

*Coastal Bend Bays & Estuaries Program
Protecting our Bays and Estuaries*

Colonial Waterbird and Rookery Island Management Plan



*By Allan H. Chaney, Ph.D. and Gene W. Blacklock
April 2005*



The Colonial Waterbird and Rookery Island Management Plan is a partnership effort of the Coastal Bend Bays & Estuaries Program, Gulf of Mexico Program, US Fish & Wildlife Service and Texas Audubon Society. Requests for copies of this plan should be addressed to:

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This project supports the following action items in the Implementation Strategy for the Coastal Bend Bays Plan:

- HLR-1** *Preserve functional, natural habitats*
- HLR-2** *Create new habitats and/or restore degraded habitats where feasible*
- HLR-4** *Develop management plans to ensure sustainability for species of concern*
- HLR-10** *Develop management plans to minimize introductions and impacts from non-native species*
- BTR-3** *Develop and implement management strategies to reduce or avoid impacts from recreational uses (related actions BD1)*

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for the
Coastal Bend Bays & Estuaries Program

Preface

The preliminary draft of the *Colonial Waterbird and Rookery Island Management Plan* includes field observations and management recommendations based on historical surveys up to and including summer 2003 bird counts. The plan encompasses 183 sites which support or have recently supported colonial waterbird nesting along the central Texas coast.

The report is the second iteration of the Rookery Island Management Plan described in the Coastal Bend Bays & Estuaries Program's workplan. The purpose is to characterize coastal rookeries, identify habitats and impacts, and to summarize historical population trends. Site-specific recommendations provide resource managers with strategies to improve waterbird breeding success.

Acknowledgements

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Table of Contents

PREFACE	II
ACKNOWLEDGEMENTS.....	II
LIST OF ACRONYMS	IX
ISLAND NAME CROSS REFERENCE TABLE.....	X
INTRODUCTION	XV
ABOUT THIS PLAN.....	XV
ROOKERY ISLANDS	1
ISLAND 614-384A.....	2
ISLAND 614-384B.....	4
ISLAND 614-383A.....	6
ISLAND 614-383B.....	7
ISLAND 614-383C.....	9
ISLAND 614-382A.....	12
ISLAND 614-382B.....	13
ISLAND 614-380B.....	16
ISLAND 614-380C.....	17
ISLAND 614-380E.....	19
ISLAND 614-380F.....	21
ISLAND 614-380G.....	23
ISLAND 614-380H.....	25
ISLAND 614-380I.....	26
ISLAND 614-380J.....	28
ISLAND 614-380K.....	29
ISLAND 614-364A.....	31
ISLAND 614-364B.....	33
ISLAND 614-364C.....	34
ISLAND 614-363.....	35
ISLAND 614-362A.....	37
ISLAND 614-362B.....	39
ISLAND 614-362C.....	41

ISLAND 614–362D	42
ISLAND 614–362E	43
ISLAND 614–361A	44
ISLAND 614–361B	46
ISLAND 614–361C	48
ISLAND 614–361D	50
ISLAND 614–361E	52
ISLAND 614–361F	54
ISLAND 614–361G	56
ISLAND 614–360	58
ISLAND 614–348	60
ISLAND 614–347	61
ISLAND 614–346	62
ISLAND 614–345	63
ISLAND 614–344	65
ISLAND 614–343	67
ISLAND 614–342A	69
ISLAND 614–342B	71
ISLAND 614–341A	73
ISLAND 614–341B	75
ISLAND 614–341C	77
ISLAND 614–341D	79
ISLAND 641–340	81
ISLAND 614–306	83
ISLAND 614–305A	85
ISLAND 614–305B	87
ISLAND 614–305C	89
ISLAND 614–305D	90
ISLAND 614–305E	91
ISLAND 614–305F	92
ISLAND 614–305G	93
ISLAND 614–304A	95
ISLAND 614–304B	96
ISLAND 614–302A	98

ISLAND 614–302B	100
ISLAND 614–301A	101
ISLAND 614–301B	102
ISLAND 614–301C	104
ISLAND 614–300A	105
ISLAND 614–300B	107
ISLAND 614–300C	109
ISLAND 614–300D	111
ISLAND 614–300E	113
ISLAND 614–300F	115
ISLAND 614–300G	117
ISLAND 614–300H	119
ISLAND 614–300I	121
ISLAND 614–300J	122
ISLAND 614–300K	124
ISLAND 614–300L	125
ISLAND 614–240A	127
ISLAND 614–240B	129
ISLAND 614–240C	131
ISLAND 614–240D	133
ISLAND 614–240E	135
ISLAND 614–240F	136
ISLAND 614–240G	138
ISLAND 614–240H	139
ISLAND 614–240I	140
ISLAND 614–240J	142
ISLAND 614–240K	144
ISLAND 614–222A	146
ISLAND 614–222B	147
ISLAND 614–222C	148
ISLAND 614–222D	149
ISLAND 614–222E	150
ISLAND 614–222F	151
ISLAND 614–222G	152

ISLAND 614–222H 154
ISLAND 614–222I 155
ISLAND 614–222J 157
ISLAND 614–222K 158
ISLAND 614–222L 159
ISLAND 614–222M 160
ISLAND 614–222N 161
ISLAND 614–222O 162
ISLAND 614–222P 163
ISLAND 614–222Q 164
ISLAND 614–222R 166
ISLAND 614–222S 167
ISLAND 614–222T 169
ISLAND 614–222U 170
ISLAND 614–222V 172
ISLAND 614–222W 173
ISLAND 614–222X 174
ISLAND 614–222Y 175
ISLAND 614–222Z 177
ISLAND 614–222AA 178
ISLAND 614–222BB 179
ISLAND 614–222CC 180
ISLAND 614–221A 182
ISLAND 614–221B 184
ISLAND 614–221C 186
ISLAND 614–221D 188
ISLAND 614–221E 190
ISLAND 614–221F 192
ISLAND 614–221G 194
ISLAND 614–221H 195
ISLAND 614–221I 196
ISLAND 614–221J 198
ISLAND 614–221K 199
ISLAND 614–221L 201

ISLAND 614–221M	202
ISLAND 614–221N	203
ISLAND 614–221O	204
ISLAND 614–221P	206
ISLAND 614–221Q	208
ISLAND 614–221R	209
ISLAND 614–221S	210
ISLAND 614–190	212
ISLAND 614–189	213
ISLAND 614–188A	214
ISLAND 614–188B	216
ISLAND 614–186	217
ISLAND 614–185A	219
ISLAND 614–185B	221
ISLAND 614–184	222
ISLAND 614–183	224
ISLAND 614–181	225
ISLAND 614–160	227
ISLAND 614–144	229
ISLAND 614–143	231
ISLAND 614–141A	233
ISLAND 614–141H	235
ISLAND 614–141B2	236
ISLAND 614–141B	237
ISLAND 614–141C	238
ISLAND 614–141B1	239
ISLAND 614–141G	240
ISLAND 614–140E(A)	241
ISLAND 614–140E(C)	243
ISLAND 614–140E(J)	244
ISLAND 614–140E(D)	245
ISLAND 614–140W(P)	246
ISLAND 614–140W(K)	247
ISLAND 614–123	248

ISLAND 614–122 250
ISLAND 614–121 252
ISLAND 614– (*COLONY CODE PENDING) 254
ISLAND 614–105 255
ISLAND 614–104 256
ISLAND 614–103 257
ISLAND 614–103A 259
ISLAND 614–102 260
ISLAND 614–101 262
ISLAND 614–100 264
ISLAND 609–501A 266
ISLAND 609–501B 268
ISLAND 609–482A 269
ISLAND 609–482B 270
ISLAND 609–424 272
ISLAND 609–422 274
ISLAND 609–340 276
ISLAND 609–322 278
ISLAND 609–321 279
ISLAND 609–320 281
ISLAND 609–280 283
APPENDIX I – PLANTS REFERENCED IN THE TEXT 285

List of Acronyms

AWPE	American White Pelican
BCNH	Black-Crowned Night-Heron
BLSK	Black Skimmer
BRPE	Brown Pelican
CAEG	Cattle Egret
CATE	Caspian Tern
COTE	Common Tern
FOTE	Forster's Tern
GBHE	Great Blue Heron
GBTE	Gull-Billed Tern
GIWW	Gulf Intracoastal Waterway
GREG	Great Egret
LAGU	Laughing Gull
LBHE	Little Blue Heron
LETE	Least Tern
PAIS	Padre Island National Seashore
REEG	Reddish Egret
ROSP	Roseate Spoonbill
ROYT	Royal Tern
SATE	Sandwich Tern
SNEG	Snowy Egret
SOTE	Sooty Tern
TRHE	Tri-Colored Herons
WFIB	White-Faced Ibis
WHIB	White Ibis

Island Name Cross Reference Table

Colony	Latitude	Longitude	Old Name	New GIWW Marker	Old GIWW Marker
614-384a	27.178802	-97.427669	(1) SB	49	
614-384b	27.181635	-97.428344	(2) SB	47	
614-383a	27.1897	-97.4266	(3) SB	43	
614-383b	27.195797	-97.42521	(4) SB	41a	
614-383c	27.197599	-97.425017	(5) SB	41	
614-383d	27.200389	-97.424535	(6) SB	39	
614-382a	27.204294	-97.42357	(7) SB	35a	
614-382b	27.206998	-97.422654	(8) SB	35	
614-380a	27.221589	-97.419711	9	29	
614-380b	27.22182	-97.419641	10	33	
614-380c	27.22425	-97.418745	11	27	
614-380e	27.227962	-97.418335	13	25	
614-380f	27.229099	-97.418191	14	23A	
614-380g	27.230902	-97.417225	15	23	
614-380h	27.232533	-97.416694	16	21A	
614-380i	27.235279	-97.416212	17	21	
614-380j	27.236738	-97.416115	18	19A	
614-380k	27.23794	-97.415922	19	19	
614-364a	27.327	-97.392152	32	199A	
614-364b	27.325712	-97.390522	33	199B	
614-364c	27.324344	-97.388438	34	199C	
614-363	27.368439	-97.382463	36	178	86
614-362a	27.246952	-97.414016	20	17A	
614-362b	27.243347	-97.414692	21	17	135
614-362c	27.250385	-97.408415	22	15A	133A
614-362d	27.251415	-97.405519	23	15B	133B
614-362e	27.251072	-97.403201	24	15C	133C
614-361a	27.285882	-97.405554	25	221	117
614-361b	27.291031	-97.40492	26	219	113
614-361c	27.295779	-97.404015	27	217	111
614-361d	27.298837	-97.403562	28	215	109
614-361e	27.303343	-97.402567	29	213	107
614-361f	27.306561	-97.40139	30	211	105
614-361g	27.30978	-97.400937	31	209	103
614-360	27.348242	-97.38391	35	187	91
614-348	27.416718	-97.358722	(40) NB	154	None
614-347	27.378578	-97.370592	37	169	85
614-346	27.403763	-97.356997	39	157	75
614-345	27.391854	-97.363433	38	163	81

Island Name Cross Reference Table (cont.)

Colony	Latitude	Longitude	Old Name	New GIWW Marker	Old GIWW Marker
614-344	27.422189	-97.356093	41	152	72
614-343	27.433455	-97.342222	42	141	69
614-342a	27.452202	-97.332062	43	131	65
614-342b	27.459364	-97.328254	44	127	63
614-341a	27.4794	-97.318278	45	117	57A
614-341b	27.482538	-97.316464	46	115	57
614-341c	27.486481	-97.314559	47	113A	55A
614-341d	27.489458	-97.313108	48	111	55
614-340	27.492685	-97.305742	49		
614-306	27.520494	-97.290352	50		
614-305a	27.507277	-97.302741	51	103	51
614-305b	27.510538	-97.301289	52	101A	49A
614-305c	27.513113	-97.299934	53	101	49
614-305d	27.516375	-97.298772	54	97A	47A
614-305e	27.519121	-97.296933	55	97	47
614-305f	27.521954	-97.295772	56	95	45
614-305g	27.525644	-97.294127	57	93	43
614-304a	submerged	submerged	58	92	42
614-304b	27.534592	-97.297744	59	90	42
614-302a	27.554183	-97.286298	60	80	42
614-302b	27.556425	-97.277777	61	79	37
614-301a	27.569761	-97.270854	62	73	37
614-301b	27.566221	-97.278176	63	72	34
614-301c	27.586659	-97.261926	64	63	33
614-300a	27.591166	-97.259746	65	59	29
614-300b	27.592678	-97.264484	66		28
614-300c	27.593665	-97.267728	67		
614-300d	27.595124	-97.270392	68		
614-300e	27.595811	-97.273684	69		
614-300f	27.597613	-97.273153	70		
614-300g	27.602248	-97.270828	71		
614-300h	27.605639	-97.272475	72		
614-300i	27.601347	-97.275476	73		
614-300j	27.597356	-97.277219	74		
614-300k	27.598901	-97.280609	75		
614-300l	27.602463	-97.28756	76		
614-240a	27.635679	-97.235321	106	35	15
614-240b	27.643704	-97.232172	107	31	
614-240c	27.647352	-97.231349	108	29	
614-240d	27.654819	-97.230284	109	25	
614-240e	27.657952	-97.228491	110	23A	
614-240f	27.660055	-97.228152	111	23	

Island Name Cross Reference Table (cont.)

Colony	Latitude	Longitude	Old Name	New GIWW Marker	Old GIWW Marker
614-240g	27.662802	-97.227086	112	21	
614-240h	27.666364	-97.225535	113	19	
614-240i	27.671857	-97.225148	114	17	
614-240j	27.676706	-97.223258	115	15	
614-240k	27.681384	-97.221127	116	13	
614-222a	27.633061	-97.244046	77		
614-222b	27.633576	-97.245524	78		
614-222c	27.634263	-97.246396	79		
614-222d	27.634692	-97.247268	80		
614-222e	27.635121	-97.24826	81		
614-222f	27.635615	-97.249035	82		
614-222g	27.65173	-97.26153	83		
614-222h	27.646494	-97.259544	84		
614-222i	27.636838	-97.262159	85		
614-222j	27.642202	-97.261917	86		
614-222k	27.640486	-97.259058	87		
614-222l	27.63937	-97.263807	88		
614-222m	submerged	submerged	89		
614-222n	27.632841	-97.268047	90		
614-222o	27.628942	-97.270178	91		
614-222p	27.626495	-97.271583	92		
614-222q	27.624907	-97.272794	93		
614-222r	submerged	submerged	94		
614-222s	27.625294	-97.276572	95		
614-222t	27.62362	-97.27478	96		
614-222u	27.621903	-97.272406	97		
614-222v	27.636881	-97.271461	98		
614-222w	27.636108	-97.269717	99		
614-222x	27.630701	-97.280883	100		
614-222y	27.641473	-97.267731	101		
614-222z	27.632031	-97.276378	102		
614-222aa	27.644906	-97.263904	103		
614-222bb	27.650056	-97.266035	104		
614-222cc	27.648425	-97.261869	105		
614-221a	27.677822	-97.239396	117		
614-221b	27.685633	-97.238718	118		
614-221c	27.675633	-97.253886	119		
614-221d	27.674303	-97.251415	120		
614-221e	27.6722	-97.250058	121		
614-221f	27.670612	-97.248459	122		
614-221g	27.668681	-97.251851	123		
614-221h	27.663875	-97.248604	124		
614-221i	27.662973	-97.246618	125		

Island Name Cross Reference Table (cont.)

Colony	Latitude	Longitude	Old Name	New GIWW Marker	Old GIWW Marker
614-221j	27.658038	-97.245407	126		
614-221k	27.653489	-97.242015	127		
614-221l	27.654219	-97.247829	128		
614-221m	27.646279	-97.243032	129		
614-221n	27.646751	-97.247732	130		
614-221o	27.663059	-97.254516	131		
614-221p	27.670441	-97.258343	132		
614-221q	27.668252	-97.259458	133		
614-221r	27.660484	-97.260572	134		
614-221s	27.657695	-97.250979	135		
614-190	27.86	-97.15			
614-189	27.83361	-97.17222			
614-188	27.85	-97.16			
614-188a	27.85	-97.16			
614-186	27.76	-97.16889			
614-185a	27.81	-97.21			
614-185b	27.81	-97.18			
614-184	27.82	-97.15889			
614-183	27.825	-97.13			
614-181	27.83694	-97.12694			
614-160	27.85778	-97.24583			
614-144	27.81	-97.39			
614-143	27.86	-97.49			
614-141A	27.84	-97.38			
614-141H	27.86	-97.38			
614-141b2	27.86	-97.36			
614-141B	27.86	-97.36			
614-141C	27.86	-97.36			
614-141b1	27.86	-97.36			
614-141G	27.86	-97.35			
614-140e(A)	27.85	-97.48			
614-140e(C)	27.85	-97.48			
614-140e(J)	27.85	-97.48			
614-140e(D)	27.85	-97.48			
614-140w(P)	27.86	-97.49			
614-140w(K)	27.86	-97.49			
614-123	27.89778	-97.105			
614-122	27.93389	-97.08583			
614-121	27.93083	-97.09778			
614-120a	27.965	-97.095			
614-120b	27.965	-97.095			
614-105	27.93	-97.11			
614-104	27.81028	-97.39111			
614-103a	27.87583	-97.13583			

Colony	Latitude	Longitude	Old Name	New GIWW Marker	Old GIWW Marker
614-103b	27.86	-97.15			
614-102	27.90	-97.12			
614-101	27.89694	-97.14194			
614-100	27.90778	-97.12583			
609-501a	28.065	-96.96277			
609-501b	28.08	-96.97			
609-482a	28.03	-97.04			
609-482b	28.03277	-97.03694			
609-424	28.1488	-96.87277			
609-422	28.19277	-96.815			
609-322	28.36	-96.71			
609-280	28.3977	-96.74			

Introduction

Colonial waterbird and coastal shorebird populations are key environmental indicators of estuary health and productivity. They represent the top of the food chain and reflect the system's overall health. Additionally, communities along the Texas coast enjoy economic benefits from the increasing popularity of birding ecotourism – especially colonial waterbirds. However, along the central and lower Texas coasts recent studies show a dramatic decline in certain colonial waterbird populations.

The *Colonial Waterbird and Rookery Island Management Plan* includes field observations and broad, site-specific recommendations for 183 rookery sites extending from the Land Cut in the Laguna Madre northward to Aransas Bay. Many sites were originally created through deposition of dredge material. Some of these have developed into productive habitat for colonial waterbirds while others have eroded and are now submerged. Other factors affecting breeding success include availability of appropriate ground cover and substrate, impacts from recreational activities and human disturbance, predation by fire ants, snakes, raccoons and coyotes, and competition among birds for limited nesting space.

The plan identifies management strategies for restoring, enhancing and protecting waterbird habitat. The recommendations are designed to achieve the following objectives:

- Sustain healthy colonial waterbird species populations and habitats;
- Identify prospective areas for rookery island creation and enhancement
- Identify impacts to avian resources; and
- Provide management actions to minimize or eliminate impacts to colonial waterbird populations and habitat.

About this Plan

Rookery islands are organized according to US Fish & Wildlife Service's naming convention for waterbird colonies. Historical names for each island are also shown. The Island Name Cross Reference Table provides a reference for the old and new rookery island naming systems. Data from bird surveys for each site indicate the number of nesting bird pairs between 1997 and 2003. The acronyms used in the bird surveys are listed on page viii.

Rookery Islands

Island 614-384A

Old Name: (1) SB–NM49

Location

Latitude: 27.1788 **Longitude:** -97.4277 **Area:** .2147 ha **Elevation:** 1.1 m
Length: 41.2 m **Width:** 60 m

Description

Ownership: Texas General Land Office

Impacts: three cabins

Predators: fire ants and humans

Substrate types: serpulid and coquina reef limestone rock and cobble, large and small shell, sand with little silt

Summary: This is the first island north of the Land Cut for which there are records of nesting colonial waterbirds. It is a part of a chain of small islands on the eastern side of the Gulf Intracoastal Waterway (GIWW) that stretches from the Land Cut to Baffin Bay. They are all excellent for nesting because they are distantly removed from land and therefore, from predators. Unfortunately, most of the larger islands support cabins for human recreation.

This island is long and narrow with three vegetated areas connected by sand spits. There are three cabins on the central portion and one on the southern end. East of the cabins are two large pits containing brackish water and a stand of cordgrass in which there are scattered clumps of prickly pear and the remains of some small spreading mesquite. Additionally, there is sea oxeye, false ragweed, saltgrass, shoregrass, evening primrose and pigweed on the higher slopes. These grade into the halophytes around the margins and extend out into the sand spits. The small isolated island to the east is connected to the main island by a band of rocky material, visible at low tide. The crown of this island is mostly prickly pear with some grasses and sea oxeye.

Bird Survey 1997 – 2003

614-384A	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE	2			6	3	8	8
GREG							6
SNEG				2	32	7	41
TRHE					28	1	10
REEG	1			4	8		
CAEG				1			
LAGU	10		28	52	41	28	135
GBTE				35	25	7	
ROYT				26		30	30
SATE				70			40

614-384A	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
LETE				8			
BLSK			24	90	18	60	112

Nesting/Use History

Individual records for this island began in 1986. Nesting pairs were not reported until one pair of black skimmers was observed on one of the sand spits in 1995. Two pair of great blue herons appeared in 1996, and were joined by a pair of reddish egrets in 1997. The great diversity of nesters appeared in 2000 when the terns, black skimmers and laughing gulls occupied the sand spits. The herons and egrets used the vegetation on the isolated eastern island. Human activity on the island must have been reduced that year. Tri-colored herons appeared in 2001 and were found in the higher vegetation throughout the main island.

Discussion and Management Recommendations

This is an ideal island for colonial waterbirds. Recommendations:

1. Remove cabins and replace with mesquite trees.
2. Cabin owners should be notified to stay away from the sand spits and the isolated island.
3. Cabin owners should be notified to restrict their activity to a minimum during the nesting season.

Island 614–384B

Old Name: (2) SB–NM47

Location

Latitude: 27.1816 **Longitude:** -97.4283 **Area:** .3913 ha **Elevation:** 1.0 m
Length: 108.5 m **Width:** 44 m

Description

Ownership: Texas General Land Office

Impacts: one cabin, remains of a plywood shack, dilapidated pier

Predators: fire ants

Substrate types: serpulid and coquina reef rock and cobble, shell and sand

Summary: This island was once connected to the previous island (614–384A), and at very low tides the connection is exposed. A sand spit on the south end connects to two higher, old dredged material deposits. The crown of the first deposit contains a pit surrounded by cordgrass and saltgrass. Prickly pear is present and sea oxeye is distributed on the northern portion of the crown. This grades into the more halophytic species that fringe the margin of the vegetation. The second and more northern deposit contains the remains of a cabin, a dilapidated pier, and a plywood shack that has no number. The vegetation there consists of camphor daisy, evening primrose, sea oxeye, saltgrass, shoregrass, false ragweed, pigweed and halophytes.

Bird Survey 1997 – 2003

614-384B	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
SNEG						40	4
TRHE							2
REEG						6	3
CAEG						1	2
LAGU	6			56		15	13
GBTE				1		21	52
BLSK	3		4	2		12	43

Nesting/Use History

The first recorded instance of birds nesting on this island occurred in 1988 when gull-billed terns, black skimmers and laughing gulls were counted. No further nesting was recorded until 1997 when black skimmers and laughing gulls were observed. Although the island was occupied in 2000, mostly by laughing gulls, no nesting occurred in 2001. Many human tracks between this and its neighbor (614–384A) have been observed.

Discussion and Management Recommendations

This could be made into an excellent island for all types of birds. There is a good foundation of rock for deposition on this island. Recommendations:

1. Remove the remains of the cabin and plywood shack.
2. Deposit dredge material on the northern end and provide containment to the east and north.
3. Establish trees to attract herons and egrets.
4. Post signs to prohibit human activity during nesting season.

Island 614–383A

Old Name: (3) SB–NM43

Location

Latitude: 27.1897 **Longitude:** -97.4266 **Area:** .0679 ha **Elevation:** 0.0 m
Length: 40.3 m **Width:** 19.5 m

Description

Ownership: Texas General Land Office

Impacts: one cabin and fishing pier

Predators: none

Substrate types: serpulid and coquina reef limestone rock and cobble, sand and little shell

Summary: This is a very low island that is subject to flooding during high tides. On the northern end there is one cabin on piers – the roof and associated fishing pier are in disrepair. Evidently, the original island has slowly eroded leaving only the small remnant.

