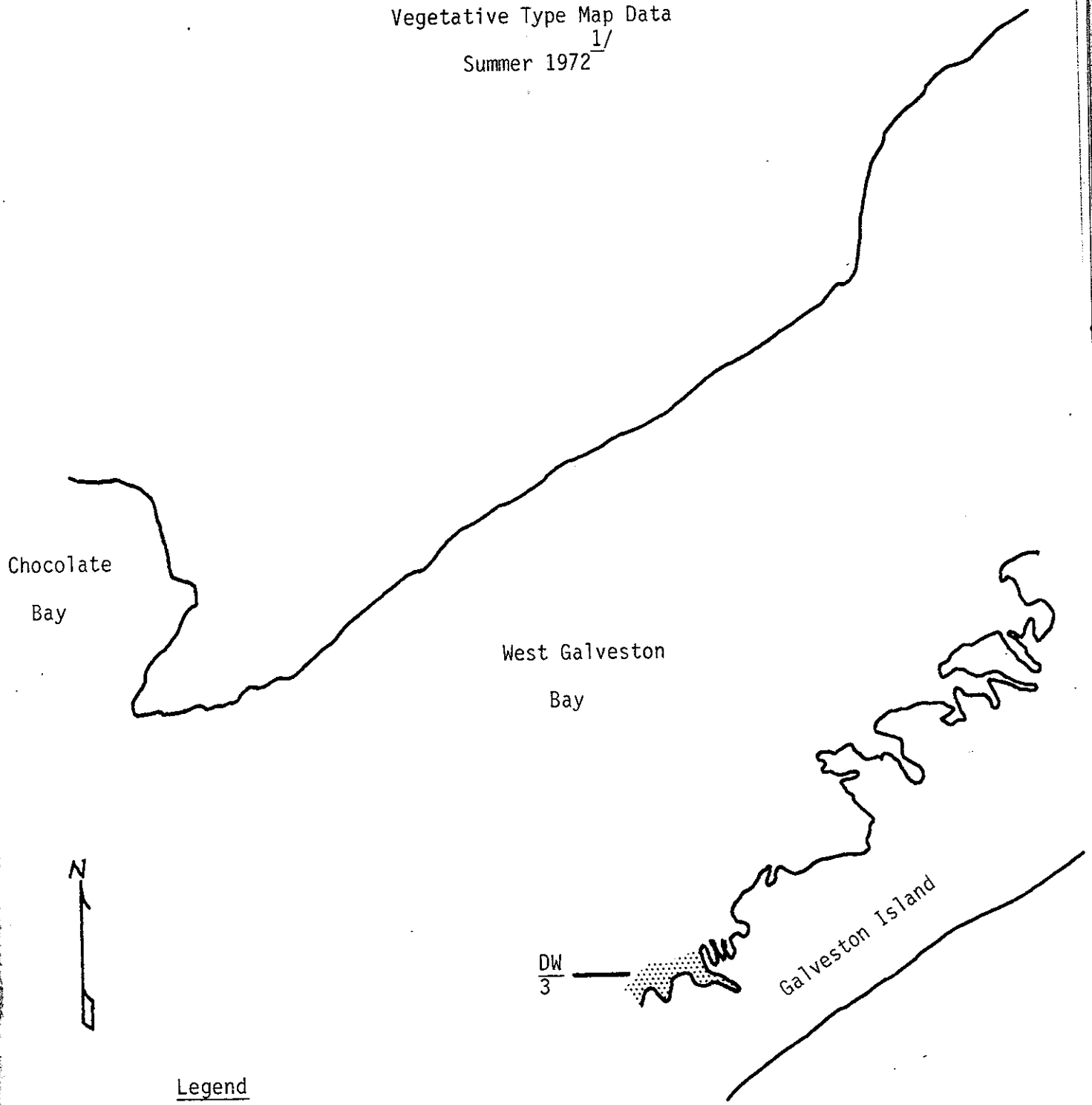


Figure 3

Vegetative Type Map Data
1/
Summer 1972



Legend

DW Diplanthera wrightii

1/ Expressed as species over density class in order of dominance

Scale: 1 inch = 1 statute mile

Table 1

Vegetative Trend Transects 1/
Species by Density Class

Transect	Year	Shoalgrass DW/2	Shoalgrass DW/3	Shoalgrass DW/4	Widgeongrass RM/1	Widgeongrass RM/2	Widgeongrass RM/3	Manateegrass CM/2	Manateegrass CM/3	Turtlegrass TT/2	Turtlegrass TT/3	Total Vegetation	Un-vegetated
1	1971	4.2	15.8	7.4				5.3	17.4	T		50.1	49.9
	1972		16.7	T				24.0	T	T		42.7	57.3
2	1971		62.9					2.9	1.4			67.2	32.8
	1972		55.0	7.5				25.0				87.5	12.5
3	1971		35.0	7.0				1.0				43.0	57.0
	1972	3.0	38.0	8.0								49.0	51.0
4	1971	12.5	33.8				T					46.3	53.7
	1972		33.3									33.3	66.7
5	1971		57.0				T					57.0	43.0
	1972		70.0	3.3								73.3	26.7
6	1971		100.0									100.0	0.0
	1972	3.0	75.0			15.0	4.0					97.0	3.0
7	1971		52.5				1.7		.8	1.7	27.5	84.2	15.8
	1972		35.4	2.7		2.7	6.3				19.1	66.2	33.8
8	1971		23.8									23.8	76.2
	1972		33.3			33.3						66.6	33.4
9	1971		17.0									17.0	83.0
	1972												100.0
10	1971		60.0			6.7						66.7	33.3
	1972		36.7									36.7	63.3
11	1971		63.3				3.3					66.7	33.4
	1972		65.0			1.7						66.7	33.3
12	1971		46.7			50.0						96.7	3.3
	1972		10.0									10.0	90.0

1/ Expressed as per cent bottom cover