Bird Survey 1997 - 2003

614-383A	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
LAGU		4					
GBTE	21	13					
BLSK	33	30					

Nesting/Use History

Laughing gulls were found nesting here in 1992 and 1998. The only other nesting was by gull-billed terns and black skimmers in 1997 and 1998. They were probably unsuccessful if a high tide occurred.

Discussion and Management Recommendations

A good foundation is present and proper deposition of dredged material could create a new island. Recommendations:

1. Although the island is in an ideal location, the recommendation is to let it erode away.
2. If material is deposited, some kind of containment is recommended. The cabin should be removed to reduce human interference with nesting birds.

Island 614–383B

Old Name: (4) SB–NM41A

Location

Latitude: 27.1957 **Longitude:** -97.4258 **Area:** .0487 ha **Elevation:** 0.75 m
Length: 37.2 m **Width:** 12.8 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: serpulid and coquina reef limestone rock and cobble, small shell and sand

Summary: This low, crescent-shaped island is situated in an ideal location. It is surrounded by bare sand and shell with a central core of low halophytic vegetation. The high point of the island is in the northeast corner where it gradually slopes to the west.

Bird Survey 1997 - 2003

614-383B	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
REEG		1					
LAGU	35	77					24
GBTE	11				4		
ROYT							
SATE							
FOTE							
LETE							
BLSK	19	34		1	40		6

Nesting/Use History

This island has been a good for species that nest on bare sand or in sparsely vegetated areas. Gull-billed terns, black skimmers and least terns were first observed here in 1984 when individual island counts began. The least terns never attempted to nest here again. Forster's terns appeared in 1987 and 1988, but were not observed later. Royal terns used the site from 1991 to 1995 and Sandwich terns joined them from 1993 to 1995. Black skimmers have consistently used the island except for 1999 and 2002.

Discussion and Management Recommendations

Recommendations:

1. The target species for this island should be terns and skimmers.
2. The island could be enhanced with the deposition of additional dredged material. Containment should be provided.
3. Vegetation growth should be monitored and any excess removed.

Island 614–383C**Old Name:** (5) SB–NM41**Location**

Latitude: 27.1976 **Longitude:** -97.425 **Area:** .2156 ha **Elevation:** 1.1 m
Length: 80 m **Width:** 28.2 m

Description**Ownership:** Texas General Land Office**Impacts:** one cabin and pier**Predators:** fire ants**Substrate types:** serpulid and coquina reef limestone rock and cobble, small shell and sand

Summary: This is a small, well-vegetated island with a single cabin just southeast of the center. There is a pier that extends to the northwest toward the GIWW. The island's foundation is very good and the bare areas of sand and shell are loose and not compacted. The vegetation on the higher elevations consists of saltgrass, false ragweed, primrose, pigweed and sea oxeye. There are large areas of bare sand that could support skimmers.

Bird Survey 1997 - 2003

614-383C	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG							
TRHE							
REEG							
LAGU				1			
GBTE				17			
ROYT							
SATE							
BLSK			6	6	3		

Nesting/Use History

The first individual records were collected in 1984 when the island was used by tri-colored herons, snowy egrets, gull-billed terns, black skimmers and laughing gulls. Tri-colored herons were especially abundant with 53 pair observed. The herons and egrets continued to occupy the island until 1992, and two pair of each reappeared in 1996. Five reddish egrets were present in 1991 as were great blue herons in 1992 and 1996. No herons or egrets reappeared. Royal terns in 1990 and 1992 and Sandwich terns in 1990 joined the bare-ground and sparse vegetation-nesters. The original three ground-nesters continued to intermittently use the vegetation and bare ground until 2000. Only three pair of skimmers attempted to nest here in 2001. The absence of skimmers in some years could be due to cabin owner activity.

Discussion and Management Recommendations

Human activity appears to be a limiting factor for nesting birds. The cabin is well-constructed and appears to be heavily used. Recommendations:

1. The island is presently only good for skimmer nesting.
2. Cabin owners should be made aware of the island's natural history and asked to restrict their activity outside the cabin.
3. If the cabin were destroyed, this island could be combined with island 614-383B and formed into a much larger one. Fresh dredge material and containment would be required.

Island 614–383D

Old Name: (6) SB–NM39

Location

Latitude: 27.2004 **Longitude:** -97.4245 **Area:** .0447 ha **Elevation:** 0.15 m
Length: 42.3 m **Width:** 10.1 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: serpulid and coquina reef limestone rock and cobble, sand and shell

Summary: Evidently, this was once a vegetated island but it has since eroded away, leaving only bare rocks and cobble.

Bird Survey 1997 - 2003

614-383D	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
SNEG							
TRHE							
REEG							
LAGU							
GBTE							
BLSK					2		1

Nesting/Use History

The primary nesters since 1984 have been gull-billed terns, black skimmers and a few laughing gulls. The herons and egrets, found only in 1991 and 1992, may have been recorded for the wrong island.

Discussion and Management Recommendations

This site is isolated and disturbed only by wading fishermen. Recommendations:

1. New material could enlarge the island and containment should be provided.

Island 614–382A

Old Name: (7) SB–NM35A

Location

Latitude: 27.2043 **Longitude:** -97.4236 **Area:** .1566 ha **Elevation:** 0.6 m
Length: 60 m **Width:** 25.6 m

Description

Ownership: Texas General Land Office

Impacts: metal cabin, outhouse and pier

Predators: fire ants

Substrate types: serpulid and coquina reef limestone rock and cobble, shell and some sand

Summary: This small island is narrowly separated from its northern neighbor by a stretch of water. There is a fair amount of bare sand and shell around a central core of vegetation. A metal cabin is found on the eastern side with an outhouse on the western high point of the island. A pier extends into the deeper water to the south. The northern bar is composed primarily of serpulid cobble and shell. The vegetation is primarily various halophytes.

Bird Survey 1997 - 2003

614-382A	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
TRHE							
LAGU							
GBTE		4					
BLSK		38		11		26	18

Nesting/Use History

Forty-two laughing gulls, nine black skimmers and a single pair of tri-colored herons nested here in 1984. The herons never returned and the skimmers and gulls have used the island intermittently ever since. Four gull-billed terns tried nesting here in 1998.

Discussion and Management Recommendations

Recommendations:

1. The cabin users should be made aware that skimmers possibly nest on the northern bar.
2. Management for birds requires removal of the shack and the addition of dredged material.

Island 614–382B

Old Name: (8) SB–NM35

Location

Latitude: 27.207 **Longitude:** 97.4227 **Area:** 1.6456 ha **Elevation:** 1.8 m
Length: 468 m **Width:** 122 m

Description

Ownership: Texas General Land Office

Impacts: six cabins, outhouses and piers

Predators: fire ants

Substrate types: serpulid and coquina reef limestone rock and cobble, shell and sand

Summary: This is one of the larger islands in this chain and has changed very little since 1996, with the exception of the westward extension of the southern sandbar. The western area includes six cabins with associated outhouses and five piers. A single pier extends from the left side. The area southwest of the cabins is heavily vegetated, but less so toward the south. The southern area contains a dense growth of sea oxeye, prickly pear and false ragweed. Near the cabins there is cordgrass, saltgrass and sandbur. The eastern higher side of the island is not as densely covered as the southern area. It contains some cordgrass, sea oxeye and scattered patches of prickly pear, camphor daisy and guinea grass. These all grade into halophytes at the water's edge. The northern extension is more vegetated than the southern one with good stands of pigweed, sea purslane, saltwort and glasswort.

Bird Survey 1997 - 2003

614-382B	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE	4						
GREG	4						
SNEG	20		2	3	2		
TRHE	26		8	32	5	6	2
REEG	12	2	4	6		2	
CAEG	2						
LAGU	245	182	206	231	217	57	37
GBTE		14			8	4	
ROYT							
LETE		1					
BLSK	115	100	75	80	89	70	11

Nesting/Use History

In spite of the cabins and human activity, this has been a good island for a variety of colonial waterbirds. Fifty-six pair of both tri-colored herons and laughing gulls, and one pair of

skimmers were recorded in 1984. From that point forward, there was a steady increase in the number of species and pairs, until recently. This could be due to increased human activity and the construction of the eastern pier. Most heron and egret nesting has occurred in the dense growth on the southern and southeastern area of the island. Terns and skimmers have occupied the two extensions, the southern one especially by skimmers. Laughing gull nests have been distributed throughout the vegetated areas.

Discussion and Management Recommendations

Recommendations:

1. The cabin users should be educated about the nesting history of the island.
2. The eastern pier should be abandoned.
3. Humans should refrain from excessive use of the southern and eastern region of the island from April – July.
4. Human activity should be completely avoided on the north and south extension from April – July.
5. Remove the houseboat anchored near the tip of the southern bar.

Island 614–380A

Latitude: 27.2216 **Longitude:** -97.4197 **Area:** N/A **Elevation:** N/A
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: N/A

Substrate types: sand

Summary: This was a narrow strip of sand and shell, but it is now completely submerged.

Bird Survey 1997 - 2003

614-380A	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBTE	submerged						
BLSK							

Nesting/Use History

A few pair of skimmers attempted to nest here from 1990 to 1996. Gull-billed terns joined the skimmers in 1993 and 1996. In 1996 the island was finally flooded.

Discussion and Management Recommendations

There are no recommendations for this site.

Island 614-380B

Old Name: (10) SB-NM33

Location

Latitude: 27.2218 **Longitude:** -97.4187 **Area:** .0981 ha **Elevation:** 0.9 m
Length: 81 m **Width:** 18.8 m

Description

Ownership: Texas General Land Office

Impacts: one cabin

Predators: N/A

Substrate types: serpulid and coquina reef limestone rock and cobble, sand and shell

Summary: This is a long strip of serpulid rocks, sand and shell with very little vegetation. A cabin with a damaged roof is located near the center. The vegetation is primarily halophytes with some pigweed. Much of the island is bare.

Bird Survey 1997 - 2003

614-380A	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
SNEG							
TRHE							
LAGU							
GBTE				7			
BLSK			6	55		13	16

Nesting/Use History

Beginning in 1977, gull-billed terns and skimmers attempted to nest here. In subsequent years they were joined by laughing gulls, tri-colored herons and in one year, by snowy egrets. Evidently, some skimmers nested after the 2001 count since an unfledged chick was seen in September. Occupation has been intermittent, depending on tidal conditions and human activity.

Discussion and Management Recommendations

Recommendations:

1. This island presents a good foundation for deposition and for the formation of a larger island.
2. The cabin should be removed.

Island 614-380C

Old Name: (11) NM27

Location

Latitude: 27.2243 **Longitude:** -97.4187 **Area:** 1.1735 ha **Elevation:** 0.9 m
Length: 374.4 m **Width:** 58.5 m

Description

Ownership: Texas General Land Office

Impacts: eight cabins

Predators: fire ants

Substrate types: serpulid and coquina reef limestone rock, sand and shell

Summary: This is one of the larger islands of this chain and it is well occupied by cabins - each with its own pier and outhouse at the end. Three cabins on the southern end have additional piers extending to the east. The island appears to have been formed by five or six original deposits. The southern and northern area of this site is connected by a narrow section of primarily sand and shell. Vegetation on the southern end is typical of these islands with pigweed, wolfberry, seablite, sea purslane, glasswort and saltwort. The higher areas contain sea oxeye and saltgrass. There is a large hole in the northern part of this section. The northern section contains much more sea oxeye and saltgrass. There is a mixture of grasses and false ragweed on the higher elevations. There are bare areas at each end of the island.

Bird Survey 1997 - 2003

614-380C	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
SNEG					5		2
TRHE			3	88	24	2	10
REEG							
CAEG				1			
LAGU	105	7	206	210	217	42	585
GBTE		7					
BLSK	45	42	44				

Nesting/Use History

Recordings of nesting tri-colored herons, snowy egrets, skimmers and laughing gulls date to 1984. Laughing gulls have been the most persistent nesting species. Gull-billed terns were present only in 1985, 1986 and 1998. The return in numbers of tri-colored herons in 2000 (88) and in 2001 (24) is noteworthy. The intermittent nesting activity is probably due to one or more combined factors including the frequency of cabin use by the lessees, little rainfall, and poor vegetation growth.

Discussion and Management Recommendations

This site is an ideal location for waterbird management. It has the proper vegetation and ideal feeding areas are nearby. Recommendations:

1. Little can be done to manage this island for birds unless the cabins are removed.
2. The cabin users should be educated about the island's nesting history and the value of promoting successful bird nesting, especially the tri-colored herons.

Island 614-380E**Old Name:** (13) NM25**Location**

Latitude: 27.2280 **Longitude:** -97.4183 **Area:** .1823 ha **Elevation:** 0.6 m
Length: 56.1 m **Width:** 47.9 m

Description**Ownership:** Texas General Land Office**Impacts:** N/A**Predators:** fire ants**Substrate types:** serpulid and coquina reef limestone rock, sand and shell

Summary: This small island has a good foundation that slopes up from the water to a central crown. There is good growth of sea oxeye on the crown mixed with false ragweed and pigweed. Typical halophytes surround the margin.

Bird Survey 1997 - 2003

614-380E	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG	12	1		6	2		2
TRHE	1	2	3	14	14	11	16
REEG				4		1	
LAGU	42	210	6	14	4	11	22
GBTE						1	6
ROYT	74		146			12	54
SATE			2				
FOTE							1
SOTE						1	
BLSK		11		18	7	7	24

Nesting/Use History

In 1980, tri-colored herons, royal terns, gull-billed terns, skimmers and laughing gulls occupied this island. Snowy egrets began nesting in 1984, and reddish egrets in 1988. Reddish egrets reappeared in 1994 and 1996. Two pair of Forster's terns nested here in 1985, but did not return. Tri-colored herons and snowy egrets have consistently nested in the sea oxeye throughout the years. Sandwich terns joined the royal terns in 1999. The royal terns returned to the island in 2002 and 2003. Black skimmers and gull-billed terns have used the bare marginal areas during most of the years, skimmers more so than terns. Laughing gulls have nested on this site every year except one since 1980.

Discussion and Management Recommendations

This is an excellent island for birds that nest on higher platforms. Wade fishermen closely approach these islands during the nesting season. Recommendations:

1. If the island is selected for deposition and is enlarged, trees should be planted.
2. Signs should be installed to prohibit human activity during the spring and summer months when wade fishermen tend to closely approach.

Island 614–380F

Old Name: (14) NM23A

Location

Latitude: 27.2291 **Longitude:** -97.4182 **Area:** .0793 ha **Elevation:** 0.6 m
Length: 47 m **Width:** 28.8 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This island is smaller than the one previous (614–380E). There is a central core of sea oxeye, false ragweed and pigweed surrounded by halophytes. There are bare margins around the island with extensions to the north and south.

Bird Survey 1997 - 2003

614-380F	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
SNEG		1		2	1	5	5
TRHE		3	1	3	4	8	7
REEG	1			3		4	
CAEG							
LAGU	30/21P	50/35P	12/8P	16/11P	7/6P	7	4
GBTE	10/7P	18/13P		12/8P	6/4P	18	1
ROYT		60					
BLSK	22/11P	40/20P	16/8P	28/14P	80/40P	40	12

Nesting/Use History

The records for this island indicate a wide variety of colonial waterbirds using this site since recording began in 1978 with the discovery of gull-billed terns and skimmers. These two bare-ground nesters have continued to use this island through the years, skimmers more often than terns. In 1980, 46 pair of royal terns replaced skimmers, 6 pair did the same in 1990 and 60 pair nested with skimmers in 1998. A few pair of laughing gulls nested in the low vegetation almost every year since 1983. Herons and egrets appeared in 1989 and small numbers have used the island intermittently since.

Discussion and Management Recommendations

This is a good island for enhancement through deposition and containment of good material. The union of this island with either or both of its neighbors would create a single, remote island, large enough to be managed for all bird species in this area. This would alleviate some of the pressure to nest on islands with human activity. The creation of such an island requires a large expenditure of money, material and time. Mitigated material could be barged to the area and off-loaded; the water is deep enough on the western side. Recommendations:

1. Use deposition to create a large island and install containment devices.
2. A person with knowledge of colonial waterbirds should perform management and oversight of the project.

Island 614–380G**Old Name:** (15) NM23**Location**

Latitude: 27.2309 **Longitude:** -97.4172 **Area:** .2082 ha **Elevation:** 0.6 m
Length: 164.5 m **Width:** 25 m

Description**Ownership:** Texas General Land Office**Impacts:** cabin remnants**Predators:** fire ants**Substrate types:** serpulid and coquina reef rock and cobble, sand and shell

Summary: This is another low island with a central vegetated region surrounded by bare sand and shell. There is a long, bare extension to the south that emerges during low tide. The remains of a cabin are scattered among the vegetation on the crown. Vegetation consists of sea oxeye, pigweed, evening primrose and halophytes.

Bird Survey 1997 - 2003

614-380G	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG		1					
TRHE		1		5		3	2
REEG							
LAGU	8	20	10	14	1	8	18
GBTE	15	4				8	
CATE							
ROYT							
SATE							
BLSK	37	12	7		3	9	30

Nesting/Use History

Recorded observations since 1977 indicate bird diversity is declining. In the early years ground-nesters were prevalent, especially royal terns. However, the terns have not been observed nesting since 1980. Tri-colored herons were also present in 1977, along with snowy egrets, which used the island intermittently until 1994. Only the five individual tri-colored herons have appeared since that year. One reddish egret was observed in 1987 and there were three seen in 1991. A few pair of laughing gulls appeared in most years.

Discussion and Management Recommendations

Evidently, the cabin was destroyed by the last hurricane and Texas General Land Office did not allow reconstruction. With the removal of the cabin debris, this would be a good island for birds. The proper vegetation is present for all but the tree-nesters. A larger island could be created here if several adjacent islands were joined with additional material.

Recommendations:

1. Remove cabin debris.
2. Plant proper native trees where the cabin was located.
3. Place additional deposition material to enlarge and enhance the island.
4. Install signs to prohibit human activity during the nesting season.

Island 614–380H

Old Name: (16) NM21A

Location

Latitude: 27.2325 **Longitude:** -97.4167 **Area:** .0770 ha **Elevation:** 0.3 m
Length: 79.1 m **Width:** 13.8 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This low stretch of dredged material is all that remains of the original deposit. Most of the island is submerged during high tides. There is a small amount of low, halophytic vegetation on the higher part.

Bird Survey 1997 - 2003

610-380H	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
LAGU							
GBTE							
SATE							
BLSK	20/10P	20/10P			4/2P	2	29

Nesting/Use History

Gull-billed terns and skimmers were first recorded here in 1984 and have often attempted to nest in favorable weather conditions. The skimmers were more persistent than the terns. Two other species made one-time appearances on the island, 6 pair of Sandwich terns in 1986 and 18 pair of laughing gulls in 1987.

Discussion and Management Recommendations

The foundation is good. Recommendations:

1. Deposition of good dredge material is desirable.

Island 614–380I

Old Name: (17) NM21

Location

Latitude: 27.2353 **Longitude:** -97.4162 **Area:** .2715 ha **Elevation:** 0.9 m
Length: 33.4 m **Width:** 90.7 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This is a small, east-west oriented island. There is a deep pit on the southwestern corner, and on the northern side is a higher shelf that ends in a point on the eastern side. The shelf is loose sand and shell with scattered halophytic vegetation. There is some sea oxeye on the shelf with more on the eastern point. The island is nearly covered with halophytes. A small, exposed sandy island to the north is considered as part of this site and contains a small amount of halophytic vegetation on its higher points.

Bird Survey 1997 - 2003

614-380I	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG		10			3	4	5
TRHE		5	9		30	25	8
REEG		15	8				7
CAEG							
LAGU	7	26	27	2	21	21	2
GBTE	3	21		1		2	29
CATE							84
ROYT	300	230					380
SATE	2						
FOTE							
BLSK	95	33	22	57	6	6	25

Nesting/Use History

A wide diversity of birds have nested here throughout the surveyed years. The first recorded birds were skimmers in 1977. At times, the number of birds seemed to exceed the carrying capacity. In 1984, 550 pair of Sandwich terns and 460 pair of royal terns were estimated on the sand and shell shelf. Some species have attempted to nest here in almost every year. Although the vegetation is not their preferred type, herons and egrets have nested on the

ground and in the sea oxeye. They first appeared in 1984 and increased in abundance when the terns were not present. Tri-colored herons were more common, but in some years snowy and reddish egrets were found in greater abundance. Great blue herons constructed ground nests of sticks here in 1989, 1994 and 1995.

Discussion and Management Recommendations

This is an ideal island for colonial waterbirds because of its isolation. The foundation is good for the construction of a larger island with trees, bushes, herbs and bare ground suitable for all types of nesters. Recommendations:

1. As the island stands today, it should be managed for terns and skimmers by removing some vegetation from the shelf and thereby expose more bare ground. This might also deter laughing gulls from increasing their occupation.
2. Deposition to enlarge the island would be desirable.
3. Following deposition, manage for all types of nesters by establishing trees, bushes, and bare ground areas.

Island 614–380J

Old Name: (18) NM19A

Location

Latitude: 27.2367 **Longitude:** -97.4161 **Area:** .0323 ha **Elevation:** 0.3 m
Length: 17.6 m **Width:** 25.1 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This is the southernmost of two islands that are joined together during very low tide by a narrow strip of substrate. It is very small with a central core of halophytic vegetation. Most of the area is bare sand.

Bird Survey 1997 - 2003

614-380J	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
GBTE				25		8	
CATE							
BLSK				25	4	17	

Nesting/Use History

Beginning in 1977, Caspian terns, gull-billed terns and black skimmers have attempted to nest at this site. The latter have been the most persistent.

Discussion and Management Recommendations

The island is slowly eroding away and deposition would provide opportunities for waterbird habitat enhancements. Additional material could be used to join this island with the adjacent island forming a larger, long island with higher elevation. This would encourage the establishment of taller, sturdier vegetation favored by herons and egrets. Recommendations:

1. Depositing new material would be desirable and containment devices should be installed.

Island 614–380K

Old Name: (19) NM19

Location

Latitude: 27.2379 **Longitude:** -97.4159 **Area:** .2042 ha **Elevation:** 0.45 m
Length: 84.4 m **Width:** 33.4 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This is the northernmost island of two that are joined at very low tide. It is slightly larger and higher than its neighbor (614–380J). In addition to the halophytes, there is some sea oxeye and grasses on this site. There is a bare projection to the east and to the south.

Bird Survey 1997 – 2003

614-380K	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBTE					6/4P		
CATE						35	Fisherman
ROYT							
SATE						2	
FOTE							
BLSK		100/50P			30/15P	2	

Nesting/Use History

The nesting history is similar to its neighbor 614–380J. First recorded observations were of Caspian terns, gull-billed terns and skimmers in 1977. One pair of Caspian terns tried nesting in 1989. Gull-billed terns and skimmers have nested intermittently since then with the gull-bills missing more years than the skimmers. A single nest of royal terns was found in 1985. The fishermen in 2003 had beached their boat on the island among some unfledged skimmer chicks.

Discussion and Management Recommendations

Deposition at the junction of the two islands could form a long island on which trees and shrubs could be planted. During early formation, limited vegetation would attract terns and

skimmers. Later herons and egrets would be attracted to the vegetation for nesting.

Recommendations:

1. Deposition at this site is desirable and containment devices should be provided to stop erosion.
2. Establish trees and shrubs.

Island 614–364A

Old Name: (32) NM199A

Location

Latitude: 27.327 **Longitude:** -97.3922 **Area:** 1.3598 ha **Elevation:** 0.9 m
Length: 168.8 m **Width:** 115 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, silt and shell

Summary: This island is part of a four-island chain resulting from the construction of a side channel extending from the GIWW toward Padre Island. Two of the islands have since joined due to accretion. The resulting three islands are all low and round with similar vegetation including sea oxeye, which covers much of the ground. False ragweed and croton are also present. Halophytes are not abundant and are replaced by shoregrass. Large areas of hard sand and silt surround each of the three islands.

Bird Survey 1997 - 2003

614-364A	1997	5/21/98	5/19/99	2000	6/1/01	6/1/02	5/27/03
GBTE	not surveyed	8	1	not surveyed			
LETE		4					
BLSK		8	23				

Nesting/Use History

These islands have not been surveyed every year because of the difficulty in traversing the silted channel. The earliest records are from 1973, when four pair of gull-billed terns and one pair of least terns were observed. Other birds attempting to nest here were probably unsuccessful as coyotes from Padre Island often visit these islands. However, for a variety of colonial waterbirds they are good islands for loafing and feeding during the day.

Discussion and Management Recommendations

If the coyotes and other predators were controlled, this group could be developed into good nesting islands. Recommendations:

1. Predator control requires constant monitoring or some type of barrier between Padre Island and this site.

2. Additional dredge material to increase the island's elevation would be desirable.
3. Planting trees would be an improvement.

Island 614–364B

Old Name: (33) NM199B

Location

Latitude: 27.3257 **Longitude:** -97.3905 **Area:** 1.2091 ha **Elevation:** 0.9 m
Length: 142.8 m **Width:** 189.2 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, silt and shell

Summary: This site was formed by the union of two islands in center of the four-island group. Vegetation is dominated by halophytes.

Bird Survey 1997 - 2003

614-364B	1997	5/21/98	5/19/99	2000	6/1/01	6/1/02	5/27/03
GBTE	not surveyed			not surveyed			
LETE							
BLSK							

Nesting/Use History

Since 1973, the same three species (see table above) have attempted to nest here intermittently on the bare ground. Their last attempt was in 1994.

Discussion and Management Recommendations

Management actions for these islands are not recommended because predator access from Padre Island is too easy. If the coyotes and other predators were controlled, this group could be developed into good nesting islands. Recommendations:

1. Predator control requires constant monitoring or some type of barrier between Padre Island and this site.
2. Additional dredge material to increase the island's elevation would be desirable.
3. Planting new trees would be an improvement.

Island 614–364C

Old Name: (34) NM199C

Location

Latitude: 27.3243 **Longitude:** -97.3884 **Area:** 2.0092 ha **Elevation:** 0.9 m
Length: 154.5 m **Width:** 152.2 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, silt and shell

Summary: This island is the closest to Padre Island and is similar in all respects to the other two islands in the chain.

Bird Survey 1997 - 2003

614-364C	1997	5/21/98	5/19/99	2000	6/1/01	6/1/02	5/27/03
GBTE	not surveyed		28/20P	not surveyed			
BLSK	8/4P						

Nesting/Use History

Nineteen gull-billed tern nests were counted on this island in 1979. The next time the island was surveyed was in 1999.

Discussion and Management Recommendations

Recommendations are the same as the other islands in the group, i.e. management actions for this island are not recommended because predator access from Padre Island is too easy. If the coyotes and other predators were controlled, this group could be developed into good nesting islands. Recommendations:

1. Predator control requires constant monitoring or some type of barrier between Padre Island and this site.
2. Additional dredge material to increase the island's elevation would be desirable.
3. Planting trees would be an improvement.

Island 614–363

Old Name: (36) NM178–OM86 Diked

Location

Latitude: 27.3684 **Longitude:** -97.3825 **Area:** 3.2183 ha **Elevation:** 3.6 m
Length: 256.1 m **Width:** 159.5 m

Description

Ownership: Texas General Land Office

Impacts: two cabins

Predators: fire ants

Substrate types: sand and shell

Summary: This large, diked island lies just west of the GIWW, near marker 178. Two houses on the northeastern margin are well constructed and used often. The interior of the dike contains bare areas that are being covered with grasses, false willow, camphorweed and several mesquite trees. The slopes of the dike contain cordgrass and other grasses grading into halophytes at the water’s edge. A long sandbar is being formed at the southeastern end of the island.

Bird Survey 1997 - 2003

614-363	5/21/97	5/19/98	5/20/99	5/15/00	6/1/01	5/28/02	5/28/03
GBHE					2N	1	3
LBHE							
TRHE							
REEG							
BCNH							
LAGU							
GBTE						25	
ROYT						4	
FOTE							
LETE						3	
BLSK							

Nesting/Use History

Observations of the island date to 1981 when several pair of gull-billed terns, least terns and skimmers nested on the bare interior of the island. Forster’s terns joined them in 1984 and laughing gulls in 1985 and 1986. Great blue herons nested in the mesquite in 2001- 2003. Other herons and egret tried to nest here only in 1989.

Discussion and Management Recommendations

The presence of the cabins and the packing of the interior have deterred birds from reusing this island. There is little value in trying to manage this island in its present condition.

Recommendations:

1. Deposition of material into the diked area and elevating the southern sand bar might bring back ground-nesters.

Island 614–362A

Old Name: (20) NM17A

Location

Latitude: 27.2470 **Longitude:** -97.4140 **Area:** .0670 ha **Elevation:** 0.6 m
Length: 33.3 m **Width:** 23.6 m

Description

Ownership: Texas General Land Office

Impacts: one cabin and pier

Predators: fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This small, round island lies within 6 meters of a small cabin on pilings. There is a short pier extending to the west. The upper part of the island contains a good stand of sea oxeye and some patches of saltgrass and pigweed. The margins are covered with typical halophytes. There is a small extension of bare sand and shell on the southeastern end. A permanent duck-hunting seat is found at the center of the eastern side.

Bird Survey 1997 – 2003

614-362A	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG	1	24			2	2	10
TRHE		10	8		10	20	16
REEG	4	5	1	2	1	2	2
CAEG		8					
LAGU	28	14	22	6	4	5	32
GBTE					6	4	11
BLSK						5	4

Nesting/Use History

In spite of the cabin's close proximity, this has been a good island for colonial waterbirds, especially for low-vegetation nesters. Tri-colored herons, snowy egrets and reddish egrets have nested here in almost every year since 1983. Gull-billed terns and skimmers have used the bare sand and shell on the southeastern end in certain years, more so in the early years of observations. Laughing gulls have been absent for only three years since 1980. When the cabin was occupied, the bird census was not taken.

Discussion and Management Recommendations

Very little can be done to manage this island while the cabin is present. Recommendations:

1. If the cabin is removed, there is a good foundation for the construction of a larger island.

Island 614–362B

Old Name: (21) NM17–OM135 Rabbit Island

Location

Latitude: 27.2433 **Longitude:** -97.4147 **Area:** .9794 ha **Elevation:** 0.9 m
Length: 262.4 m **Width:** 60.8 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This long, low island is near the mouth of Baffin Bay and is much broader and slightly higher along the north than the south. There are halophytes at the margins, grading into wolfberry, pigweed, saltgrass and sea oxeye at the crown. This type of cover is distributed throughout the length of the island. Bare areas in the vegetation are near the southern and northern ends. The southern tip is bare sand and shell and is being extended by the accretion of sand and silt. The entire eastern margin is also bare and the water here is very shallow because of the accumulation of sand and silt from Padre Island.

Bird Survey 1997 - 2003

614-362B	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE	6	8	4	20	20	2	1
GREG	10	18	19	2	5N	2	20
SNEG	30	74	65	24	20	3	
LBHE							
TRHE	4	72	46	12	32		16
REEG	28	60	80	108	17	6	4
CAEG		4	3		3		
WFIB							
ROSP	1	68L			70L		
LAGU	21	35	12	238	105	18	95
GBTE	35	32	4	45	35	26	27
CATE	120	84	86	90	12	75	18
ROYT	58	260	280	420	1080	650	470
SATE				10	120		120
FOTE							
BLSK	75	48	15	11	22	5	23

Nesting/Use History

At one time a commercial fisherman inhabited a small shack located near the southern end of the island. He introduced domestic hares to supplement his diet and they proliferated, eventually consuming all the vegetation on the island. Two hundred hares were counted in 1977, along with skimmers and gulls that were attempting to nest. By 1979, all the vegetation was gone and only four hares remained. One hare was present in 1980, and none in 1981. In 1980, 14 tri-colored herons tried to nest in the low sea oxeye and 71 dead gulls were recorded. Since 1983, there has been a steady increase in the number and species of birds nesting and the island is now overcrowded. The increase is due to the immigration of birds from other nearby islands. Skimmers, gull-billed and Forster's terns nest on the southern tip of the island, royal terns use the south central part, and Caspian terns use the northern bare ground areas. Herons and egrets use the ground and sea oxeye on the higher elevations throughout the length of the island. Laughing gulls are found anywhere there is vegetation. In 2001, there was a reduction in the number of heron and egret pairs, but an increase of terns. Numbers have continued to decline in 2002 and 2003. This could be due to the overcrowding in previous years, lack of rain and poor growth of the vegetation.

Discussion and Management Recommendations

This is probably the most important colonial waterbird island in this section of the Laguna Madre and it should be monitored closely. Based on the number of empty shotgun shells, the island is often used by duck hunters in the winter. Recommendations:

1. Native trees and bushes should be established to increase the number of larger nesting birds.
2. Deposition of good material to enlarge the island might alleviate some overcrowding. This should be placed over the silt on the eastern side.
3. Signs should be installed prohibiting human activity from the island all year.

Island 614–362C

Old Name: (22) NM15A–OM133A

Location

Latitude: 27.2504 **Longitude:** -97.4084 **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and raccoons

Substrate types: sand, silt and shell

Summary: This was one of four dredge islands made along a small channel near Padre Island and it lies northeast of the previous island (614–362B). It was round, very low and vegetated with halophytes. The remnants are now completely submerged due to erosion.

Bird Survey 1997 - 2003

614-362C	1997	1998	5/19/99	2000	2001	2002	2003
GBHE	not surveyed	not surveyed	submerged	not surveyed	not surveyed	submerged	submerged
LAGU							
GBTE							
ROYT							
SATE							
LETE							
BLSK							

Nesting/Use History

Beginning in 1976, a variety of birds attempted to nest here. Great blue herons were the first to use the island and later terns and skimmers used the bare ground as the island was further inundated. In 1994, 150 terns nested here, but by 1996 the island was completely submerged.

Discussion and Management Recommendations

Nothing should be done with the islands that were once here. The channel is silted in and the entire area is so shallow that the islands are isolated, except from predators. The lack of water depth prevented surveys of these islands during years of low tides.

Island 614–362D

Old Name: (23) NM15B–OM133B

Location

Latitude: 27.2514 **Longitude:** -97.4055 **Area:** .4409 ha **Elevation:** 0.3 m
Length: 88.2 m **Width:** 67.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and raccoons

Substrate types: sand, silt and shell

Summary: This is the only island in this four-island chain that remains emergent. It is a round island with primarily halophytic vegetation.

Bird Survey 1997 - 2003

614-362D	1997	1998	5/19/99	2000	2001	6/1/02	5/27/03
GBHE	not surveyed	not surveyed	15/7N	not surveyed	not surveyed		34L
GREG							
TRHE							
REEG							
LAGU			26/13P				
GBTE			52/36P				
CATE							30
BLSK			2/1P				2

Nesting/Use History

The occupancy of this island began in 1976 with the presence of 14 great blue herons. Tri-colored herons, reddish egrets, gull-billed terns and laughing gulls were present the next year. Caspian terns arrived in 1994 and skimmers in 1999. In recent years it has been a good island for loafing herons and egrets during the day. The island was not surveyed during many years because of low tides.

Discussion and Management Recommendations

There are no management actions or recommendations other than to this island erode away. This site should be eliminated from the counts. Raccoon tracks were found in 1987. Any nesting here will not be successful because predator access is too easy across the shallow water.

Island 614-362E

Old Name: (24) NM15C-OM133C

Location

Latitude: 27.2511 **Longitude:** -97.4032 **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: raccoons, coyotes and many fire ants

Substrate types: sand shell and silt

Summary: This round island has eroded and now is completely submerged. The vegetation in 1976 was halophytic.

Bird Survey 1997 - 2003

614-362E	1997	1998	5/19/99	2000	2001	6/1/02	5/27/03
GBHE	not surveyed	not surveyed	submerged	not surveyed	not surveyed	submerged	submerged
REEG							
GBTE							
BLSK							

Nesting/Use History

The first observed nesting birds were great blue herons in 1976. Reddish egrets, gull-billed terns and skimmers nested in 1977. In 1978 many dead birds were found - possibly victims of the numerous fire ants present that year. The island is completely submerged today.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614–361A

Old Name: (25) NM221–OM117

Location

Latitude: 27.2859 **Longitude:** -97.4056 **Area:** 2.2629 ha **Elevation:** 1.2 m
Length: 159.5 m **Width:** 54.2 m

Description

Ownership: Texas General Land Office

Impacts: two cabins

Predators: fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This is the southernmost island of seven at the mouth of Baffin Bay and lies just east of the GIWW. This island is isolated and the predators that plague the other islands in the chain are not found here. The island is shaped like a fish, with the tail at the southern end and the body at the northern end. The tail contains pigweed, wolfberry, sea purslane and bare sand and shell. The main body of the island contains dense clusters of sea oxeye, saltgrass, wolfberry, unknown grasses, prickly pear, sandbur and false ragweed. The northernmost cabin is in disrepair. The southern cabin appears to be used less frequently than other cabins in this chain.

Bird Survey 1997 - 2003

614-361A	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
GREG							
SNEG	25				40	4	
TRHE	35				102	25	
REEG	14				11		
CAEG	1						
LAGU	77	8	14	49	49	21	36
GBTE		34			21	3	11
FOTE							
LETE							
BLSK	95	75	49	25	90	6	125

Nesting/Use History

During certain years, this island has hosted a great variety of colonial waterbirds, evidently dependent on the level of human activity associated with the cabins. Each year since 1973, the southern end has been occupied by skimmers and gulls, and intermittently by gull-billed terns. Nesting herons and egrets used the sea oxeye, wolfberry and a single salt cedar during

the period 1994 to 97 and 2001 to 2002. Their appearance is dependent on the cabin occupants and overcrowding of Rabbit Island.

Discussion and Management Recommendations

This is an excellent island for all types of colonial waterbirds: it is isolated and not subject to predators, it contains the proper vegetation and bare areas for nesting, it is near other isolated islands that are heavily used, and the substrate quality is sufficient to maintain the integrity of the island. The only problem is the presence of cabins and the disturbance caused by the occupants. One year, two boys were observed tromping on nests and throwing eggs.

Recommendations:

1. If the cabins remain, the occupants should be educated about their impacts on nesting birds.
2. Enhancements for nesting success should include adding trees on the eastern crown and clearing vegetation on the southern extension.

Island 614–361B

Old Name: (26) NM219–OM113

Location

Latitude: 27.2910 **Longitude:** -97.4050 **Area:** 3.6582 ha **Elevation:** 2.8 m
Length: 168.2 m **Width:** 228.5 m

Description

Ownership: Texas General Land Office

Impacts: six cabins

Predators: raccoons and fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This is the southern most of six islands that are more or less united into a single unit through the deposition of dredged material between them. All six islands were originally round when first formed, and because of their foundation have eroded very little. Vegetation on the eastern side includes several mesquite trees, surrounded by prickly pear. Near the center are some very large Australian pines and three palm trees. The rest of the vegetation is herbaceous and good for nesting colonial waterbirds.

Bird Survey 1997 - 2003

614-361B	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG							
TRHE							
REEG							
LAGU							
GBTE							
LETE							
BLSK							

Nesting/Use History

All six islands have a similar interesting and unusual history. In 1979 or 1980, the occupant of the most northern island introduced domestic hares as a food supplement. By 1982, hundreds were present and they had begun to devastate the vegetation. As a result, birds that nested here moved to the next adjacent island south. The hares subsequently followed the birds to the next island whereby the same cycle was repeated. By 1985, the hares were numerous on the four northernmost islands in the chain. Raccoons then appeared and the population of hares declined. In 1986, a government trapper eliminated the remaining hares, but not the raccoons.

Records for this island date from 1972 when a few herons and egrets and a higher number of terns, skimmers and gulls were recorded. The only other count of herons and egrets was in 1984 when 227 tri-colored herons, snowy egrets and reddish egrets were found. Evidently, the hares and raccoons on the other islands forced them there. Despite the presence of a raccoon, 390 pair of laughing gulls attempted to nest that same year. In May 1995, 391 laughing gulls, 4 tri-colored herons and 2 black skimmers were counted. One week later, all the birds were absent and only raccoon tracks were observed. No birds have used this island for nesting since 1995.

Discussion and Management Recommendations

Recommendations:

1. Unless the cabins and raccoons are removed, there is little need to consider this island for management.

Island 614–361C

Old Name: (27) NM217–OM111

Location

Latitude: 27.5958 **Longitude:** -97.4040 **Area:** 4.132 ha **Elevation:** 2.8 m
Length: 338.6 m **Width:** 200.7 m

Description

Ownership: Texas General Land Office

Impacts: three cabins

Predators: raccoons and fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This island is the next in the group and is joined to its northern neighbor. There are scattered mesquite trees on the eastern side and a wide band of sea oxeye around the margins inland to the halophytes. Bare sand and shell are present at the northern and southern ends. Two cabins are located near the western shore and another larger one is on the crown. The occupants closely mow the vegetation around each cabin.

Bird Survey 1997 - 2003

614-361C	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG							
TRHE							
REEG							
WFIB							
LAGU							
GBTE							
CATE							
ROYT							
LETE							
BLSK							

Nesting/Use History

The history of this island is similar to that of 614–361B above. Low shrub- and ground-nesters used this island from 1972 to 1986, as did bare-ground nesters, gull-billed terns and skimmers. Royal and least terns were present only in 1973. Laughing gulls nested here every year until 1986. Bird use increased in 1982 and 1984 because of the problems on the northern islands in the chain. The island was not surveyed in 1983. Birds did not attempt to nest on the island after 1985 because of raccoons.

Discussion and Management Recommendations

There is no need to develop a management plan until the raccoons are removed. If the raccoons are removed, birds may be lured to return in spite of the cabins. Recommendations:

1. Educate the cabin users.
2. Deposition of material between the islands may attract bare-ground nesters.

Island 614–361D

Old Name: (28) NM215–OM109

Location

Latitude: 27.2988 **Longitude:** -97.4036 **Area:** 4.5408 ha **Elevation:** 1.8 m
Length: 325.2 m **Width:** 164.3 m

Description

Ownership: Texas General Land Office

Impacts: four cabins

Predators: raccoons and fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This island is tear-shaped. The four cabins are very small and constructed of cemented serpulid rocks and are located near the center of the western margin. Immediately behind them is a large clump of mesquite surrounded by a stand of guinea grass. The mesquite has been here since the surveys began, while those on the other islands in the chain are relatively new. A large oleander sits just south and east of the cabins. Dense stands of sea oxeye are found on the northern end of the island. The rest of the vegetation is similar to the others in this chain.

For historical information on this and/or the three more northern islands in this chain see: Barnes (1971), McMurry (1971), Simersky (1971), DePue (1974), Chaney, et al (1978).

Bird Survey 1997 – 2003

614-361D	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
GREG							
SNEG							
TRHE							
REEG							
CAEG							
BCNH			14				
WFIB							
LAGU							
GBTE							
SOTE							
BLSK							

Nesting/Use History

Prior to the arrival of raccoons, this had been the most important bird-nesting island in the chain and in the upper Laguna Madre. Incomplete records date to 1970, when 148 laughing

gulls, 12 skimmers and 8 great blue herons nested here. Later, large numbers of herons and egrets settled onto the island. For example, the records for 1974 indicate the following estimated nesting bird count: 715 tri-colored herons, 268 cattle egrets, 214 snowy egrets, 199 black skimmers, 183 gull-billed terns, 148 great blue herons, 110 reddish egrets, 6 white-faced ibis, 2 great egrets and one sooty tern.

The presence of hares on the more northern islands increased bird usage of the mesquite stand here. For example, in 1982, 550 cattle egrets and 500 snowy egrets were observed. By the next year, hares had immigrated to this island and the bird population began to decline. When the raccoons finally arrived in 1985, the birds departed and none have nested here since. The mesquite trees are still used as resting areas by great blue herons and black-crowned night-herons.

Discussion and Management Recommendations

Historical observations indicate that birds used the island even while the cabins were occupied. This is attributable to cabin user education about nesting bird sensitivity to human activity and their value to the ecosystem. Recommendations:

1. This island could possibly be repopulated if the raccoons and the guinea grass were removed.
2. Ideally the cabins should be abandoned or removed.
3. If these enhancements are implemented, it will be necessary to use decoys to attract birds back to the island.

Island 614–361E

Old Name: (29) NM213–OM107

Location

Latitude: 27.3033 **Longitude:** -97.4026 **Area:** 6.2288 ha **Elevation:** 2.8 m
Length: 469.8 m **Width:** 184.8 m

Description

Ownership: Texas General Land Office

Impacts: one cabin

Predators: raccoons and fire ants

Substrate types: serpulid and coquina reef rocks and cobble, sand and shell

Summary: The original round shape of this island has been elongated by the deposition of dredge material at each end. There are several mesquite trees on the eastern side, near the island’s central crown. Other than the palm tree near the cabin, the vegetation is similar to that of the other islands to which it is connected.

Bird Survey 1997 – 2003

614-361E	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG							
TRHE							
REEG							
BCNH							
WFIB							
LAGU							
GBTE							
LETE							
BLSK							

Nesting/Use History

The earliest reliable count for this island was made in 1972. All species in the chart above nested here regularly at one time, except the black-crowned night-herons, white-faced ibis and least terns. The black-crowned night-herons and white-faced ibis nested here in 1977 and least terns nested in 1985. In 1985, domestic rabbits were introduced to the island, and appear to have affected the nesting birds on this island earlier than the others in the chain. Herons and egrets began to decline with the appearance of the hares in 1981. All birds left the island in 1984 and never returned. The only exception was a pair of least terns that attempted to nest in 1985.

Discussion and Management Recommendations

This island has ideal vegetation for nesting birds and could be good site for enhancement. The single cabin located near the western margin would not pose a problem.

Recommendations:

1. No management actions are recommended until the raccoons are removed.

Island 614–361F

Old Name: (30) NM211–OM105

Location

Latitude: 27.3066 **Longitude:** -97.4014 **Area:** 4.7466 ha **Elevation:** 2.7 m
Length: 319.4 m **Width:** 207.8 m

Description

Ownership: Texas General Land Office

Impacts: one cabin

Predators: raccoons and fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This is a tear-shaped island with the high point located at the north central end. A single cabin is located near the central part of the western shore. The northern part contains some bare areas resulting from the recent deposition of dredge material. There are patches of young mesquite trees near the crown. The rest of the vegetation is similar to that of the other islands in this group.

Bird Survey 1997 - 2003

614-361F	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG							
TRHE							
REEG							
BCNH							
WFIB							
LAGU							
GBTE							
SOTE							
BLSK							

Nesting/Use History

This island and the nesting birds here were one of the first to be studied in the United States (Barnes (1971), McMurry (1971) and Simersky (1971)). In 1970, the nests of 274 laughing gulls, 145 tri-colored herons, 89 snowy egrets, 33 reddish egrets, 17 gull-billed terns, 17 black skimmers, 13 great blue herons and one sooty tern were counted. Black-crowned night-herons and white-faced ibis appeared later. These birds continued to nest here in good numbers until the hares immigrated to this island. By 1983, the hare population had increased and the vegetation had been decimated, forcing the birds to leave. The arrival of raccoons in 1985 and their continued presence has prevented the birds from returning.

Discussion and Management Recommendations

Recommendations:

1. The removal of raccoons must take place before permanent management recommendations can be made.

Island 614–361G

Old Name: (31) NM209–OM103

Location

Latitude: 27.3098 **Longitude:** -97.4009 **Area:** 4.2491 ha **Elevation:** 3.6 m
Length: 261.7 m **Width:** 236.4 m

Description

Ownership: Texas General Land Office

Impacts: three cabins

Predators: raccoons and fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This is the last island in the chain and it retains much of its original shape and is slightly higher than its neighbors. Near the summit are some young mesquite trees and a single large oleander. The crown is bare and there is bare sand and shell at the southern end of the island. The rest of the island is covered with plants conducive to nesting by shrub- and ground-nesters. There are good stands of sea oxeye, cordgrass, camphor daisy, wolfberry, wild indigo and prickly pear. Two of the three cabins are on pilings in the water at the northern end. A house that used to be located near the central margin is gone and in its place is a new, two-story hotel. Century plants and Spanish daggers are found around the largest cabin.

Bird Survey 1997 - 2003

614-361G	5/22/97	5/21/98	5/19/99	5/25/00	6/1/01	6/1/02	5/27/03
GBHE							
SNEG							
TRHE							
REEG							
WFIB							
LAGU							
GBTE							
LETE							
SOTE							
BLSK							

Nesting/Use History

In 1970, the following nesting birds were recorded: 274 laughing gulls 39 snowy egrets, 34 black skimmers, 24 gull-billed terns, 24 tri-colored herons, 23 great blue herons, 11 reddish egrets and one sooty tern. Least terns and white-faced ibis did not appear until 1976. All continued to nest here in good numbers until the domestic hares were released in 1980. The

only birds attempting to nest after 1980 were laughing gulls in 1983 and 1984. Following the introduction of raccoons in 1985, no further nesting was attempted by any species.

Discussion and Management Recommendations

The island, like all this islands in this chain, is a good one for colonial waterbirds, with the exception of the raccoons. Recommendations:

1. The removal of raccoons must precede the development of any long-term management plan.

Island 614–360

Old Name: (35) NM187–OM91

Location

Latitude: 27.2482 **Longitude:** -97.3839 **Area:** .5611 ha **Elevation:** 0.9 m
Length: 310 m **Width:** 31 m

Description

Ownership: Padre Island National Seashore (PAIS)

Impacts: N/A

Predators: fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This long, narrow island is the southernmost nesting island protected by PAIS. There are several small rises formed of coquina reef rocks. The higher parts of the island contain some sea oxeye, pigweed, wolfberry and a single patch of prickly pear. The remainder of the island is covered with halophytes, primarily sea purslane. There is a shallow sand and silt rim that forms approximately 10 meters from the northern and eastern edge of the island. Presently, the island margins and surrounding waters contain a large amount of soft sand and silt making it almost impossible to approach.

Bird Survey 1997 - 2003

614-360	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE	10	14	4	6	4	6	7
GREG							
SNEG		10	12	8	2	2	2
LBHE							
TRHE		2	16	2	9	1	5
REEG		7	22	14	5	2	
CAEG							
ROSP					2N		
LAGU	17	49	84	28	210	56	36
GBTE	97	19	6		7		
CATE	80	75	86	26	4	100	30
ROYT	4				60		
FOTE				4	2		
BLSK	50	50		25	42		

Nesting/Use History

Individual records for this island date to 1981 when 50 pair of skimmers and 17 gull-billed tern nests were counted. The following year, ten pair of Forster's terns joined the skimmers

and gull-billed terns in the sea purslane at the southern end of the island. Also in 1982, 14 pair of tri-colored herons and one pair of reddish egrets used the sea oxeye for nesting platforms. Heron and egret species diversity and abundance began to increase in 1985 and remained through 1989. Between 1989 and 1998, the abundance and species of birds observed were variable, but between 1998 and 2001 they returned in their former levels. Between 1995 and 2003, Caspian terns used the island in good numbers (102 in 1995). The use of low vegetation by the tree-nesters (great blue herons, great egrets and spoon-bills) is unusual.

Discussion and Management Recommendations

The island's value is clear from the number and species of nesting birds that either use, or have used this area. It is isolated, predator-free, and has the right type of vegetation.

Recommendations:

1. The site could be improved with the deposition of good material to enlarge the island. Containment devices should be installed.
2. Trees for tree-nesters should be planted following deposition.

Island 614-348

Old Name: (40)-NB-NM154- Yellow House

Location

Latitude: 27.4167 **Longitude:** -97.3587 **Area:** .315 ha **Elevation:** 0.7 m
Length: 56 m **Width:** 46.6 m

Description

Ownership: Texas General Land Office

Impacts: one cabin

Predators: none

Substrate types: sand and shell

Summary: This small island is located west of GIWW marker 154. A large, bright yellow house on pilings is within 30 meters of the eastern shore. The vegetation is primarily halophytes and pigweed. Shallow water surrounds the island with deeper water toward the King Ranch shoreline. At the edge of the deep water is a group of houseboats.

Bird Survey 1997 - 2003

614-348	5/21/97	5/19/98	5/20/99	5/15/00	6/1/01	5/28/02	5/28/03
GBTE	not surveyed		not surveyed				
CATE						2	
BLSK						3	1
LAGU						2	

Nesting/Use History

In early years there was a house on the island that affected the presence of birds. By 1988, the older house was replaced by the yellow house and gull-billed terns and skimmers were nesting on the island. They nested again in 1996. Caspian terns and laughing gulls appeared in 2002.

Discussion and Management Recommendations

This is a fairly good island except for the house. Recommendations:

1. Deposition of material in the center might attract ground-nesters back to the island.

Island 614–347

Old Name: (37) NM169–OM85

Location

Latitude: 27.3786 **Longitude:** -97.3706 **Area:** .0347 ha **Elevation:** 0.6 m
Length: 33 m **Width:** 17 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This very small, low island is located on the eastern side of the GIWW, near marker 169. A central area of halophytic vegetation is surrounded by bare sand.

Bird Survey 1997 - 2003

614-347	5/23/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE							
SNEG							
LBHE							
TRHE							
REEG							
GBTE	4	42	24	2	41		
CATE							
FOTE		20	6		48		
BLSK	2	9	4	1	14		

Nesting/Use History

This has been a perfect area for the bare-ground nesters since 1983, although none nested in last two years. Herons and egrets have attempted to nest intermittently, but not since 1995. The island is eroding because of heavy wave action from prevailing southeast winds and the absence of good foundation material.

Discussion and Management Recommendations

This could be a very good island with the deposition of serpulid and coquina reef rocks, sand and shell. The island's isolation is ideal for colonial waterbirds. Recommendations:

1. Install signs prohibiting human activity during nesting season.

Island 614-346

Old Name: (39) NM157-OM-75

Location

Latitude: 27.4038 **Longitude:** -97.3570 **Area:** .04 ha **Elevation:** 0.6 m
Length: 34.7 m **Width:** 13 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This small island is located on the eastern side of the GIWW, near buoy 157. It has a central core of primarily halophytes surrounded by bare sand and very little shell.

Bird Survey 1997 - 2003

614-346	1997	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
SNEG	not surveyed						
TRHE							
REEG							
LAGU		1	3				
GBTE		17		1			
CATE					7	7	
ROYT			4				
FOTE							
BLSK		1	1	1	1	1	

Nesting/Use History

Bare-ground nesters were the first birds recorded in 1981, and included 44 Caspian, 8 Forster's and one pair of gull-billed terns along with one pair of skimmers. These species continued to nest here intermittently. Herons and egrets appeared in 1984 and 1985, but rarely thereafter. This island is slowly disappearing.

Discussion and Management Recommendations

The island is in a good location, isolated and predator-free. Recommendations:

1. Adding material to enlarge the island would greatly benefit all species of colonial waterbirds.
2. A good substrate and suitable vegetation is also needed.
3. Install signs prohibiting human activity during nesting season.

Island 614–345

Old Name: (38) NM163–OM81

Description

Latitude: 27.3919 **Longitude:** N-97.3561 **Area:** 1.4172 ha **Elevation:** 1.2 m
Length: 138 m **Width:** 132 m

Location

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: fire ants

Substrate types: serpulid and coquina reef rocks, sand, shell and silt.

Summary: A high ridge encircles the northern end of the island sloping gently to the southern end and more sharply to the northern end. The central portion of the southern bare area often contains water and blue green algae. The margins of the island contain typical halophytes which grade into wolfberry and a narrow band of sea oxeye that is more prominent on the northern end. There is a large patch of sunflower on the western side of the summit. The summit is covered with an unknown plant and a patch of cowpen daisy. There is buffle grass and seven clumps of salt cedar, each with nesting platforms. There are four small mesquite, two granjeno, several new salt cedars trees and two small rattlepods on the western slope of the island. The slope contains pigweed, cowpen daisy and bermudagrass. Approximately 50 percent of the island is vegetated.

For information on the construction, spoil deposition and nesting see Chaney et al (1978).

Bird Survey 1997 - 2003

614-345	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
AWPE	390	470	380	470	450	440	580
GBHE	4	15	4	6	10	4	2
GREG	2	1					
SNEG							
LBHE							
TRHE	1	3					
REEG				1			
CAEG							
BCNH		1					
WFIB							
ROSP							
LAGU	39	77	7	11		3	
GBTE	85	5		3			8
CATE				1			

614-345	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
ROYT							
SATE							
COTE							
FOTE	38						
SOTE							
BLSK	49	31	8	40		1	28

Nesting/Use History

This island has become known as White Pelican Island since the pelicans moved here from the South Bird Island area in 1982. It has been one of the more productive islands as evidenced by the 20 different species of colonial waterbirds that have nested here.

A hard freeze in 1987 killed most of the salt cedar and reduced the quantity and quality of the remaining vegetation. Following the freeze, heron and egret abundance declined until 1994, when they were almost gone. During this same period, pelicans increased their activity driving the other birds away. A few great blue herons continue to build platforms in the salt cedars. Terns and black skimmers used the sand flats and sparsely vegetated ground on the southern end of the island. In 1988 for example, 920 royal, 360 Sandwich and 18 Caspian terns nested. Numbers began to decline and by 1992, all but the skimmers and gull-billed terns had left the island. The sandy areas that were favored by terns silted to form a hard substrate. Only the skimmers and gull-billed terns were left to use the sandy extensions on the southern end. In 2001, only pelicans and great blue herons nested.

Discussion and Management Recommendations

Recommendations:

1. Continue to manage the island for white pelicans.
2. During the fall and winter, vegetation on the crown should be removed or reduced, especially the grasses.
3. A few scattered mesquite trees could be planted to provide shade and serve as platforms for any returning herons and egrets.
4. If good dredge material is available, it can be deposited on the southern slope, where it meets the sand flat, to encourage the sand-nesters.
5. The PAIS needs to maintain large signs prohibiting human activity within 200 meters of this island.
6. Eliminate fire ant colonies on the crown and in the remains of the salt cedars.

Island 614–344

Old Name: (41) NM152–OM72

Location

Latitude: 27.4222 **Longitude:** -97.3561 **Area:** 1.5888 ha **Elevation:** 1.2 m
Length: 135.5 m **Width:** 141.5 m

Description

Ownership: Texas General Land Office

Impacts: one cabin

Predators: none

Substrate types: sand and shell

Summary: This island is located west of the GIWW, near marker 152. It was a small island that was enlarged with dredge material on the northwestern side. The vegetation is low and dense except at the crown near the northeastern corner. There is a ring of bare ground around the southern margins of the recent deposition. The well-constructed cabin is among older vegetation on the eastern margin of the original island. The vegetation is typical of younger islands - many halophytes, wolfberry, sea lavender, saltgrass, false ragweed and pigweed.

Bird Survey 1996 – 2003

614-344	5/23/96	5/21/97	5/19/98	5/20/99	6/1/01	5/28/02	5/28/03
LAGU	18	28	12	119	21		
GBTE		11	18	9	15	13	25
CATE			22		6	3	4
FOTE							
LETE							
SOTE							
BLSK	21	19	34	65	32	34	20

Nesting/Use History

Originally there was a commercial fisherman's shack on the eastern margin. In 1978, the shack was abandoned, but two domestic cats left behind kept the island free of nesting birds. The cats were removed the next year at the close of the nesting season. In 1980 the terns and skimmers returned to the island in fair numbers. Additional dredge material was deposited in 1983 and the next year large numbers of each species in the table (above) nested. In the mid-1980s, a new owner purchased the permit and built a cabin and long pier extending to the north. Occupants walk through the nesting area to reach the cabin. Fledging success was probably held to a minimum. The birds returned in 1995 and nested on bare areas to the south, away from the cabin and the walking path and the birds continue to use this area. The present cabin users indicated that they stay away from the birds when nesting.

Discussion and Management Recommendations

This could be one of the better islands in this part of the Laguna Madre. Recommendations:

1. The cabin should be eliminated and the owners should be prohibited from selling or transferring the permit.
2. Establish trees and manage the vegetation.
3. Warning signs should be erected at the southern margin of the island.

Island 614–343

Old Name: (42) NM141–OM69

Location

Latitude: 27.4335 **Longitude:** -97.3422 **Area:** 1.0172 ha **Elevation:** 0.7 m
Length: 291.5 m **Width:** 42.3 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This long island lies east of marker 141. The island has a surrounding berm and a lower area in the center. Four high points on the eastern side grade to the berm and to the low, middle ground. On the southern end are two brackish water pits and an accreting sandbar on the tip. The vegetation consists of a lot of halophytes in the low area - mostly sea purslane, which covers 30 percent of the island. There is saltgrass, wolfberry, false ragweed and a small amount of scattered sea oxeye on the higher ground.

Bird Survey 1997 – 2003

614-343	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE							
SNEG							
LBHE							
TRHE		12	10	7	1		
REEG	1	2	9	2			
WFIB							
LAGU	140	189	126	245	38	3	2
GBTE	84	21	20		21	6	
CATE	16						
ROYT							
SATE							
FOTE	95		1	4		36	26
LETE							3
BLSK	20	12	28	2	16	10	1

Nesting/Use History

Recorded use of this island dates to 1977 when nests for 25 gull-billed terns and 23 skimmers were recorded. The number and species of birds increased in 1981 with the addition of the other terns and laughing gulls. Caspian terns were a fixture on this island from 1983 to 1997.

More have consistently nested on this island than on any other in the upper Laguna Madre. Herons, egrets and white-faced ibis appeared in 1983 and 1984. Since 1995 these shrub-nesters have decreased, probably due to the increase of laughing gulls, which numbered over 100 pair each year. The lack of tri-colored herons and reddish egrets in 2001 could be due to the lack of rain and the death of the sea oxeye on the higher areas.

Discussion and Management Recommendations

This has been a good island for a variety of colonial waterbirds because of its isolation and protective signs. Recommendations:

1. Modify signs to prohibit human activity within 200 meters of the island year-around.
2. Deposition of good material would enlarge and enhance the site.
3. Establish mesquites and granjeno trees on the higher areas to attract tree-nesters.
4. Fire ants on all the islands should be eliminated.

Island 614–342A**Old Name:** (43) NM131–OM65**Location**

Latitude: 27.4522 **Longitude:** -97.3321 **Area:** .9295 ha **Elevation:** 0.9 m
Length: 160.7 m **Width:** 69 m

Description**Ownership:** Padre Island National Seashore**Impacts:** N/A**Predators:** fire ants**Substrate types:** serpulid and coquina reef rock and cobble, sand and shell

Summary: This small island is located east of the GIWW, near marker 131. Sand is accreting on the eastern margin and on each end of the vegetated portion. Sea purslane covers 90 percent of the island. There is pigweed around the margin and some wolfberry and sea oxeye on the higher areas.

Bird Survey 1997 – 2003

614-342A	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
SNEG							
TRHE		1					
REEG							
WFIB							
LAGU	14/10P	120/84P	45/32P	4/3P	6/4P		2
GBTE		16/11P				7	8
CATE	15		70	6	2		1
ROYT	22	4/2P	200	460			
SATE			10	180			
FOTE							
BLSK		38/19P			4/2P	1	2

Nesting/Use History

The records begin in 1977 with 62 nests of Forster's terns, 30 pair of skimmers and 14 nests of gull-billed terns. Six pair of laughing gulls in 1979 and 12 pair of Caspian terns in 1980 joined these bare-ground nesters. The number of Caspian tern pairs increased to a maximum of 100, which then alternated or divided nesting between this island and the previous one (614–343). A few royal and Sandwich terns nested here in later years. The first shrub nesters were two pair of tri-colored herons in 1983. They appeared intermittently in succeeding years, usually as two or three pair. A pair of white-faced ibis was present only in 1984 and a

pair of snowy egrets nested twice in 1989 and again in 1991. A reddish egret pair was present in 1990 and again in 1995.

Discussion and Management Recommendations

Recommendations:

1. Maintain this island for nesting terns and skimmers.
2. The removal of some sea purslane to expose more bare sand and shell would be desirable.
3. Eliminate fire ants.
4. Erect signs to prohibit human activity within 100 meters of the shoreline year-around.

Island 614–342B

Old Name: (44) NM127–OM63

Location

Latitude: 27.4594 **Longitude:** -97.3283 **Area:** .3741 ha **Elevation:** 1.0 m
Length: 75.6 m **Width:** 65.8 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: fire ants

Substrate types: serpulid and coquina reef rock and cobble, sand and shell

Summary: This small island is located east of the GIWW, near marker 127. Sand is accreting on the eastern margin and on the long spit at the southern end. Several large concrete blocks form the high point on the north end. Vegetation here consists of wolfberry and sea oxeye. The rest of the island is covered with sea purslane, pigweed and glasswort. There are three deposit pits on the island.

Formation and depositional history for this island can be found in Chaney (1978).

Bird Survey 1997 – 2003

614-3343B	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE							
TRHE		1					
REEG							
LAGU		70	11	6	7		9
GBTE	4	4		3	6	10	3
CATE						2	
ROYT				2			
FOTE					26	6	
LETE							
SOTE	2						
BLSK		4	22	12	20		7

Nesting/Use History

In 1976, 23 scrapes of skimmers were observed on the sand spit, and a single great blue heron nest was found in the sea oxeye on the north end of the island. The single nest was used the following year and again in 1988 and 1990. A single pair of reddish egrets nested in 1985. Single pairs of tri-colored herons used the island intermittently from 1988 to 1998. Small numbers of gull-billed terns nested almost every year. Skimmers were present in larger numbers every year. Thirty Forster's terns were counted in the sparse vegetation at the

southern end in 1989 and 26 were found there again in 2001. Small numbers of Caspian terns were listed for several years beginning in 1980. Royal and least terns nested here only twice and in small numbers. Unusual nesters included sooty terns, which were present as a single pair in 1984 and as two pair in 1997.

Discussion and Management Recommendations

This island should be treated the same as the preceding one (614-342A). Recommendations:

1. Manage and maintain this island for nesting terns and skimmers.
2. Remove some halophytes to expose more shell and sand substrate. Accreting sand on the southern spit should also help.
3. Eliminate fire ants.
4. Erect signs to prohibit human activity within 200 meters of the shoreline year-around. Human tracks have been seen during censuses on several years.

Island 614–341A

Old Name: (45) NM117A–OM57A

Location

Latitude: 27.4794 **Longitude:** -97.318278 **Area:** 7.6259 ha **Elevation:** 3.0 m
Length: 366 m **Width:** 296 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes, badgers and fire ants

Substrate types: sand and shell

Summary: This island is located just north of the Bird Island Basin Channel and is one of four islands, more or less joined together by deposition. Several deposits have been made on this large island.

Vegetation on the island suffered as a result of drought and bare areas are found on the northern and northeastern parts. The rest of the island is densely vegetated with sea oxeye, prickly pear, sea lavender, pigweed, cordgrass, false ragweed, saltgrass, lantana, camphor daisy, Indian blanket and scarlet pea. Around the island margins are wolfberry and typical halophytes. A line of partially dead salt cedars extends across the center of the island and another group is present on the southwestern corner. Near the latter group is a large stand of mesquite. A large mesquite and several granjeno trees are growing on the northwestern corner. It is these trees which host nesting great blue herons, black-crowned night-herons, great egrets, cattle egrets, roseate spoonbills and some snowy egrets. The other large wading birds are nesting in, or on the sea oxeye and prickly pear.

Formation and depositional history of this and the following three islands can be found in Chaney et al (1978).

Bird Survey 1997 – 2003

614-341A	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE	6	8	6	12	16/8N	8	16
GREG	2	12	14	12	5	4	27
SNEG	150	200	50	51	26	36	61
LBHE	8	30	30	6	16	1	11
TRHE	150	174	108	40	48	27	123
REEG	75	82	28	31	8	22	63
CAEG	102	70	50	34		3	20
BCNH	2	7	6	2	3	4	14
ROSP	6	6	7	12	12	8	20
WHIB	4	10	8	9			7

614-341A	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
WFIB	320	22	4	2			10
LAGU	805	1260	1225	420	357	550	2250
GBTE							
BLSK							

Nesting/Use History

Records since 1973 indicate a great variety of birds have heavily occupied this island. During several different years, as many as 320 white-faced ibis, 200 snowy egrets and tri-colored herons and 82 reddish egrets have nested in the sea oxeye and prickly pear. The 320 white-faced ibis and 82 reddish egrets observed were more than any other island in the upper Laguna Madre. White ibis made their first appearance in the area on this island in 1977 when three nests were found. Their numbers have increased in recent years. The gull-billed terns and skimmers were counted once on the bare sand at the northern end of the island in 1982. Laughing gulls have always been present in high numbers, usually more than 1,000 pair. Overall, the species count and abundance has decreased in recent years. Most of those counted were either in the trees or nesting in a dense stand of sea oxeye and prickly pear on the south central part of the island. The density of the prickly pear prevents the approach of any predator.

Discussion and Management Recommendations

This island is one of the more important ones in the upper Laguna Madre. Badger and coyote tracks have been observed during bird surveys of this island. Recommendations:

1. Manage the island for herons, egrets, spoonbills and ibises.
2. Monitor for predators before and during the nesting season each year. Tracks can be easily seen on the bare, moist sand between this and the adjacent northern island.
3. Predators should be captured and removed.
4. Establish new trees and bushes and selectively remove of some of the prickly pear.
5. Any action to discourage nesting laughing gulls is desirable.
6. Replace present signs with postings that prohibit human activity within 100 meters of the shoreline year-round.
7. Disturbance during census counts should be kept to a minimum.

Island 614–341B

Old Name: (46) NM115–OM57

Location

Latitude: 27.482538 **Longitude:** -97.316464 **Area:** 8.2515 ha **Elevation:** 6.7 m
Length: 368 m **Width:** 269 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: shell and sand

Summary: This island is located near GIWW marker 101 and is the middle of three islands joined or almost joined by deposits between them. There are some bare areas at the northern edge of the island and on elevated deposit sites at the northeastern and southeastern corners. Between these two high points there is a low algal flat connected to the northern bare area by a narrow channel. Between this and the southern island there is a large bare area with scattered halophytes. The vegetation is very similar to that of the preceding island (614–341A). The ridgeline of the original island contains a dense stand of mesquite, scattered oleanders and false willow. At the northeastern end is a large clump of salt cedar with extensive growths of prickly pear that grade into sea oxeye, shoregrass, wolfberry and various halophytes.

Bird Survey 1997 – 2003

614-341B	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE	6	12	5	6	8	6	10
GREG	10	25	28	8	13	20	20
SNEG	28	45	16		40	24	
LBHE			5	2		2	
TRHE	12	28	32		14	4	24
REEG	54	35	20		10	8	5
CAEG	25	12	4		10	4	
BCNH	10	10	10	8	1		3
WHIB	20	1	1				
WFIB	130	14	1				
ROSP	15	22	30	30	22	21	22
LAGU	595	770	980	560	420	560	567
GBTE		1	13				
CATE							
ROYT	830	480	700				
SATE	6	28	86				

614-341B	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
SOTE		1					
BLSK							

Nesting/Use History

The nesting history of this island is similar to the preceding one (614–341A), i.e. it had the same number of species but not as many individuals. This island had a greater number of black-crowned night-herons, a single pair of sooty terns and many royal and Sandwich terns. The royal and Sandwich terns appeared between the two islands when dredge material was deposited there. In 1973, 2,500 royal and 2,000 Sandwich terns were counted on the bare ground.

In 1978, PAIS personnel counted 7,000 Sandwich terns. This count must be an erroneous and probably resulted from adding a zero to the more likely observation of 700 birds. This explanation is further supported by the fact that there have never been 7,000 Sandwich terns recorded for the entire upper Laguna Madre.

In later years, terns moved to the bare areas on the summits of the two eastern high points. Their numbers and occurrence vacillated in later years, probably due to the presence of predators. Great blue herons, black-crowned night-herons, great egrets, some snowy and cattle egrets nested in the trees, others on the sea oxeye, prickly pear and on the ground. Laughing gulls nested on the island in large numbers during every year since the beginning of individual records in 1973. The loss of terns and skimmers and the reduction in numbers of the other birds during the last two years is probably due to predation.

Discussion and Management Recommendations

Management practices for this island are almost identical to the preceding one (614–341A). Recommendations:

1. Manage this island for bare-ground nesters including terns and skimmers.
2. Closely monitor the island for predators before and during the nesting season.
3. The encroachment of plants onto the bare ground should be checked with Roundup or by mechanical means. If the former is used, it should be done shortly before the nesting period – if done too early, re-growth will occur.
4. The oleanders and false willow should be replaced with mesquite trees and native shrubs. The extent of the prickly pear should be reduced.
5. Erect nesting platforms.

Island 614–341C

Old Name: NM (47) 113A– OM55A

Location

Latitude: 27.486481 **Longitude:** -97.314559 **Area:** 6.3061 ha **Elevation:** 3.5 m
Length: 318.2 m **Width:** 209.3 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes

Substrate types: shell and sand

Summary: Deposition on this island has not been as frequent as the previous two and as a result, it has retained its round shape. The eastern and western sides slope up to a narrow ridge and central summit. The summit contains dense growths of prickly pear with scattered living and dead lantana. There is scattered false ragweed and wild indigo that grade on the slopes into more prickly pear, sea oxeye, saltgrass, shoregrass and wolfberry. There are thick stands of halophytes at the shore. The lower southern end has ten young salt cedars and one sprawling mesquite tree nearer the center. Fifteen meters to the north is a clump of four large mesquite trees, Indian blanket and primrose. The north end has one isolated salt cedar. There is a small amount of bare ground on the northern and southern margins.

Bird Survey 1997 – 2003

614-341C	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
AWPE							
GBHE	7	3	4	8	7	1	
GREG	22	16	16	4	19	1	
SNEG	12	1	1		10		
LBHE							
TRHE	6		36		25		
REEG	30	1	6		12		
CAEG	14				2		
BCNH	24	8	7	4	10		
WHIB	5						
WFIB	50		5				
ROSP	15	12	12	20	12	9	
LAGU	840	630	525	175	280	140	
GBTE							
SOTE							
BLSK							

Nesting/Use History

The same species that nested on island 614–341A have also nested here with two exceptions. In 1981, 98 white pelicans nested here and 25 returned the next year. A pair of sooty terns nested in 1973. Nesting by other species is similar to other nearby islands; great blue herons, black-crowned night-herons, roseate spoonbills, great, cattle and some snowy egrets in the trees; tri-colored herons, reddish and snowy egrets, ibises and laughing gulls on the sea oxeeye, prickly pear or the ground. Black-crowned night-herons nested here in greater numbers than on the other two islands. Coyote tracks were found on this island in 2000, explaining the lower number of nesters that year. Evidently, the island was free of predators in 2001, but they had returned the following 2 years. Raccoon tracks were found in 2003.

Discussion and Management Recommendations

This is another good island in this area of the Laguna Madre. Recommendations:

1. Manage this island for herons and egrets.
2. Predators must be controlled by monitoring closely prior to, and during the nesting season.
3. If tracks are found, traps should be set to remove the predator from these islands.
4. Plant more trees and shrubs. Remove most of the prickly pear and allow it to be replaced by woody, herbaceous plants.

Island 614–341D

Old Name: (48) NM 113–OM55

Location

Latitude: 27.489458 **Longitude:** -97.313108 **Area:** 5.6970 ha **Elevation:** 2.0 m
Length: 286 m **Width:** 201.7 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: shell, sand and silt

Summary: This island is located east of marker 113 and is more separated from the three previous islands and not as high. There is a small bare area on the northern margin and a large one on the southern end that is often inundated during high tides. The center of the island contains two large stands of trees that blend together; the western one is a very large mesquite and the eastern one is a cluster of many popinac or leadball trees that are re-growing after the 1987 freeze. The trees are surrounded by a very dense growth of prickly pear with scattered sea oxeye. The prickly pear and sea oxeye patches extend to the north, almost to the margin of the northern point. There is an isolated leadball tree near the southern margin of the vegetation. False ragweed and halophytes are growing around the margins of the prickly pear and sea oxeye.

This island was formed between April 1947 and March of 1948. For more detail about the island's early development see Chaney et al (1978).

Bird Survey 1997 – 2003

614-341D	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
AMWP							
GBHE	22	8	10	12	7	2	4
GREG	42	35	42	18	25	7	58
SNEG	44	6	6	2	20		2
LBHE	12	8	3		2		
TRHE	34	24	40		70		
REEG	52	12	9		10	2	
CAEG	75		2		2		
BCNH	6	2	14	12	2	3	3
WHIB			3				
WFIB	66	1	2				
ROSP	33	26	16	20	12	15	11
LAGU	840	840	980	560	245	91	

614-341D	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBTE							
BLSK							

Nesting/Use History

Early PAIS records (1975) indicate that nesters were using only the trees and the bare ground. Three hundred sixty-one pair of cattle egrets, seven great blue herons and two snowy egrets were nesting in the trees, and two pair of gull-billed terns and skimmers were nesting on the bare ground. Because of a tick infestation on white pelicans on South Bird Island or the presence of coyotes, white pelicans moved to this island to nest on the bare ground beneath the leadball trees in 1975. Some continued to nest here in later years – 35 in 1976, 120 in 1977, none in 1978 (PAIS), 24 in 1979, 144 in 1980 and 42 in 1990. Most birds moved to island 614–345 by 1991. Cattle egrets were the first tree-nesters to fill the trees in the early years with over 400 pair in some years. In 1978, PAIS recorded 1,700 pair of cattle egrets. This number is questionable since only 150 were present the preceding year and 160 the following year. Their numbers have drastically dropped in the last five years. Black-crowned night-herons followed the same pattern; large numbers in the early years followed by a decrease due in part to the denuding of leadball trees following the freeze of 1987. Reddish egrets and tri-colored herons have nested in good numbers throughout the years using the prickly pear and sea oxeye. Nine pair of little blue herons appeared on this island in 1983 and this species continues to nest, usually in the trees. The first gulls nested in 1977 when there were 49 pair present. They have increased in later years to almost 1,000 pair in some years. The reduction in species numbers in 2000 was due to the presence of coyotes on the island as evidenced by tracks. No tracks were found in 2001.

Discussion and Management Recommendations

Recommendations:

1. Manage this island for herons, egrets, ibises and spoonbills.
2. Most importantly, the island should be systematically monitored year-around for predators, especially during the early nesting season.
3. If predators are found, they should be removed.
4. Plant mesquite trees to replace the leadball trees if they are again frozen. Selectively remove some prickly pear.
5. Dredged material should not be placed on this island.
6. Install signs prohibiting human activity from January through October.

Island 641–340

Old Name: (49) South Bird Isl.

Location

Latitude: 27.492685 **Longitude:** -97.305742 **Area:** 10.4846 ha **Elevation:** 1.2 m
Length: 869.5 m **Width:** 188 m

Description

Ownership: N/A

Impacts: N/A

Predators: coyotes, raccoons, fire ants and grackles

Substrate types: sand, shell and silt

Summary: This long, narrow, natural island is located just northeast of the previous one (614–341D). The island margins, especially on the western side, are higher than the central part. On the northwestern margin there is a large patch of prickly pear and several very large Spanish daggers containing several nesting platforms. Other groups of prickly pear are scattered along the western margin among some thick stands of sea oxeye. Sea oxeye is also distributed throughout the higher parts of the island. The low interior of the island contains wet areas that cover one third of the island. These wet areas contain blooms of bacteria and algae. Around the wet areas and covering much of the interior are various halophytes, mostly sea purslane. The southern tip of the island contains a small amount of bare sand and shell.

Bird Survey 1997 – 2003

641-340	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
AMWP							
GBHE	2	2	1	1	2	1	8
GREG					1	2	
SNEG					1	6	
LBHE	1			1		1	
TRHE	1			5	10	24	10
REEG	10			2	2	21	5
CAEG							
BCNH	2						
WHIB							
WFIB	4						
ROSP							
LAGU	2800	3990	3640	2800	2240	4550	7380
GBTE	21						
ROYT							
SATE							
FOTE	32				60	30	25

641-340	5/21/97	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
BLSK							

Nesting/Use History

Observations in the 1800s recorded very high numbers of pelicans and other wading birds on this island. Evidently, the island has subsided since it could not support the reported numbers at its present size. There is no doubt that it has been an attractive island to a great variety and number of birds.

More recent observations from 1973 counted 1,050 laughing gulls, 225 white pelicans, 110 reddish egrets, 100 great blue herons, 87 snowy egrets, 32 tri-colored herons, 12 great egrets and 7 white-faced ibis. Later counts reflect the addition of new species and fluctuations in the number of individuals. In 1974, PAIS personnel counted 500 snowy and 250 cattle egrets. In 1976, 4,200 laughing gulls, 550 royal terns, 420 Sandwich terns, 250 white-faced ibis and 95 roseate spoonbills joined the herons and egrets. In the following year, an additional 54 pair of white ibis appeared. Since 1981, the total number and species count has declined, except for laughing gulls. White pelicans and spoonbills left the island and never returned. This could be due to predators as evidenced by the removal of a coyote from the surrounding water in 1981. In the previous year, only 52 pelicans of the usual 350 were counted. Twelve, apparently abandoned chicks, were found dead. Today, there are few great blue herons and great egrets nesting on the Spanish daggers; other herons and egrets use the prickly pear and sea oxeye, and the terns and skimmers use the sandy southern point.

Discussion and Management Recommendations

Recommendations:

1. This island (and the four to the south) must be monitored for predators frequently, especially early in the nesting season.
2. Deposition of good material in the center of this island is desirable and could bring back its historical productivity.
3. Plant trees and shrubs on the new material. If this cannot be done, leave the island to the laughing gulls. This may keep some from nesting on the nearby islands where other birds nest in large numbers.

Island 614–306

Old Name: (50) North Bird Island

Location

Latitude: 27.520494 **Longitude:** -97.290352 **Area:** 7.1087 ha **Elevation:** 0.9 m
Length: 682.2 m **Width:** 143.7 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: N/A

Substrate types: sand, shell and silt

Summary: This natural island is located north of the previous one (641–340) and east of the GIWW dredge material islands. The shape is similar to the previous one, but reversed with the narrow end on the north and the broad end to the south. The center of the island is lower than the outer margins and contains several areas of dry sand and little vegetation. Most of the vegetation is low and herbaceous, also characteristic of previous islands.

Bird Survey 1997 – 2003

614-306	6/19/97	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBTE	not surveyed						
ROYT							
FOTE							
BLSK							

Nesting/Use History

According to the earliest observations (1973), birds did not nest here until 1993 when 26 Forster’s terns, 10 gull-billed terns, 3 royal terns and 4 pair of black skimmers nested on the sandy, southern tip of the island. The Forster’s and gull-billed terns returned the following year.

Discussion and Management Recommendations

The reason why birds do not nest on this island is unknown. It could be the ease of predator access from Padre Island, or the absence of proper vegetation for shrub- and tree-nesters. The proximity of South Bird Island and its historically high bird counts also detracts from this island as a nesting site. Recommendations:

1. Predator access must be controlled.
2. Deposition of material to raise the elevation is desirable.

3. Plant trees and shrubs following deposition.
4. During the early years of deposition, the bare ground would be ideal for terns and skimmers.

Island 614–305A

Old Name: (51) NM103–OM51

Location

Latitude: 27.507277 **Longitude:** -97.302741 **Area:** 6.0017 ha **Elevation:** 4.0 m
Length: 313.8 m **Width:** 260.6 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: large shell, sand and silt

Summary: This large, round island was formed in 1947 and/or 1948 from deposits at each end. A large dike was constructed on the eastern side around 1970 and was subsequently filled with dredge material. There are oleander, false willow and salt cedar trees on the eastern slopes of the dike and a palm tree at the northern end. There is a pond surrounded by cattails on the southwestern corner. Other vegetation found on the slope including cordgrass, false ragweed, necklace pod, sea oxeye and various other grasses. The southern part of the dike’s interior contains a large area of rough, almost bare ground. Numerous false willow trees are scattered and grade into a pond at the northern end where a variety of herbaceous plants are found.

For more details about the island’s history, see Chaney et al (1978).

Bird Survey 1997 – 2003

614-305A	1997	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE	not surveyed						1
CATE							

Nesting/Use History

In 1977, shortly after the deposits in the dike ceased, a pair of Caspian terns successfully nested on the bare ground. Least terns and skimmers attempted to nest the same year, but were not successful. Various large birds have used the trees on the island as loafing sites.

Discussion and Management Recommendations

This island and the chain of northern neighbors are not good candidates for colonial waterbird management. Coyote tracks have been observed every year since 1988 and raccoon tracks were discovered in 2001. Several predators were trapped and removed in past years, but it did not prevent their return. Keeping these islands predator-free would require too

much time, effort and money. These islands could be good for neotropical migrants, if more trees and shrubs were planted. The presence of the fresh water also helps.

Island 614–305B

Old Name: (52) NM101A–OM49A

Location

Latitude: 27.510538 **Longitude:** -97.301289 **Area:** 7.3491 ha **Elevation:** 2.4 m
Length: 303 m **Width:** 302 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: The formation and nesting trends of this island are very similar to others in this group. The eastern half has been formed into a diked spoil area. There are salt cedar and oleander surrounded by century plant and prickly pear on the non-diked western portion. The rest of the vegetation is similar to that on the other islands in this group. The interior of the dike contains areas of rough, bare ground dotted with false willow trees and herbaceous plants.

Bird Survey 1997 – 2003

614-305B	1997	5/19/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE	not surveyed	1	1				
BCNH							
GBTE							
CATE							
FOTE							
LETE							
BLSK							

Nesting/Use History

In 1973, 45 pair of least terns and 4 pair of gull-billed terns and black skimmers nested on the new dredge material in the diked area. In later years, the terns returned once to nest and the skimmers twice. Caspian and Forster’s terns tried nesting during two seasons, the former in 1977 and the latter in 1985. The black-crowned night-herons and great blue herons reported are probably loafers resting in the trees.

Discussion and Management Recommendations

The island would be good for PAIS to develop into a public recreation island. There is a deep-water channel that ends at the shore on the southwestern corner of the island and

opportunities for camping, picnicking, bird watching, etc. would be available.

Recommendations:

1. The control of the predators would be a massive undertaking and not worth the effort. However, trapping and removing predators each winter would help reduce their numbers.
2. Remove the oleanders and replace with mesquite trees and shrubs. This could help the migrants.

Island 614–305C

Old Name: (53) NM101–OM49

Location

Latitude: 27.513113 **Longitude:** -97.299934 **Area:** 6.4103 ha **Elevation:** 2.8 m
Length: 308.1 m **Width:** 248.3 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: This large, mostly barren island has a large grove of leadball trees just west of the central crown. Prickly pear surrounds these trees and is also found in scattered clumps on the higher areas. There is a salt cedar on the northwestern corner and scattered leadball trees on the eastern side. The lower areas are covered with the salt tolerant species that are characteristic of the other islands. This island and the previous one (614–305B) are joined together by a broad band of bare sand with some scattered halophytes.

Bird Survey 1997 – 2003

614-305C	1997	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/29/03
GBTE	not surveyed						
LETE							
BLSK							

Nesting/Use History

Nesting history dates to the early days of the island’s formation when there was little vegetation. The earliest observations in 1973 and 1977, show gull-billed terns, least terns and skimmers nesting in small numbers, but never in later years. Coyote tracks were present in 1980 and in later surveys, but could have been overlooked on earlier surveys.

Discussion and Management Recommendations

Management recommendations for colonial waterbirds are similar for the entire group of islands. Recommendations:

1. Control the predators and closely monitor.
2. Plant native trees and shrubs.

Island 614–305D

Old Name: (54) NM97A–OM47A

Location

Latitude: 27.516375 **Longitude:** -97.298772 **Area:** 3.1598 ha **Elevation:** 1.2 m
Length: 268.8 m **Width:** 151.8 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes, raccoons and fire ants

Substrate types: sand, shell and silt

Summary: This island is separate from the others in the group and was formed in 1947 and 1948. Presently, this low island contains some salt cedar on the northern and western slopes of the central crown. The rest of the vegetation is similar to that of the other islands in this group.

For a more detailed history of this and the following island see Mendoza (1974), Ortiz (1974) and Chaney et al (1978).

Bird Survey 1997 – 2003

614-305D	1997	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBTE	not surveyed						
LETE							
BLSK							

Nesting/Use History

The island was only used for nesting when there were large amounts of bare ground and little vegetation. Gull-billed terns, least terns and skimmers were observed in 1973. Skimmers were again observed in 1976, least terns in 1977, and both in 1985. Great blue herons, black-crowned night-herons and great egrets use the mature salt cedar for resting and roosting.

Discussion and Management Recommendations

Raccoons are a recent addition to the predator populations on these islands.

Recommendations:

1. Control the predators.

Island 614–305E

Old Name: (55) NM97–OM47

Location

Latitude: 27.519121 **Longitude:** -97.296933 **Area:** 5.9515 ha **Elevation:** 1.5 m
Length: 318.5 m **Width:** 203 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes, raccoons and fire ants

Substrate types: sand, shell and silt

Summary: This island is located just north of the previous one (614–305D). The western slope of the crown contains several scattered salt cedar trees and the northern slope has a stand of leadball trees surrounded by prickly pear. There are scattered leadball trees on the eastern side and prickly pear near the central summit. The remaining vegetation is like that of other islands in this group.

Bird Survey 1997 – 2003

614-305E	1997	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
LETE	not surveyed						

Nesting/Use History

Early records for this island began in 1980 when coyote tracks were found. It was not surveyed again until 1992. Four pair of least terns were counted on the bare ground in 1993. Since then, only coyote tracks have been found.

Discussion and Management Recommendations

The vegetation and bare ground on all of these islands is good for nesting colonial waterbirds. Recommendations:

1. The predators must be controlled before the birds will immigrate to this island.

Island 614–305F

Old Name: (56) NM95–OM45

Location

Latitude: 27.521954 **Longitude:** -97.295772 **Area:** 4.4545 ha **Elevation:** N/A
Length: 234 m **Width:** 240.2 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: This small, diked island has low areas south and west outside the dike. Mesquite trees are located on the northern rim, the crown of the interior and along the eastern side of the area outside of the dike. The interior of the dike contains a number of brasil shrubs. The rest of the vegetation consists of grasses, forbs and halophytes.

Bird Survey 1997 – 2003

614-305F	1997	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBTE	not surveyed						
LETE							
BLSK							

Nesting/Use History

Nesting birds were only observed in 1993. Forty-six pair of least terns, 35 pair of black skimmers and eleven pair of gull-billed terns constructed nests on the barren ground inside the dike.

Discussion and Management Recommendations

Coyote tracks have been observed since 1980 and their presence influences any management suggestions for this island.

Island 614–305G

Old Name: (57) NM93–OM43

Location

Latitude: 27.525644 **Longitude:** -97.294127 **Area:** 7.3356 ha **Elevation:** 2.5 m
Length: 453.1 m **Width:** 174.2 m

Description

Ownership: Padre Island National Seashore

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: This is the northernmost island of the chain that belongs to the Padre Island National Seashore and was formed between 1945 and 1947. There is a deep channel that separates this island from the island to the south. Tanks, pipes and items belonging to a gas and petroleum company have been recently removed from the north end. The north end has a large salt cedar, oleander and two brasils. The central core contains other brasils and two large Australian pines. On the crest there are more oleander, necklace pod, a leadball and a large mesquite tree. The rest of the island is covered with grasses, patches of prickly pear, halophytes and other forbs. There is very little bare ground other than a dry pond at the southern end and some oil spill areas near the center.

For more detailed information about this island, see Chaney et al. (1978).

Bird Survey 1997 – 2003

614-305G	1997	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GBHE	not surveyed						
GBTE							
LETE							
BLSK							

Nesting/Use History

The terns and skimmers were found only during the early years of vegetation growth (1973 and 1976). A single great blue heron nest was found in the trees along with 22 individuals in 1993. Black-crowned night-herons and great egrets have also used the trees for loafing and roosting in some years.

Discussion and Management Recommendations

This island could be managed in the same fashion as 614–305B in this group.

Recommendations:

1. This would be an even better island to develop than 614–305B for recreational purposes. Landings could be made from the deep channel at the northern end of the island.
2. Predators must be removed.

Island 614–304A

Old Name: (58) NM92–OM42

Location

Latitude: N/A **Longitude:** N/A **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This small island was created in the early 1980s during construction of a side channel westward from GIWW marker 92. Halophytes were the only plants that developed on the island before it subsided.

Bird Survey 1997 – 2003

614-304A	5/21/97	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
SNEG	remnant	submerged	submerged	submerged	submerged	submerged	submerged
TRHE							
LAGU							
GBTE							
CATE							
BLSK							

Nesting/Use History

Gull-billed terns, skimmers and laughing gulls nested here in 1984. A pair of Caspian terns joined the group the next year along with a tri-colored heron. A pair of snowy egrets appeared in 1990. Larger birds nested only one season, and others nested intermittently until 1994, when the island was mostly submerged.

Discussion and Management Recommendations

This island should be abandoned as a site for nesting of colonial waterbirds. The next island along this channel has a much better foundation and nesting history.

Island 614–304B

Old Name: (59) NM90–OM42

Location

Latitude: 27.534592 **Longitude:** -97.297744 **Area:** .4541 ha **Elevation:** 0.8 m
Length: 72.7 m **Width:** 61.1 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand and shell

Summary: The channel west of GIWW marker 92 turns north and ends at a well site. This low, round island lies east of the channel and just short of the well site. Patches of halophytes and bare ground are found along the western side of the island. The crown contains pigweed, saltgrass, wolfberry, sedges and sea oxeye. The northern and eastern sides contain sea oxeye in addition to the typical halophytes.

Bird Survey 1997 – 2003

614-304B	5/21/97	5/20/98	5/20/99	5/15/00	5/29/01	5/28/02	5/28/03
GREG			1				
SNEG			1				
TRHE	7	7			4		
REEG	5	10	5	4	2		
CAEG							
WFIB							
ROSP							
LAGU	42	40	126	16	77	14	145
GBTE	13	22		17	7	13	
CATE		2		1			
ROYT	3	4	1	38			
SATE							
SOTE							
BLSK	6	18		1	8	8	

Nesting/Use History

Since its formation around 1980, this has been a very good small island for a variety of species. Earliest records (1984) list 540 royal terns, 168 laughing gulls, 4 tri-colored herons and 2 reddish egrets. Snowy egrets, a cattle egret, white-faced ibis, Sandwich terns and a sooty tern joined them the following year. Gull-billed terns and skimmers arrived in 1989

when the large birds were not present. The large wading birds were absent from 1989 to 1992, and again in 1996. Their absence could be associated with activity at the well site. A single pair of roseate spoonbills nested here in 1994, and Caspian terns were present in 1998 and 2000.

Discussion and Management Recommendations

It is in an ideal location, near good food sources and removed from predators and excess human activity. The variety and number of birds that have occupied this small island during certain years is amazing. In addition to its value as a rookery island, it is also a valuable loafing island. Often brown and white pelicans, roseate spoonbills, cormorants and a variety of shorebirds occupy the southwestern corner of the island. Recommendations:

1. Dredge material placed on the eastern side to enlarge the island would be desirable.
2. Establish shrubs and trees for herons and egrets.
3. Maintain bare ground for skimmers and terns. Monitor groundcover and remove excess vegetation as appropriate for these species.

Island 614–302A**Old Name:** (60) NM80–OM42**Location**

Latitude: 27.554183 **Longitude:** -97.286298 **Area:** 1.4435 ha **Elevation:** 2.0 m
Length: 103.6 m **Width:** 136.8 m

Description**Ownership:** Texas General Land Office**Impacts:** N/A**Predators:** grackles and fire ants**Substrate types:** sand, shell and silt

Summary: This island is located west of the GIWW, near marker 80. The southern end has been modified into a long, narrow east-west diked area. An abandoned cabin is nestled among some Australian pine trees at the center of the island. Bare areas are located on the western margin and at the eastern end of the diked area. A bare point of sand is forming at the southeastern corner. The high point of the island is located on the dike and vegetation here consists of primarily false ragweed grading into sea oxeye on the sides, then into pigweed, camphor daisy and halophytes in the lower areas. Elevation of the lower areas is approximately 0.75 meters.

Bird Survey 1997 – 2003

614-302A	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	2		1	5	4	5	6
GREG					5	5	12
SNEG						4	4
LBHE						1	
TRHE		5	6	14	4	6	38
REEG	1			5		6	
CAEG						30	30
BCNH							6
ROSP							38
LAGU	280	385	560	630	574	560	4
GBTE	7						
CATE		1		1			
BLSK	15	2	3	3			

Nesting/Use History

The first records of nesting birds were gull-billed terns and skimmers on the southeastern corner in 1987. The terns continued to nest until 1998, and skimmers until 2001. Three pair

of laughing gulls appeared in 1990 and their numbers steadily increased in later years. Herons and egrets appeared later. Great blue herons and great egrets nested in the pines and reddish egrets and tri-colored herons nested in the sea oxeye. Numbers and variety of birds using the Australian pines has increased in 2002 and 2003 with the addition of the black-crowned night-herons, cattle egrets and roseate spoonbills. All of the species except the laughing gulls and tri-colored herons used the Australian pines for nesting. A predator may have caused the reduction in laughing gulls in 2003, but does not account for the increase of tri-colored herons.

Discussion and Management Recommendations

This is a very good island because of its isolation, good shell foundation, good nesting sites for a variety of birds and the absence of large predators. However, the large number of laughing gulls is a problem. Recommendations:

1. The cabin ruins and pier should be removed or burned and not rebuilt.
2. Plant mesquite trees and various shrubs on the western side.
3. Bare ground areas should be checked every year - excess vegetation should be removed.
4. Install signs prohibiting human activity during nesting season.

Island 614–302B

Old Name: (61) NM79–OM37

Location

Latitude: 27.556425 **Longitude:** -97.277777 **Area:** 15.0098 ha **Elevation:** 1.2 m
Length: 684 m **Width:** 267 m

Description

Ownership: Texas General Land Office

Impacts: four cabins

Predators: coyotes and fire ants

Substrate types: shell, sand and silt

Summary: The three crowns of this island were once separate and distinct islands. There is a cabin associated with each crown and two with the northern one. A detailed description of the site will not be provided since it is not considered for management.

Bird Survey 1997 – 2003

614-302B	5/21/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBTE							
LETE							
BLSK							

Nesting/Use History

Two tern species and the skimmers were recorded in 1973 when the islands were relatively new. They have not been present since. Coyote tracks and scat have been observed.

Discussion and Management Recommendations

There are no recommendations to manage this island for nesting of colonial waterbirds.

Island 614-301A

Old Name: (62) NM71-OM35

Location

Latitude: 27.569761 **Longitude:** -97.270854 **Area:** 2.0326 ha **Elevation:** 1.2 m

Length: 186.2m **Width:** 142 m

Description

Ownership: Texas General Land Office

Impacts: three cabins

Predators: coyotes and fire ants

Substrate types: shell, sand and silt

Summary: This small, round island is near marker 71 and has recently joined its southern neighbors. A detailed description of the will not be provided since it is not considered for management.

Bird Survey 1997 – 2003

614-301A	5/21/97	5/20/98	5/18/99	5/15/00	5/30/01	5/29/02	5/29/03
LETE							

Nesting/Use History

In spite of the presence of coyotes, 46 pair of least terns attempted to nest on the bare ground in 1996.

Discussion and Management Recommendations

There is no way to economically manage this island for least terns or any other colonial waterbird.

Island 614–301B

Old Name: (63) NM72 OM34

Location

Latitude: 27.566221 **Longitude:** -97.278176 **Area:** .2866 ha **Elevation:** N/A

Length: 80 m **Width:** 41.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: shell, some sand and silt

Summary: This low island is located west of marker 72 on the GIWW. The crown of the island is on the north end and is covered with sea oxeye and camphor daisy. On the crown are sheets of plywood, part of an old duck blind, that cover two large fire ant colonies. The substrate slopes to a low area near the southern margin. This area is filled with wolfberry and typical halophytes. The rest of the island contains camphor daisy, false ragweed and some sea oxeye. There is one small growth of prickly pear on the northwestern corner.

Bird Survey 1997 – 2003

614-301A	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE							
SNEG						1	
TRHE				1	2	2	1
REEG			2				2
LAGU	56	91	88	98	210	140	63
GBTE	7					10	14
CATE				1			
BLSK	21	6	4	25	32	25	24

Nesting/Use History

Individual records begin in 1986 when 91 pair of laughing gulls and a single pair of great blue herons and tri-colored herons nested here. Reddish egrets began nesting in 1995. Herons and egrets continued to nest here intermittently. Gull-billed terns, Caspian terns and skimmers were present with the gulls in 1992. The gulls and skimmers have been persistent nesters on the island with the gulls steadily increasing in numbers.

Discussion and Management Recommendations

This is a very good island for colonial waterbird management. It is isolated from predators and humans. It has a good foundation and large areas to plant trees and shrubs. Birds presently using it will attract others. Recommendations:

1. Deposition of good material to raise the elevation is desirable.
2. Fire ants and prickly pear should be removed.
3. Install signs prohibiting human activity during the nesting season.
4. Discourage the gulls from nesting here.

Island 614–301C

Old Name: (64) NM63–OM33

Location

Latitude: 27.586659 **Longitude:** -97.261926 **Area:** 18.4942 ha **Elevation:** 1.5 m
Length: 748 m **Width:** 303.5 m

Description

Ownership: Texas General Land Office

Impacts: one cabin

Predators: coyotes and fire ants

Substrate types: shell, sand and silt

Summary: This site is located east of the GIWW, near marker 63 and is part of a four-island group. Three of the islands have been joined together with depositional material. A single large bare area is located on the east side. A cabin in disrepair is found on the south central end of the joined islands. Vegetation is typical of islands along the GIWW and includes trees, false ragweed, pigweed, camphor daisy, sea oxeye, sea lavender, grasses and halophytes.

Bird Survey 1997 – 2003

614-301C	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE							
BCNH							
GBTE							
LETE							
BLSK							

Nesting/Use History

Thirteen pair of least terns, three pair of gull-billed terns and one pair of skimmers nested here in 1973. The next observation in 1977 included least terns and skimmers on the bare ground. Eleven nests of great blue herons and four of black-crowned night-herons were recorded in 1982. Ten least terns in 1995 were the last birds to be recorded on these islands.

Discussion and Management Recommendations

Recommendations:

1. Remove the cabin before it is repaired.
2. If coyotes and raccoons were permanently removed, management actions for this island could be developed. Coyotes have been seen on this island in the last few years.

Island 614–300A

Old Name: (65) NM59–OM29

Location

Latitude: 27.591166 **Longitude:** -97.259746 **Area:** 4.5405 ha **Elevation:** 1.2 m
Length: 183.6 m **Width:** 268.5 m

Description

Ownership: Texas General Land Office

Impacts: remnants of one cabin

Predators: coyotes, raccoons, fire ants and grackles

Substrate types: sand, shell and mud

Summary: This large, round island is located east of GIWW marker 59 and opposite the junction of a channel leading to the mainland. The island has been joined with its southern neighbor through the recent deposition of material between them. In the center of the island is a large stand of leadball trees and to the east, a large Spanish dagger that often supports a nesting platform. Around these trees is a thick stand of prickly pear. The rest of the vegetation is similar to other dredged islands along the GIWW. A large bare area from the latest depositional event lies between and behind the island.

Bird Survey 1997 – 2003

614-300A	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE			2			1	
GREG					1		
REEG							
BCNH			6	7			
GBTE							
CATE							
LETE							

Nesting/Use History

In spite of predators, the birds listed in the table (above) have attempted to nest in the trees or in the case of the terns, on the bare ground. During the early years, when only coyotes were present, nesting success was probably higher for the tree-nesters. But with the arrival of raccoons, nesting success is doubtful. Black-crowned night-herons still roost in the leadball trees during the daylight hours. The island and its trees serve as a day-roost for night-herons and a fallout, re-fueling station for tropical migrants.

Discussion and Management Recommendations

Predators limit nesting success on this island. Preventing coyotes and raccoons from reaching the island would be a monumental task. The water that separates the site from Padre Island has become shallow and predators can easily walk and swim the short distance. Also, since these islands are interconnected, predators move easily between them. Recommendations:

1. Nesting success would improve if predators were trapped for several days during the winter every year.

Island 614–300B

Old Name: (66) HC10–OM28

Location

Latitude: 27.592678 **Longitude:** -97.264484 **Area:** 1.8338 ha **Elevation:** 1.6 m
Length: 139 m **Width:** 156.2 m

Description

Ownership: Texas General Land Office

Impacts: duck blind

Predators: fire ants

Substrate types: sand, shell and silt

Summary: This large island is located west of the GIWW, near the junction of a channel leading to Humble Channel and a bait stand on the mainland. The crown of the island contains scattered patches of prickly pear, false ragweed, sunflower, cordgrass, croton, sea oats and other grasses. Two bare areas, one on the eastern side and the other on the southwestern corner, cover about 20 percent of the island. The margins and slopes of the island contain some sea oxeye, good stands of saltgrass, shoregrass and typical halophytes. There is a duck blind on the northern side.

Bird Survey 1997 – 2003

614-300B	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	2	12	2	5	5	4	11
GREG							
SNEG							
TRHE						1	
REEG	1					2	1
LAGU	13	24	10	56	259	560	765
GBTE		14	11	20			3
ROYT							
FOTE	4		80	64	40	8	
BLSK	1	27	3	5		3	1

Nesting/Use History

Records for this island date to 1973 and show great blue herons building platforms on the prickly pear, gull-billed terns and skimmers on the bare ground, and laughing gulls throughout the lower vegetation. The other herons and egrets came later and were not persistent, perhaps because the type of vegetation was not favored. In 1990, 40 Forster's terns appeared on the southwestern berm and have nested there almost every year since.

Discussion and Management Recommendations

This is a very good island, but could be improved. Recommendations:

1. Remove some vegetation. The false ragweed, grasses and some of the prickly pear could be eliminated. Selective removal of the halophytes would increase the bare areas benefiting terns and skimmers.
2. Establish some trees and shrubs.
3. Deposition of new, softer sand and shell would be desirable.
4. Install signs prohibiting human activity during nesting season.

Island 614–300C

Old Name: (67) HC9

Location

Latitude: 27.593665 **Longitude:** -97.267728 **Area:** .462 ha **Elevation:** 1.2 m
Length: 74 m **Width:** 77.6 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand, shell and silt

Summary: This island is located north of the channel and east of the previous island (614–300B) and is smaller and lower. The crown is covered with necklace pod, Indian blanket, sea oats, cordgrass, widow’s tear and prickly pear, which gives way to patches of sea oxeye, saltgrass, false ragweed and pigweed. A five-meter strip of halophytes surrounds this vegetation. The southern and central margins are bare sand, much of which is inundated at high tide.

Bird Survey 1997 – 2003

614-300C	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	10	6	2	3	33	3	8
TRHE				1	1	1	
REEG		2	1	3	4	9	3
LAGU	84	49	60	91	154	217	270

Nesting/Use History

This island has not supported the species diversity observed on the others. Evidently the lack of good bare ground has kept the terns and skimmers from nesting here. Great blue herons built platforms on the prickly pear from 1973 to 2003. Reddish egrets have done the same, but only in recent years. A single tri-colored heron has nested in the sea oxeye on nine different occasions. Beginning in 1982, laughing gulls have nested every year except 1991 and 1992. Their numbers are increasing.

Discussion and Management Recommendations

Recommendations:

1. Plant and establish native trees and shrubs.
2. Expose more bare ground on the southern side to entice terns and skimmers.

3. Install signs prohibiting human activity during nesting season.

Island 614–300D

Old Name: (68) HC8

Location

Latitude: 27.595124 **Longitude:** -97.270392 **Area:** .9842 ha **Elevation:** 1.2 m
Length: 108.1 m **Width:** 99.2 m

Description

Ownership: Texas General Land Office

Impacts: duck blind

Predators: fire ants

Substrate types: sand, shell and silt

Summary: This is the third island in the chain along the north side of the channel. It is larger than the preceding one (614–300C) and contains a small, bare area surrounded by halophytes on the western side. An oleander and a leadball tree are on the northwestern corner near a well-constructed duck blind. There are large patches of sea oxeye on the southern, central and northwestern parts of the island. The southern patch contains some large prickly pear. Around the oxeye are grasses, sedges, lantana and pigweed. The northern half of the island contains a thick stand of cordgrass around the oleander and scattered clumps of prickly pear. The center of the island is saltgrass grading into halophytes that extend around the southern margin.

Bird Survey 1997 – 2003

614-300D	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	4	7	1	2	1	3	7
SNEG						1	
LBHE						2	
TRHE	8		6		3	15	8
REEG	5	4	4	3	4	8	4
LAGU	210	182	112	196	265	210	
GBTE							
CATE							
ROYT							
FOTE	80	48				24	
SOTE							
BLSK							

Nesting/Use History

In 1973, 226 laughing gulls nested in herbaceous vegetation, 12 tri-colored herons nested on sea oxeye, 6 Caspian, 4 sooty terns and 2 royal nested on bare ground, and 2 great blue

herons nested on prickly pear. Other herons, egrets, terns and skimmers appeared in later years. Reddish egrets and Forster's terns nested more consistently in later years. Great blue herons and laughing gulls used the island almost every year. The gulls were not present for the first time in 2003.

Discussion and Management Recommendations

This is another good island that can be improved. Recommendations:

1. Plant and establish trees and shrubs.
2. Remove some of the vegetation around the bare area.
3. Install signs prohibiting human activity during nesting season.

Island 614–300E

Old Name: (69) HC7

Location

Latitude: 27.595811 **Longitude:** -97.273684 **Area:** .6181 ha **Elevation:** 0.65 m
Length: 78.5 m **Width:** 66.3 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand, shell and silt

Summary: This is one of six islands formed to either side of a short channel extending to the north from the main channel. All are relatively small with the same substrate and similar vegetation. This island is the smallest of the group because it is eroding more rapidly. The center of the island is partly bare, as are the extensions to the south and southwest, which are subject to flooding. Vegetation is primarily sea oxeye and halophytes such as glasswort, sea purslane, seablite and saltwort.

Bird Survey 1997 – 2003

614-300E	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE				1			
SNEG							
LBHE							
TRHE	4	3	2				2
LAGU	91	140	119	56	98	119	162
REEG	4	4	4	1			
CATE	62	40	7		1		
SOTE							

Nesting/Use History

This island, like the others in the group, has been a productive nesting site for herons, egrets and laughing gulls since 1976. Caspian terns occupied the central bare area in high numbers given the amount of space available in 1997 and 1998.

Discussion and Management Recommendations

These small islands have supported a diverse number of waterbirds. Recommendations:

1. All of these islands should be closely monitored.

2. Vegetation and bare ground should be controlled on islands where ground- and vegetation-nesters have been observed.
3. Remove duck blinds from all of these small islands.
4. Deposition of material and enlargement of the islands is acceptable. This particular island could be replenished with good material to arrest erosion.
5. Plant and establish trees to attract to tree-nesters.
6. Install signs prohibiting human activity during nesting season.

Island 614–300F**Old Name:** (70) HC6**Location**

Latitude: 27.597613 **Longitude:** -97.273153 **Area:** .7405 ha **Elevation:** 1.0 m
Length: 94.5 m **Width:** 88.7 m

Description**Ownership:** Texas General Land Office**Impacts:** two duck blinds**Predators:** fire ants**Substrate types:** sand, shell and silt

Summary: This is the central of three islands on the eastern side of the short channel. Bare ground on the southern part is very low and subject to inundation. The vegetation is similar to that of the other islands and includes prickly pear, dropseed grasses, saltgrass and pigweed on the summit, sea oxeye, wolfberry and halophytes around the margin. There is a dense, healthy stand of sea oxeye on the northern side. Two topless, well-constructed duck blinds are present, one on the northwestern corner and the other on the southeastern corner.

Bird Survey 1997 – 2003

614-300F	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	2	1		1			
GREG							
SNEG							
LBHE	6						
TRHE	12	10	2			1	8
REEG	4	10	4	1			
WFIB							
LAGU	84	126	105	70	98	105	180
CATE		4					6
ROYT							15

Nesting/Use History

Beginning in 1976, records show this island to be heavily used by herons, egrets and laughing gulls. Their numbers have greatly decreased in the last few years and this could be associated with the activity of fishermen or the duck hunters. This island is one of the few small islands on which white-faced ibis and little blue herons have nested. The only bare-ground nesters were Caspian terns and royal terns.

Discussion and Management Recommendations

Recommendations:

1. The island should be closely monitored (along with the other five in this group).
2. Remove the duck blinds since they provide no substrate for herons or egrets. Human activity associated with the blinds could be a detriment.

Island 614–300G

Old Name: (71) HC5

Location

Latitude: 27.602248 **Longitude:** -97.270828 **Area:** .4335 ha **Elevation:** 1.0 m
Length: 54.4 m **Width:** 81.1 m

Description

Ownership: Texas General Land Office

Impacts: duck blind and boat

Predators: fire ants

Substrate types: large shell, sand and silt

Summary: This is the last island on the eastern side of the short channel. The crown of the island along the eastern end contains patches of dropseed grass, prickly pear and pigweed. The rest of the island is covered with sea oxeye, wolfberry and halophytes. There is a duck blind on the northeastern corner and an old boat on the northwestern side.

Bird Survey 1997 – 2003

614-300G	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE				1			
SNEG							
TRHE	1	1			1		1
REEG	1			2			
LAGU	70	98	161	140	175	105	135
CATE							
SOTE							

Nesting/Use History

Since 1980, tri-colored herons have been the most persistent large birds to nest on this island. Since 1980, great blue herons and reddish egrets have nested here ten times. Snowy egrets, Caspian and sooty terns have nested once since that time. This island could be named Gull Island based on the number of gulls that nest here; the density of gulls is greater than any others within the immediate area.

Discussion and Management Recommendations

Recommendations:

1. Control fire ants.
2. Remove duck blind.

3. Remove laughing gulls.
4. Install signs prohibiting human activity during nesting season and monitor often.

Island 614–300H

Old Name: (72) HC4

Location

Latitude: 27.605639 **Longitude:** -97.272475 **Area:** .6094 ha **Elevation:** 0.9 m
Length: 54.6 m **Width:** 94.8 m

Description

Ownership: Texas General Land Office

Impacts: duck blind

Predators: fire ants

Substrate types: more shell than sand, silt

Summary: This is the northernmost island of the three that lie west of the short channel and another good island for colonial waterbirds. There is a bare area on the western side of the island and a bare point on the northwestern corner where the duck blind is located. The crown of the island contains pigweed, halophytes and sea oxeye. Halophytes, wolfberry and saltgrass form the margins of the island.

Bird Survey 1997 – 2003

614-300H	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE			1				
SNEG							
LBHE			1				
TRHE	6	1	4		2	1	8
REEG	3	2	2	1	1		
CAEG							
LAGU	161	231	140	210	154	140	63
GBTE							
FOTE							
SOTE							
BLSK							

Nesting/Use History

All islands of this group are very similar in their nesting history. This island is important for a large diversity of birds. In early observations (1979 and 1980), gull-billed terns, skimmers and laughing gulls were the only nesters. Herons and egrets appeared in 1981 and have nested in fair numbers ever since. Laughing gulls have always been numerous.

Discussion and Management Recommendations

Recommendations:

1. Nesting platforms should be installed.
2. Install signs prohibiting human activity during nesting season.

Island 614–300I

Old Name: (73) HC3

Location

Latitude: 27.601347 **Longitude:** -97.275476 **Area:** .498 ha **Elevation:** 0.9 m
Length: 73 m **Width:** 58.3 m

Description

Ownership: Texas General Land Office

Impacts: large duck blind

Predators: fire ants

Substrate types: sand, shell and silt

Summary: This is the central of three islands on the western side of the short channel. There is a large bare area on the southwestern side and another wide strip on the eastern and southern sides. The crown of the island is a long strip of prickly pear, dropseed and false ragweed. At the northern end is a small salt cedar. Surrounding this is a broad band of sea oxeeye that grades into halophytes on all sides. There is a very large duck blind at the southeastern corner of the island.

Bird Survey 1997 – 2003

614-300I	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE							
SNEG							
LBHE	1						
TRHE	6	5	3	2	3	1	1
REEG	3	3	1	2			1
LAGU	119	49	84	126	105	56	90
FOTE							

Nesting/Use History

This island is similar to the previous one (614–300H) and has supported a diverse population of birds, especially herons and egrets, since counting began in 1980. Four Forster’s terns were counted in 1996 and laughing gulls have been present every year in increasing numbers.

Discussion and Management Recommendations

Following the trend, the last few years have shown a reduction in the number and species of nesting birds. Recommendations:

1. This island should be carefully monitored. Management should be the same for all six of the islands in this group.

Island 614–300J**Old Name:** (74) HC2**Location**

Latitude: 27.597356 **Longitude:** -97.277219 **Area:** .6902 ha **Elevation:** 1.1m
Length: 86.5 m **Width:** 78.4 m

Description**Ownership:** Texas General Land Office**Impacts:** one duck blind**Predators:** none**Substrate types:** sand, shell and silt

Summary: This small island is located just south of the preceding one (614–300I) and is the sixth of six islands in the group to either side of the short channel. There is a large bare area that extends from the central eastside to the northern end. Saltgrass, sea purslane, glasswort and other halophytes surround this bare area. The crown is covered with saltgrass, dropseed and widow's tear. Around this and between the halophytes is a broad band of sea oxeye. There is a duck blind on the southwestern corner.

Bird Survey 1997 – 2003

614-300J	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	2						
GREG							
SNEG							1
LBHE							
TRHE			1		3	12	7
REEG	2				3	1	2
CAEG							
LAGU	133		168	147	252	168	270
CATE			18	16	70	68	
ROYT							
FOTE	2						

Nesting/Use History

All the islands along these channels are important to nesting of colonial waterbirds. Their history is one of continuous occupation by a great variety of birds. For example, nests of 39 tri-colored herons, 10 snowy egrets, 3 great blue herons, 2 reddish egrets and one great egret were found associated with the sea oxeye in 1982. During the same year, six royal and 42 Forster's tern nests were counted on the bare ground. Laughing gull nests (194) were

distributed throughout the low vegetation. The last few years have not been as productive as earlier ones.

Discussion and Management Recommendations

The islands are good because they are isolated from predators and are not eroding too rapidly. The nesting tenacity and diversity of the birds that return to these islands each year is significant. Duck hunters, fishermen and large numbers of laughing gulls on the island hinder their success. Duck hunters could affect early nesting by great blue herons. Fishermen's boats have been seen beached on islands in this group during the nesting season – this is probably why no birds nested in 1998. Gulls affect hatching and fledging success of herons and egrets if a disturbance occurs. Recommendations:

1. This island, and the others in the area, should be closely monitored to control the amount of quality, bare ground for nesting terns and skimmers and the quality and quantity of vegetation for the larger birds.

Island 614–300K

Old Name: (75) HC1

Location

Latitude: 27.598901 **Longitude:** -97.280609 **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand

Summary: This is the western most island of the group that lies north of a channel connecting the GIWW with the Humble Channel and a bait stand on the mainland. It once contained low halophytes but has eroded and is now submerged during normal tides.

Bird Survey 1997 – 2003

614-300K	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE		1	submerged	submerged	submerged	submerged	submerged
LAGU	10/7P	36/25P					
GBTE	6/4P						
FOTE							
BLSK	38/19P	2/1P					

Nesting/Use History

Forster’s terns, gull-billed terns and skimmers were the first recorded birds attempting to nest here (1984). These same species and laughing gulls attempted to nest intermittently until 1999 when the island was flooded. A single tri-colored heron, probably a loafer, was counted in 1998.

Discussion and Management Recommendations

Recommendations: This island should be allowed to erode away.

Island 614–300L

Old Name: (76) Pita Island

Location

Latitude: 27.602463 **Longitude:** -97.28756 **Area:** 13.1361 ha **Elevation:** 4.0 m
Length: 759.4 m **Width:** 370.3 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: shell, sand and silt

Summary: This very large, comma-shaped island has been used as a petroleum drilling platform and pumping station for several years. The south central part of the island is diked and the pipes and other equipment lie within the dike on the partially bare ground. In recent years, vegetation has encroached on the southern and northern edges of the bare ground. Various grasses occur here including Kleberg bluestem, Johnson, buffle, coastal bermuda, dropseed, and guinea grass. The top of the dike and outer slope are covered with cordgrass, sea oxeye, false willow, mesquite, huisache and salt cedar trees. It is here that most observed wading birds nest, especially on the northwestern end. The elevated portion of the island grades into a low area covered with wolfberry. Typical halophytes surround the bare silt areas that may contain water and algae. The northern low area is much larger than the southern one, occupying one third of the total island. The northeastern end of this low area is bare sand that extends as a narrow fringe around the rest of the area - most terns and skimmers nest here. The tail of the comma extends to the southwest and is covered with sea oxeye, wolfberry, sea lavender, sea purslane and other common halophytes. There are many laughing gulls and a few tri-colored herons on this extension of the island.

Bird Survey 1997 – 2003

614-300L	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	6	6	4	10	12	1	5
GREG	18	24	12	10	8	3	10
SNEG	28	40	25	20	26		2
LBHE	3	15	40	15	16		
TRHE	20	60	54	30	30		1
REEG	1	2	4	5	9		
CAEG	18	20	30	20	12		
WHIB			3	3			
ROSP		4	6		12		
LAGU	406	700	770	770	1680		140
GBTE							7

614-300L	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
ROYT							
FOTE	120	180					65
LETE							
SOTE							
BLSK	6	9	10	15			

Nesting/Use History

Since most human activity island has dissipated, it has become a good nesting site for wading birds. Early records (1973–89) indicate nesting only in the low area by royal terns, Forster’s terns, gull-billed terns, skimmers and a few laughing gulls. In 1990, much of the human activity ceased and the wading birds moved into the trees and sea oxeye to nest. In 1997, approximately 200 wading birds of 8 different species nested here. Also, there was an increase in the number of laughing gulls, a trend that continues to escalate. Skimmers, gull-billed and sooty terns have attempted to nest in the sand and shell inside the dike on occasion. The other terns have used the bare sand in the western part of the low area.

Discussion and Management Recommendations

This island is good for colonial waterbirds and should be closely monitored.

Recommendations:

1. Impacts, including human activities, related to oil and gas extraction should be minimized during much of the nesting season.
2. Coyotes should be removed (tracks were found in 1998 and 1999).
3. Replace dying salt cedar with mesquite trees.
4. The variety and quantity of grasses and other plants within the diked area should be controlled.
5. Install signs around the northwestern low area to prohibit human activity as fishing boats tend to anchor in this area.
6. Census takers should exercise extreme caution when making their counts on this island.

Island 614–240A

Old Name: (106) NM35–NC15A– OM15

Location

Latitude: 27.635679 **Longitude:** -97.235321 **Area:** 7.2621 ha **Elevation:** 0.9 m
Length: 278 m **Width:** 285 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: grackles and fire ants

Substrate types: sand, shell and silt

Summary: This island is located just north of the Kennedy Causeway Bridge and east of the GIWW. It was formed from several deposits made between 1945 and 1947. It is part of a string of islands that extend north to the southern end of Corpus Christi Bay. All possess similar vegetation, with trees being the important component for nesting herons, egrets and other tree nesting birds.

This island is round on three sides and squared on the southern side next to a channel that services boat docks. There is a ridge of higher ground extending from the southeastern corner of the island to a point near the northwestern corner. This ridge is densely covered with mesquite, false willow and a few brasil and granjeno shrubs. Around these there are thick stands of prickly pear, some lantana, sea oat, cordgrass and bluestem. Other plants include wild indigo, pigweed and sea oxeye grading into wolfberry, shoregrass and the typical halophytes at the margin. There is a large bare area on the southwestern corner.

See Chaney et al. (1978) for more detailed information on the early history of this island.

Bird Survey 1997 – 2003

614-240A	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	16		10	12	8	1	4
GREG	12N		6	6	14		
SNEG	14		10	1	4		
LBHE	1						
TRHE	1		1		3		
REEG	16		8	1	3		
CAEG	12			2			
BCNH	2		4	2			
ROSP				1			
LAGU	91						
GBTE							
LETE							

614-240A	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
BLSK							

Nesting/Use History

The first individual count for this island occurred in 1976 and included 75 cattle egrets, 25 great blue herons, 12 great egrets and 10 black-crowned night-herons in the trees, with 10 pair of skimmers on the bare ground. Snowy egrets, reddish egrets, tri-colored herons, gull-billed terns, and least terns arrived in later years. The terns and skimmers did not nest after 1978. Laughing gulls increased to over 400 until 1982 when they were not counted. Their numbers were reduced to 40 the following year and have remained low or absent since. The herons and egrets have used the island in good numbers except in 1989 and 1998 when no birds were found. In those years, human and canine tracks were in evidence. Great-tailed grackles, usually more than 50, use the trees as nesting sites.

Discussion and Management Recommendations

Recommendations:

1. Install signs prohibiting human activity during nesting season.
2. Install a fence on the southern end to keep people away from nesting birds.
3. Educate the bait stand operators about the importance of the island to the birds and the environment.

Island 614–240B

Old Name: (107) NM31–NC1, 2, 3

Location

Latitude: 27.643704 **Longitude:** -97.232172 **Area:** 7.8745 ha **Elevation:** 2.4 m
Length: 524 m **Width:** 201 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: Three islands make up this site, but the two northern islands have been joined by the addition of dredge material and accreting sand. There is still a small channel separating the southern island from the other two. The crown of the southern island contains a small mesquite and several false willow trees. The larger central island contains a large grove of mesquite surrounded by prickly pear. All three islands have various grasses, bluestem, cordgrass, sea oats and dropseed. Herbaceous plants include sea oxeye, false ragweed, pigweed, camphor daisy, saltgrass, wolfberry and the marginal halophytes.

Bird Survey 1997 – 2003

614-240B	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	16	16	7	8	4	9	8
GREG	12	22	5	6	12	11	4
SNEG	1	12			4	3	
LBHE	1				1		
TRHE							
REEG	1						
CAEG		11		3		3	
BCNH	6	18	8	14	3	1	
ROSP						3	
LAGU		6					
GBTE							
LETE							
BLSK							

Nesting/Use History

Since 1976, the trees on the central island have been attractive to tree-nesters, especially great blue herons, black-crowned night-herons and great egrets. The lack of shrubs and ground-nesters is probably due to the intermittent presence of coyotes (one was scared from

the islands in 1991). Gull-billed terns and black skimmers have nested on the bare ground twice, least terns once. Laughing gulls did not appear until 1986, after which they were absent until 1994. They were present in good numbers for the next 2 years. Evidently coyotes were not present when the laughing gulls were numerous.

Discussion and Management Recommendations

These islands and all the others in this string could be good rookery islands for shrub and tree-nesters, if the predators were permanently removed. The proper vegetation is present on all of these islands, but in excess. Recommendations:

1. Remove coyotes and other predators.
2. Maintain or increase bare areas to entice terns and skimmers.
3. Deposition on any of these islands during the non-nesting season is desirable. Material could be placed anywhere, but preference should be given to covering some of the rank vegetation on the slopes.
4. Install signs prohibiting human activity during nesting season.

Island 614–240C

Old Name: (108) NM29–NC4

Location

Latitude: 27.647352 **Longitude:** -97.231349 **Area:** 8.0836 ha **Elevation:** 2.7 m
Length: 388.3 m **Width:** 276.6 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: This island is just north of the preceding ones (614–240A and 614–240B), separated by a small channel. The highest point on the island is slightly east of center. It is covered with a thick stand of mesquite surrounded by prickly pear. Other elevated areas contain granjeno, false willow and mesquite trees. The trees, shrubs and prickly pear are surrounded by various grasses and forbs characteristic of the coastal prairie region in this part of Texas. At lower elevations necklace pod bushes, false ragweed, sea oxeye and saltgrass are present. Around the margins of the island there is a community of halophytes consisting of seablite, glasswort, saltwort and sea purslane.

Bird Survey 1997 – 2003

614-240C	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	22	40	6	14	8	8	22
GREG	34	42	15	18	11	10	28
SNEG	8	8				1	
LBHE	2						
REEG		2	1			1	
CAEG	34	10	4	12			
BCNH	25	20	14	22	3	20	
ROSP						3	3
LAGU							
GBTE							
FOTE							
LETE					3		
BLSK							

Nesting/Use History

Since 1976, this has been a very good island for great blue herons, black-crowned night-herons and great egrets. In some years, more than 200 nests of these birds have been found in

the large clump of mesquite. Terns, skimmers and laughing gulls have nested on the ground several years, but not recently. Their presence during certain years was probably due to the absence of predators.

Discussion and Management Recommendations

This island could be improved to accommodate the shrub and ground-nesters. Predator control is paramount for successful waterbird management. Recommendations:

1. Control predators with checks of the island's soft margins for coyote or raccoon tracks. If found, the predator should be trapped and removed. Even with predators, this has been a good island for tree-nesters and tropical migrants.
2. Use additional dredge material and mesquite trees to cover some of the excessive vegetation.

Island 614–240D

Old Name: (109) NM25–NC5, 6, 7

Location

Latitude: 27.654819 **Longitude:** -97.230284 **Area:** 24.3774 ha **Elevation:** 1.8 m
Length: 744 m **Width:** 396.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: This large island was formed from the union of three original deposits in the 1940's. There are three crowns to the island and on each there is a clump of mesquite. The north and central crowns contain single clumps and the southern one contains four clumps. The vegetation on all of these islands is similar - a variety of grasses with scattered prickly pear on the slopes and crown summits. These grade into a ring of sea oxeye mixed with cordgrass, saltgrass, false ragweed, pigweed, camphor daisy and wolfberry. The margins are lined with halophytes. There is bare sand around, and between each of the crowns.

Bird Survey 1997 – 2003

614-240D	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	10	18	7	7	9	6	30
GREG				2		1	21
SNEG							
TRHE							
REEG	1		1			1	
BCNH	4	17	8			4	10
FOTE							
LETE							28
BLSK							27

Nesting/Use History

In spite of the presence of coyotes in 1976, eight least tern nests were found on the island's eastern side in bare sand. In 1980, three pair of great blue herons and black-crowned night-herons had moved into the mesquite trees on the central crown. The next year there were 68 black-crowned night-herons, 40 great blue herons, 9 great egrets, one snowy egret and one reddish egret nesting there. The terns and skimmers attempted to nest during several years when new material was deposited. The great blue herons and night-herons were the only tree-nesters to nest almost every year.

Discussion and Management Recommendations

These are good islands, a little too large, but still attractive to colonial waterbirds and tropical migrants. Predator control is paramount for successful waterbird management.

Recommendations:

1. Control predators.
2. Remove or cover the thick grasses and prickly pear with additional dredge material, thereby exposing more bare ground.

Island 614–240E

Old Name: (110) NM23A–NC8

Location

Latitude: 27.657952 **Longitude:** -97.228491 **Area:** 4.9191 ha **Elevation:** 1.2 m
Length: 325.7 m **Width:** 163.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand shell and silt

Summary: This island is located just south of a power line and just north of the previous islands (614–240D). It is a small, low island with a small patch of mesquite on the central summit. The rest of the vegetation is coastal prairie grasses and herbs, sea oxeye, saltgrass and halophytes.

Bird Survey 1997 – 2003

614-240E	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE		2	1				6
GREG							4
BCNH		1					

Nesting/Use History

From 1978 to 1991, surveys found only coyote tracks. In 1992, a single nest of great blue herons was present in the trees and they continued to nest until 2000. They nested again in 2003 along with great egrets. A single pair of black-crowned night-herons nested here in 1998.

Discussion and Management Recommendations

Predator control is paramount for effective management of this island. Once predators are removed, this will be a good nesting site for the wading birds. Recommendations:

1. Remove predators, and then manage the same as the other islands in this group.
2. Remove excess vegetation by burning, covering with additional dredge material, or mechanically clearing.
3. Plant more trees and shrubs.
4. Install more signs prohibiting human activity during nesting season.

Island 614–240F

Old Name: (111) NM23–NC9

Location

Latitude: 27.660055 **Longitude:** -97.228152 **Area:** 2.8503 ha **Elevation:** 1.2 m
Length: 202.7 m **Width:** 141.7 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: This is the smallest and lowest island of this group. It is separated from the others by silt-laden channels. A power line crosses its southern margin. There is a low, central crown with two patches of mesquite trees. The rest of the vegetation is coastal prairie with the addition of sea oxeye, saltgrass, cordgrass and halophytes. There are extensive sand flats on the margins of the island.

Bird Survey 1997 – 2003

614-240F	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	3	4	1	1		1	7
GREG		1		1			11
REEG		1					
BCNH		1					
LETE		4					
BLSK							

Nesting/Use History

There has been little nesting activity on this island because of coyotes. Their tracks have been found every year since 1978. In 1986, three pair of skimmers were found on the sand flats. By 1993, the mesquite trees were large enough to support a pair of nesting great blue herons, which have continued to nest here until 2003. In 1998, they were joined by great egrets, black-crowned night-herons and reddish egrets in the trees and by least terns on the sand flats. The largest concentration of great egrets occurred in 2003.

Discussion and Management Recommendations

This is a good island for nesting colonial waterbirds and resting neotropical migrants.

Recommendations:

1. Predators must be eradicated.
2. Plant additional trees and shrubs.
3. Remove excessive vegetation.

Island 614–240G

Old Name: (112) NM21–NC10

Location

Latitude: 27.662802 **Longitude:** -97.227086 **Area:** 9.4225 ha **Elevation:** 1.8 m
Length: 361 m **Width:** 275 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, silt and shell

Summary: This island is isolated from its neighbors by a narrow channel to the north and south. There are several scattered mesquite trees on the higher ground and a large clump on the southern crown. Sunflower and sea oats are among the vegetation on the higher ground. Scattered patches of halophytes are present on the bare ground that surrounds the island.

Bird Survey 1997 – 2003

614-240G	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	1	2	5	4	4	1	3
GREG		1					6
REEG							
BCNH		2	4				2
LETE						3	

Nesting/Use History

From 1978 to 1984, coyotes were the only occupants of this island. In 1986, 14 great blue herons and a pair of reddish egrets built nests in the mesquite trees. Three nests of black-crowned night-herons were found the next year. Great egrets nested with the herons in 1994, 1996, 1998 and 2003. Great blue herons have been present every year except 1995.

Discussion and Management Recommendations

The management actions below should improve the island for colonial waterbirds and neotropical migrants. Recommendations:

1. Remove the coyotes.
2. Control excess vegetation.
3. Plant native trees and shrubs.

Island 614–240H

Old Name: (113) NM19–NC11

Location

Latitude: 27.666364 **Longitude:** -97.225535 **Area:** 7.3061 ha **Elevation:** 2.4 m
Length: 512 m **Width:** 202 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: This is another isolated island in this group. It is oval with a long pointed extension on the northwestern corner. The central summit contains several large mesquite trees surrounded by grasses, false ragweed, prickly pear, pigweed, camphor daisy, wild indigo and sea oxeye. These grade into the halophytes at the lower levels.

Bird Survey 1997 – 2003

614-240H	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/03	5/31/03
GBHE	2					3	
GREG							
BCNH							1
GBTE							
LETE		25	29				
BLSK							

Nesting/Use History

In 1984, 73 nests of skimmers, 45 nests of least terns and 16 pair of gull-billed terns were found on bare ground and among coyote tracks on the east side of the island. Great blue herons moved into the trees the next year and black-crowned night-herons joined them the following year. Great egrets, like the night-herons, tried nesting only once and great blue herons were not present after 1997. Least terns tried nesting on new dredge deposits in 1998 and 1999. Some successful nesting must have taken place in the trees, in spite of the coyotes.

Discussion and Management Recommendations

Like the others in this group, this island is good for colonial waterbirds, neotropical migrants and nesting by mourning doves, willets and plovers -- except for the predators.

Recommendations:

1. Remove the predators.

Island 614–240I

Old Name: (114) NM17–NC12

Location

Latitude: 27.671857 **Longitude:** -97.225148 **Area:** 20.2056 ha **Elevation:** 1.4 m
Length: 776 m **Width:** 387 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, shell and silt

Summary: This is a long, north-south oriented island formed from the union of four islands with dredge material. There is a large clump of mesquite trees on the summit of the third crown (counting from the north) and single mesquite trees on the other crowns. The grasses, forbs and prickly pear grade into cordgrass, which turns into a marsh on the east and west sides. In the western marsh, there are several small black mangroves. There are patches of halophytes on the bare sand of the eastern and western sides of the island.

Bird Survey 1997 – 2003

614-240I	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	34	30	12	14	7	6	2
GREG	30	40	22	22	32	34	26
SNEG	15	4	18	4	7	2	
LBHE		2	2	3	2	1	
TRHE		5	6		2		
REEG	1	1	1			2	
CAEG	30	26	30	16	2	23	
BCNH	22	35	24	14	10	5	2
WFIB		2				2	
ROSP				2		1	
FOTE							

Nesting/Use History

Coyotes were the only animals found on the island in 1978 and 1979. In 1980, 54 great blue herons with 6 nests, and 23 black-crowned night-herons with no nests were counted. No records exist for the next three years, but in 1984 great, snowy and reddish egrets had joined the herons. In 1986, 68 cattle egrets were with the other tree-nesters. Little blue herons, tri-colored herons and white-faced ibis were a part of the group in 1998. Numbers and species declined in 2003.

Discussion and Management Recommendations

This has been a good island for tree nesting birds in spite of the coyotes. The stand of mesquite on one summit is so thick and tall that the coyotes cannot get to the nests.

Recommendations:

1. Control the coyotes on a permanent basis and the number of individuals and species will increase – especially the number of fledged young.

Island 614–240J

Old Name: (115) NM15–NC13**Location**

Latitude: 27.676706 **Longitude:** -97.223258 **Area:** 16.482 ha **Elevation:** 2.7 m
Length: 494.4 m **Width:** 383 m**Description**

Ownership: Texas General Land Office**Impacts:** N/A**Predators:** coyotes and fire ants**Substrate types:** sand, shell and silt**Summary:** This island was originally separate from the others, but through accretion, it will soon join its northern neighbor. It is almost round with a large shelf of cordgrass, bare sand, small black mangroves and halophytes on the western side. Among the mangroves there is a small brasil shrub. On the central summit is a small mesquite tree surrounded by various grasses. On the southeastern side there are some small salt cedar and false willow trees.**Bird Survey 1997 – 2003**

614-240J	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE				1			2
GREG							2
SNEG							
TRHE							
REEG							
CAEG							
BCNH							
LETE							
BLSK							

Nesting/Use History

In 1978, four least tern nests, three black-crowned night-herons and two great blue herons were found on the island. The next bird count took place in 1984 and 54 night-herons, 48 great blue herons, 3 great egrets, 2 snowy egrets and 2 reddish egrets were observed. Thirty skimmers and five tri-colored herons joined the group the following year. The counts also revealed the presence of coyote tracks during this period. After 1986, a few night-herons and great blue herons were the only birds to nest here during three different years.

Discussion and Management Recommendations

Recommendations:

1. Remove the coyotes and manage for colonial waterbirds, neotropical migrants and other nesters.

Island 614–240K

Old Name: (116) NM13–NC14

Location

Latitude: 27.681384 **Longitude:** -97.221127 **Area:** 47.7839 ha **Elevation:** 2.7 m
Length: 804.4 m **Width:** 620.2 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes and fire ants

Substrate types: sand, silt and shell

Summary: This island is located in southern Corpus Christi Bay, east of the GIWW. This is the largest island in this group and was originally at least three separate islands that have since combined. There is a line of at least nine salt cedar trees down the center of the island oriented from north to south. False willow and prickly pear surround some of the salt cedar and are scattered in patches on the higher ground. A brasil shrub is growing near the northeastern corner. Necklace pod, pigweed, false ragweed and various grasses fill out the rest of the high ground. Cordgrass forms the lower margin of the high ground and is surrounded by a thin to thick ring of sea oxeye. There are two large bare areas, one on the eastern side and another on the mid-western side, and each is ringed by halophytes. There are some young black mangroves growing along the southwestern shore.

Bird Survey 1997 – 2003

614-240K	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	15	15	4	3	4	4	5
GREG							
REEG							
BCNH			2	3	3		
LETE	46		14				

Nesting/Use History

Coyote tracks or individuals have been seen on this island each year since 1978. The first recorded nests were six least terns in 1978. The first tree-nesters were great blue herons observed in 1990 and they have nested here every year since then. Thirty-five great blue herons, 12 great egrets, 8 black-crowned night-herons, 7 black-bellied whistling ducks and one reddish egret were counted in 1996. Least terns appeared in various years and constructed nests.

Discussion and Management Recommendations

The islands in this group are hard to survey because of limited access and vegetation density. However, they are good islands and should be managed in various ways. This island and all that are closely joined in this group are too large to effectively manage for predators and colonial waterbirds on a continual basis. They were trapped for a short period of time in the past, but the effort was insufficient to completely remove all the predators.

Recommendations:

1. If initiated, trapping should continue until all the predators are removed from this entire group of islands.
2. Burn some of the rank vegetation on some of the islands.
3. Deposit dredge material from this area on the crown slopes of some of these islands.
4. Remove excess vegetation mechanically or with chemical treatment on those islands with extensive sand flats. This is especially true of the prickly pear and some of the grasses.
5. Remove non-native trees and shrubs and replace with salt tolerant native species.
6. Remove the predators.
7. Install signs at each potential landing site prohibiting human activity during nesting season.

Island 614–222A

Old Name: (77) SC1

Location

Latitude: 27.633061 **Longitude:** -97.244046 **Area:** .4236 ha **Elevation:** 0.45 m
Length: 66.5 m **Width:** 78 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand and little shell

Summary: This is the largest of six islands in a group along the south side of an east-west channel from the GIWW to the Humble Channel. This island is at the junction with the GIWW and the smaller channel. It is round, very low, and has a large internal bare area shaped like a crescent on its northern and eastern side. Vegetation consists of mostly halophytes, except for a small stand of prickly pear on the southern side.

Bird Survey 1997 – 2003

614-222A	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	2	5	2	2	1	2	2
TRHE	1			3	4	3	
REEG			2				
CAEG							
LAGU	70	231	238	196	104	196	216

Nesting/Use History

Individual records for this island, and most of the others just south of the Kennedy Causeway, date from 1986. One to six pair of great blue herons nested on the prickly pear every year since 1986. Reddish egrets have joined them on two occasions and tri-colored heron have nested in the marginal vegetation several years. Laughing gulls, from 100 to over 300 pair, have nested every year in the halophytes around the margin of the island.

Discussion and Management Recommendations

This island, along with many in the area, is rapidly eroding because of poor site selection and foundation and exposure to high wind and wave action. The islands are not worth saving unless they could be made more attractive to laughing gulls and thereby relieve other islands from their presence. Recommendations:

1. Any measures to lure gulls to this island would be desirable.

Island 614–222B

Old Name: (78) SC2

Location

Latitude: 27.633576 **Longitude:** -97.245524 **Area:** .1019 ha **Elevation:** 0.3 m
Length: 40.8 m **Width:** 28 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: mostly sand and silt - little shell

Summary: This is the second island in the group of six. It is small and round with a central bare area surrounded by halophytes.

Bird Survey 1997 – 2003

614-222B	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE							
REEG							
LAGU	31	70	52	52	39	60	58

Nesting/Use History

From 1986 to 1991, tri-colored herons have nested here in very small numbers. Two reddish egrets were counted in 1989. Around 100 laughing gulls have nested here every year.

Discussion and Management Recommendations

Recommendations:

1. Any measures to lure gulls to this island would be desirable.

Island 614-222C

Old Name: (79) SC3

Location

Latitude: 27.634263 **Longitude:** -97.246396 **Area:** .1204 ha **Elevation:** 0.2 m
Length: 40 m **Width:** 30.2 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: The third island of the group. There is a large central u-shaped bare area surrounded by halophytes.

Bird Survey 1997 – 2003

614-222C	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE							
TRHE		1					
REEG		0+1					
LAGU	58/41P	120/84P	80/56P	55/38P	42/29P	64	67

Nesting/Use History

A single great blue heron and reddish egret have attempted to nest here in different years. Tri-colored herons have appeared several times. Laughing gulls, usually less than 100 have been counted every year.

Discussion and Management Recommendations

Recommendations:

1. Any measures to lure gulls to this island would be desirable.

Island 614–222D

Old Name: (80) SC4

Location

Latitude: 27.634692 **Longitude:** -97.247268 **Area:** .2036 ha **Elevation:** 0.3 m
Length: 47 m **Width:** 38.4 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: This is the fourth island in the group of six. The island is ringed by a narrow band of halophytes inside which is a large circular bare area around a small central core of halophytes.

Bird Survey 1997 – 2003

614-222D	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE							
LAGU	42	112	70	69	64	105	145

Nesting/Use History

Several tri-colored herons nested here from 1987 to 1990. Laughing gulls have nested every year.

Discussion and Management Recommendations

The island is in a disturbed area and too small to manage for colonial waterbirds.

Recommendations:

1. Allow the island to erode away.
2. Any measures to lure gulls to this island would be desirable.

Island 614–222E

Old Name: (81) SC5

Location

Latitude: 27.635121 **Longitude:** -97.24826 **Area:** .3136 ha **Elevation:** 0.25 m
Length: 47 m **Width:** 55.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: This island historically had more vegetation than it does at present. It is now reduced to a large band of halophytes, except on the southern shore where it is thinner. The central part is bare with scattered clumps of halophytes.

Bird Survey 1997 – 2003

614-222E	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE							
REEG							
LAGU	63	119	98	66	52	98	135
CATE					48		10
ROYT							

Nesting/Use History

Reddish egrets and royal terns have nested here only once, while Caspian terns have nested twice in the past three years. Tri-colored herons appeared from 1987 to 1990 and laughing gulls were present every year.

Discussion and Management Recommendations

Like the other islands in the group, this one is eroding and there is less vegetation each year. Any attempts to manage for colonial waterbirds would be hampered because of disturbance from boats and people. Recommendations:

1. Deposition of cobble, shell and sand could be used to join several islands in this group together. This may attract black skimmers away from their attempts to nest on the causeway and provide more habitat for other colonial waterbirds.

Island 614–222F

Old Name: (82) SC6

Location

Latitude: 27.635615 **Longitude:** -97.249035 **Area:** .0217 ha **Elevation:** 0.25 m
Length: 32 m **Width:** 19 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: This is the sixth of six islands in the group and is one of the smaller ones. The vegetation is halophytic and covers most of the island.

Bird Survey 1997 – 2003

614-222F	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE							
TRHE			1	1			
REEG							
LAGU	21	52	36	32	53	49	54
ROYT							12

Nesting/Use History

A single pair of great blue herons and reddish egrets were counted in 1989. Tri-colored herons were present from 1987 to 1990, and again in more recent years. Laughing gulls, less than 100 pair were present every year since 1986.

Discussion and Management Recommendations

This group of six islands should be left to erode away or left for laughing gulls. The islands are too exposed to human activity and lack a good foundation. Recommendations:

1. Several islands of this group could be joined together using good foundation material as “show-case islands” for public education and viewing of nesting colonial waterbirds.

Island 614–222G

Old Name: (83) SC7

Location

Latitude: 27.65173 **Longitude:** -97.26153 **Area:** 1.9723 ha **Elevation:** 0.76 m
Length: 155 m **Width:** 146 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: large and small shell, sand and mud

Summary: This island is located just east of the Humble Channel and south of the bridge. It is fairly large and oval shaped with a wing that extends westward. A petroleum pumping facility located within five meters of the northwestern corner of the island was removed recently. There are bare areas on the southern end that grade into wolfberry. On the higher areas there is prickly pear, pigweed, and scattered patches of false ragweed. The crown supports a good stand of sea oxeye around a deposition pit. There is an extensive area of bermudagrass and several black mangroves on the wing that extends westward toward the channel.

Bird Survey 1997 – 2003

614-222G	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	4	6	3	1	5	2	6
SNEG							
TRHE							
REEG					1		
LAGU	210	294	301	322	392	840	810
CATE							
ROYT							

Nesting/Use History

Great blue herons and laughing gulls nested every year since individual island counts began in 1986. The average heron pairs are 6 and the average gull pairs are 300. A few tri-colored herons and snowy egrets were found on several censuses. Five Caspian terns and one royal tern attempted to nest here in 1994.

Discussion and Management Recommendations

This could be a good island for colonial waterbird management because of its strong foundation. There appears to be little value in the mangroves on this or any other island in this survey area. They are not large enough to support nests and probably never will be because of their susceptibility to cold weather. Recommendations:

1. Plant trees and remove grass to enhance this site.
2. Deposition of good dredged material on the south-central part of the island may attract terns and skimmers.

Island 614–222H

Old Name: (84) SC8

Location

Latitude: 27.646494 **Longitude:** -97.259544 **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: N/A

Substrate types: sand and some shell

Summary: This small island was located just south of the junction that connects Humble Channel with the channel that parallels the Kennedy Causeway.

Bird Survey 1997 – 2003

614-222H	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE			submerged	submerged	submerged	submerged	submerged
LAGU							

Nesting/Use History

A few laughing gulls nested here in 1987 and 1988. Also in 1988, a single pair of tri-colored herons was observed. That was the last year any birds were observed here. The island has slowly eroded and has been flooded since 1998.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614-222I

Old Name: (85) SC9-Zig-Zag

Location

Latitude: 27.636838 **Longitude:** -97.262159 **Area:** 11.0836 ha **Elevation:** 1.8 m
Length: 1961.6 m **Width:** 85 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: oyster shell, caliche, sand and silt

Summary: This island is really a narrow road that connects five widened areas where petroleum wells were drilled. The northernmost widened area has a western extension into the channel from which vehicles and drilling gear were off-loaded. Because of the turns to the different well sites, the island has been called Zig-Zag Island. Much of the roadway between the enlarged portions is bare. The non-bare areas contain sea oxeye, wolfberry, sea purslane and glasswort. The first well site (northernmost) contains some low mesquite trees and prickly pear along its eastern margin. Sites two, three and five are covered with prickly pear and sea oxeye. Site four has large amounts of guinea grass with the prickly pear and sea oxeye.

Bird Survey 1997 – 2003

614-222I	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	4	4	5	2	1	5	24
GREG			3				2
SNEG	2		1		6	12	24
LBHE			1	1	1	4	24
TRHE	26	28	22	12	28	38	75
REEG	4	7	5	7	11	22	20
CAEG						3	
LAGU	504	1540	1890	3500	2520	4060	4510
GBTE	31	70	41	11		17	14
FOTE					2		
LETE							
SOTE				3		1	
BLSK	85	31	7	8	14	30	25

Nesting/Use History

Individual counts for this island begin in 1987 with the presence of two great blue heron and one tri-colored heron pair at site one. The great blue herons continue to nest in the mesquite each year. Fifteen pair of skimmers nested on bare ground at site three and 805 pair of gulls nested throughout. Fair numbers of tri-colored herons and reddish egrets have been counted at site two in the prickly pear and sea oxeye. Snowy egrets, great egrets and little blue herons have appeared in small numbers, intermittently in the same areas. Gull-billed terns have often joined the skimmers on the bare ground of site three and/or site five. Forster's and least terns have appeared only once and sooty terns only twice.

Discussion and Management Recommendations

The inclination is to "leave it to the laughing gulls." Their presence here might improve conditions on another island that is good for other low-vegetation nesters. However, the foundation and vegetation are so conducive to nesting for all types of colonial waterbirds that it should be managed more aggressively. Recommendations:

1. Plant mesquite and/or granjeno trees on site one, two and four.
2. Remove some prickly pear from sites one, two and four and guinea grass from site four. Remove most of the vegetation from sites three and five, then add some sand and small shell, if available. Removal of vegetation should be done just prior to the nesting season to reduce re-growth.
3. Install signs along the length of the island prohibiting human activity from the island during nesting season.

Island 614-222J

Old Name: (86) SC10

Location

Latitude: 27.642202 **Longitude:** -97.261917 **Area:** .3387 ha **Elevation:** 0.5 m
Length: 78.8 m **Width:** 46 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: This island is rapidly eroding. There is a small central patch of halophytes surrounded by bare sand. Another smaller island lies just to the east and the connection with this one is exposed during low tides. This island was formed when a channel was dug at right angles to one that parallels Zig-Zag Island.

Bird Survey 1997 – 2003

614-222J	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE							
LAGU	20	46		21		50	27
CATE	2	1		40			
ROYT							32

Nesting/Use History

A few pair of laughing gulls nested here almost every year since 1987. Caspian terns have been present in small numbers on many occasions and in 2000, 40 pair were present. There was a single tri-colored heron observed in 1988.

Discussion and Management Recommendations

The poor foundation and inaccessibility does not facilitate management. It should probably be allowed to erode away. Efforts to enhance colonial waterbird nesting habitat will have greater results on other islands.

Island 614–222K

Old Name: (87) SC10A

Location

Latitude: 27.640486 **Longitude:** -97.259058 **Area:** .4202 ha **Elevation:** 0.3 m
Length: 76.2 m **Width:** 68.3 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: This is a smaller and lower version of the previous island (614–222J). It lies on the same channel, but nearer Zig-Zag Island. This island was formed when a channel was dug at right angles to one that parallels Zig-Zag Island.

Bird Survey 1997 – 2003

614-222K	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
LAGU	36/25P			35/24P			79
BLSK							3

Nesting/Use History

A few laughing gulls have nested here in the last 15 years. During extreme high tides, the island can be inundated.

Discussion and Management Recommendations

Efforts to enhance colonial waterbird nesting habitat will have greater results on other islands. Therefore, the recommendation is to let this island erode away.

Island 614–222L

Old Name: (88) SC11**Location**

Latitude: 27.63937 **Longitude:** -97.263807 **Area:** .0862 ha **Elevation:** 0.3 m
Length: 31.8 m **Width:** 19.5 m**Description**

Ownership: Texas General Land Office**Impacts:** N/A**Predators:** none**Substrate types:** sand and little shell**Summary:** This island lies just south of the two previous islands (614–222J and 614–222K) and east of the channel that parallels Zig-Zag Island. It is rapidly eroding, but does contain areas of halophytes in which laughing gulls nest.**Bird Survey 1997 – 2003**

614-222L	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE							
LAGU	27	31	35	20		18	15
GBTE	4				6		
CATE						56	58
BLSK	4				40		

Nesting/Use History

Laughing gulls have nested in small numbers almost every year since 1987. Tri-colored herons used the vegetation twice. Gull-billed terns and skimmers have nested on the bare sand twice, once in 1997 and again in 2001.

Discussion and Management Recommendations

Efforts to enhance colonial waterbird nesting habitat will have greater results on other islands. Therefore, the recommendation is to let this island erode away.

Island 614–222M

Old Name: (89) SC11A

Location

Latitude: N/A **Longitude:** N/A **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and silt

Summary: This very small island is located just south of the preceding one (614–222L) and east of the channel that parallels Zig-Zag Island. Low stands of halophytes were present in earlier years.

Bird Survey 1997 – 2003

614-222M	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE		submerged	submerged	submerged	submerged	submerged	submerged
LAGU							

Nesting/Use History

Laughing gulls nested here in 1987 and again in 1990. Three pair of tri-colored herons joined them in 1990. In 1998, the island was submerged and has remained so ever since.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614–222N

Old Name: (90) SC12

Location

Latitude: 27.632841 **Longitude:** -97.268047 **Area:** .2341 ha **Elevation:** 0.3 m
Length: 71 m **Width:** 58 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: This small island is located near the southern tip of Zig-Zag Island, beside the channel that parallels it. Halophytic vegetation is on the western rim and in the center of the island.

Bird Survey 1997 – 2003

614-222N	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
TRHE	1						
LAGU	71	70	28	42	35	64	112
CATE					8		
FOTE	2						
BLSK				6	8		2

Nesting/Use History

Occupation of this island began in 1987 with the presence of 42 laughing gulls. They have continued to nest since then. Terns and skimmers nested later. Tri-colored herons tried nesting during several of the early years, but not after 1997.

Discussion and Management Recommendations

Recommendations:

1. Install signs prohibiting human activity during nesting season.

Island 614-2220

Old Name: (91) SC13

Location

Latitude: 27.628942 **Longitude:** -97.270178 **Area:** .9123 ha **Elevation:** 0.4 m
Length: 174 m **Width:** 112 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand and little shell

Summary: This is another island along the channel that parallels Zig-Zag Island. It lies north of a junction with a side channel extending east and west. The composition of the island is similar to the others in this area, but not as badly eroded and the halophytes are denser.

Bird Survey 1997 – 2003

614-2220	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE							
TRHE		1					
REEG		1					
LAGU	140	161	175	140	56	175	218
CATE		1					
ROYT							10
BLSK					10		

Nesting/Use History

This is another laughing gull island. They have nested in fair numbers since 1987. The only other birds to appear more than once were tri-colored herons.

Discussion and Management Recommendations

Efforts to enhance colonial waterbird nesting habitat here will not be cost effective.

Recommendations:

1. Install signs prohibiting human activity during nesting season until the island erodes away.

Island 614–222P

Old Name: (92) SC14

Location

Latitude: 27.626495 **Longitude:** -97.271583 **Area:** .4737 ha **Elevation:** 0.6 m
Length: 76.6 m **Width:** 105.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: N/A

Substrate types: sand and shell

Summary: This site was formed from three deposits made between two short channels and lies south of the previous island (614–222O). The central deposit is the largest and contains more halophytes than the others. During high tide the other two islands are often inundated.

Bird Survey 1997 – 2003

614-222P	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE							
TRHE							
LAGU	20		46		175	34	
GBTE	10						
FOTE							
BLSK	4						

Nesting/Use History

Laughing gulls are the dominant nesters. A great blue heron built a nest during one year and tri-colored herons were present during four years. Forster’s and gull-billed terns have nested here in good numbers on several occasions. Their absence the past six years could be due to high water.

Discussion and Management Recommendations

If managed, it should be for terns and skimmers with the following actions.

1. Remove some of the vegetation.
2. Install signs prohibiting human activity during nesting season.

Island 614–222Q

Old Name: (93) SCW15

Location

Latitude: 27.624907 **Longitude:** -97.272794 **Area:** .7557 ha **Elevation:** 0.6 m
Length: 166 m **Width:** 62.6 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand and shell

Summary: This long island is located south of the previous island (614–222P) and formed as a result of several deposits. There is a stand of prickly pear mixed with unknown grass on the crown. The rest of the vegetation consists of saltgrass, pigweed, wolfberry, sea purslane and other halophytes.

Bird Survey 1997 – 2003

614-222Q	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	6	7	1N	1	1		
SNEG							
TRHE	9	3	2	1	1		4
REEG	10	5	2			1	
LAGU	112	161	147	182	98	96	120
GBTE							
CATE							
FOTE							
BLSK		2/1P					

Nesting/Use History

Since 1986, this island has resisted erosion better than others in this area. The prickly pear and grasses have provided a substrate for heron and egret nests. Most birds nested here between 1996 and 2003. The terns and skimmers used the small amount of bare ground for a few years.

Discussion and Management Recommendations

Since this island has a better foundation than others in the area and attracts various species, it should be managed. Recommendations:

1. Deposition of good dredge material would be desirable.

2. Establish and propagate sturdier plants.
3. Install signs prohibiting human activity during nesting season.
4. Remove any fire ants present.

Island 614–222R

Old Name: (94) SC15A

Location

Latitude: N/A **Longitude:** N/A **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and a little shell

Summary: This site is located near the preceding island (614–222Q) and consists of the remains of a small strip of sand that has been flooded.

Bird Survey 1997 – 2003

614-222R	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
LAGU	21		submerged	submerged	submerged	submerged
BLSK	2					

Nesting/Use History

In the years that this site was exposed, a few skimmers visited this island.

Discussion and Management Recommendations

No management is required. Recommendations:

1. If deposition is placed on the adjacent island, this site should be included in the formation of the new island.

Island 614-222S

Old Name: (95) SC16

Location

Latitude: 27.625294 **Longitude:** -97.276572 **Area:** .4191 ha **Elevation:** 0.5 m
Length: 69.2 m **Width:** 68 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This low island lies west of the channel terminus associated with the preceding islands. The island is fairly round with a lower center than the perimeter. The perimeter contains most of the vegetation including sea purslane, glasswort, saltwort, shoregrass and wolfberry. Much of the central portion is bare with scattered halophytes.

Bird Survey 1997 – 2003

614-222S	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE							
TRHE		2		1	1		
REEG	1						
LAGU	182	112		105	69	140	
GBTE	4			28	28	24	
CATE	28					1	
FOTE					46		
BLSK				2	25	34	

Nesting/Use History

The single great blue heron counted in 1987 was probably a loafer, as none have been counted since. Tri-colored herons have nested often and reddish egrets at least twice. During the period 1993–97, there were between 28 and 90 pair of Caspian terns nesting here. Gull-billed terns have been counted seven times, skimmers four times and Forster's terns twice. Gulls were present almost every year since 1987. The absence of birds during 2003 cannot be explained.

Discussion and Management Recommendations

Recommendations:

1. Manage this island for terns.

2. Keep the central area mostly bare.
3. Deposition of good material would be desirable.
4. Install signs prohibiting human activity within 100 meters of the island between April and October.

Island 614–222T

Old Name: (96) SC17

Location

Latitude: 27.62362 **Longitude:** -97.27478 **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: The remains of this island can be seen just under the surface of the water at the end of the channel.

Bird Survey 1997 – 2003

614-222T	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	submerged						
SNEG							
TRHE							
LAGU							
GBTE							
CATE							
BLSK							

Nesting/Use History

It appears that a variety of birds nested on this island in early years. However, there was some question concerning which island was being surveyed in this group of ten islands. In 1996, the original island listed as SC17 was flooded.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614-222U

Old Name: (97) SC18

Location

Latitude: 27.621903 **Longitude:** -97.272406 **Area:** 1.6313 ha **Elevation:** 0.8 m
Length: 193.9 m **Width:** 114.2 m

Description

Ownership: Texas General Land Office

Impacts: duck blind remnants

Predators: fire ants

Substrate types: sand and shell

Summary: This is the largest island of this group. It is very low, from 0.15 meters at the southern end to 0.8 meters at the northwestern end. Only 50 percent of the site is vegetated; at the high point there is some sea oxeye, shoregrass and wolfberry that grade into the typical halophytes. The remains of an old duck blind are found at the northwestern corner.

Bird Survey 1997 – 2003

614-222U	1997	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	not surveyed						
TRHE				3		2	
REEG		1	2	1			
LAGU		350	455	371	280	384	450
GBTE		1	12/8P				18
CATE		40	34	84			
ROYT		8		60	100	250	250
SATE							10
BLSK							25

Nesting/Use History

Bird occupation of this island is similar to that of its neighbors - heron and egret species are the same and found in similar numbers. Caspian terns have nested here and royal terns have nested here only in recent years. Laughing gulls have nested here every year since 1986 and their numbers have greatly increased in the last four years.

Discussion and Management Recommendations

This has been a good island for colonial waterbirds. Recommendations:

1. Manage the island for terns with following actions.
2. The deposition of material is desirable.

3. Control vegetation in the bare areas. This might reduce the number of laughing gulls and provide more space for terns and possibly skimmers.
4. Install signs prohibiting human activity during nesting season.

Island 614–222V

Old Name: (98) SC19

Location

Latitude: 27.636881 **Longitude:** -97.271461 **Area:** N/A **Elevation:** 0.3 m

Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and some shell

Summary: This small island is located west of 614–222U. Due to erosion, it is little more than a sand spit with some halophytes on the higher parts.

Bird Survey 1997 – 2003

614-222V	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
LAGU			submerged		70/56P	submerged	submerged
CATE					1		

Nesting/Use History

A few laughing gulls and a single pair of Caspian terns attempted to nest here when the island was not flooded.

Discussion and Management Recommendations

Recommendations:

1. Allow the island to erode.

Island 614–222W

Old Name: (99) SC20**Location**

Latitude: 27.636108 **Longitude:** -97.269717 **Area:** N/A **Elevation:** 0.4 m**Length:** N/A **Width:** N/A**Description**

Ownership: Texas General Land Office**Impacts:** N/A**Predators:** none**Substrate types:** sand and shell**Summary:** This is a low, u-shaped island with a patch of halophytes near the north central margin. There is a berm of halophytes extending to the east and west. Most of the island is bare sand.**Bird Survey 1997 – 2003**

614-222W	5/19/97	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
LAGU			35	36	35		
CATE					18	submerged	submerged
FOTE	3						
LETE	14						
BLSK	1	10		21			

Nesting/Use History

A few Caspian, gull-billed and Forster's terns have nested here once in the last 15 years. Skimmers have been counted during five of those years and laughing gulls in all but four.

Discussion and Management Recommendations

This has not been a popular island and due to its poor foundation, it will erode rapidly. The only management appropriate for this island is predicated on the deposition of good material. Recommendations:

1. If the island is rebuilt with good material, it should be managed for terns and skimmers.

Island 614-222X

Old Name: (100) SC21

Location

Latitude: 27.630701 **Longitude:** -97.280883 **Area:** .1410 ha **Elevation:** 0.45 m
Length: 53.7 m **Width:** 40.2 m

Description

Ownership: Texas General Land Office

Impacts: duck blind

Predators: none

Substrate types: coquina reef rock and cobble, sand and shell

Summary: This small, oval island lies just east of a bend in the southern part of the Humble Channel. There is an old duck blind on the northeastern end with a small stand of sea oxeye nearby. The rest of the vegetation is consists of halophytes.

Bird Survey 1997 – 2003

614-222X	1997	5/20/98	5/18/99	5/16/00	2001	5/29/02	5/29/03
GBHE	not surveyed				not surveyed		
TRHE							
LAGU		18	13	36		24	
GBTE							
FOTE		55					
BLSK				3			

Nesting/Use History

This island has been overlooked in seven of the last 15 years. Great blue herons and tri-colored herons nested in the sea oxeye in early years. Forster’s terns nested on the berm, gull-billed terns and skimmers on the bare ground, and gulls in the halophytic vegetation. The absence of birds in 2003 cannot be explained.

Discussion and Management Recommendations

This small island has a better foundation than most in this area and could be enhanced.
 Recommendations:

1. Deposit and enlarge the island with more cobble, good sand and shell to support additional species and increase nesting capacity.
2. Install signs prohibiting human activity during nesting season, regardless of any material deposition.

Island 614–222Y

Old Name: (101) SC22

Location

Latitude: 27.641473 **Longitude:** -97.267731 **Area:** .3252 ha **Elevation:** 1.1 m
Length: 76.6 m **Width:** 63 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: grackles and fire ants

Substrate types: coquina reef rock and cobble, large shell and sand

Summary: This small island is located on the western side of Humble Channel, near the preceding one (614–222X). The island's elevation supports a grove of leadball trees, surrounded by dense prickly pear that grade into a band of sea oxeye. Vegetation on the margins includes sea lavender, sea purslane, glasswort and some cordgrass mixed with prickly pear. There is very little bare ground.

Bird Survey 1997 – 2003

614-222Y	1997	5/20/98	5/18/99	5/16/00	2001	5/29/02	5/29/03
GBHE	not surveyed	1			not surveyed		6
GREG							5
SNEG		3				3	10
LBHE						5	3
REEG		1	1				
CAEG						8	30
LAGU		42	49	26		28	9
GBTE						4	3

Nesting/Use History

This island has been surveyed eight times in the last 15 years. The 2002 and 2003 results are indicative of the potential for this island in its present state. Great-tailed grackles have taken over the leadball trees as their nesting sites and drive away other birds that might nest there. The wading birds that have nested used the sea oxeye and prickly pear as their substrate.

Discussion and Management Recommendations

Because of its foundation and isolation, this could be a good island for herons and egrets. Recommendations:

1. Manage this island for herons and egrets.

2. Remove the grackles and some prickly pear.
3. Deposition and enlargement with good material might also entice terns and skimmers.
4. Install signs prohibiting human activity during nesting season.

Island 614–222Z

Old Name: (102) SC23

Location

Latitude: 27.632031 **Longitude:** -97.276378 **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: The remains of this island are located on the western side of the Humble Channel near the causeway bridge. The white sand substrate emerges during extremely low tides.

Bird Survey 1997 – 2003

614-222Z	1997	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
BLSK	not surveyed	submerged	submerged	submerged	submerged	submerged	submerged

Nesting/Use History

One pair of skimmers nested here in 1987. When the next survey was conducted in 1998, the island was submerged.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614-222AA

Old Name: (103) SC24

Location

Latitude: 27.644906 **Longitude:** -97.263904 **Area:** N/A **Elevation:** 0.0 m

Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: The remains of this small island can be found west of the Humble Channel near the causeway bridge.

Bird Survey 1997 – 2003

614-222AA	1997	5/20/98	5/18/99	5/16/00	5/30/01	5/29/02	5/29/03
BLSK	not surveyed	submerged	submerged	submerged	submerged	submerged	submerged

Nesting/Use History

Ten pair of skimmers were counted here in 1987. The island was submerged when counts resumed in 1998.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614-222BB

Old Name: (104) SC25

Location

Latitude: 27.650056 **Longitude:** -97.266035 **Area:** .1193 ha **Elevation:** 0.2 m
Length: 48.3 m **Width:** 28 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This island is located at the junction of Humble Channel and another channel near the Kennedy Causeway bridge. It is larger than the previous ones and fairly round. Vegetation is halophytic and sparse.

Bird Survey 1997 – 2003

614-222BB	1997	1998	1999	5/16/00	5/30/01	5/29/02	5/29/03
GBHE	not surveyed	not surveyed	not surveyed				
LAGU				28			
FOTE							

Nesting/Use History

This island has been surveyed only five times in the last 15 years. A single great blue heron and ten Forster’s terns have been counted. The other nesters have been laughing gulls.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614-222CC

Old Name: (105) SC26

Location

Latitude: 27.648425 **Longitude:** -97.261869 **Area:** N/A **Elevation:** 0.0 m

Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and little shell

Summary: This site is located due south of the bridge over the Humble Channel. The island once contained a small amount of halophytic vegetation, but is now submerged.

Bird Survey 1997 – 2003

614-222CC	1997	5/20/98	5/18/99	5/16/00	2001	5/29/02	5/29/03
LAGU	not surveyed	28	submerged	submerged	not surveyed	submerged	submerged
BLSK		2					

Nesting/Use History

The only birds counted were two pair of laughing gulls in 1990, and gulls and skimmers in 1998. The island is now submerged.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614–221A

Old Name: (117) Coyote

Location

Latitude: 27.677822 **Longitude:** -97.239396 **Area:** 58.3167 ha **Elevation:** 4.5 m
Length: 1230.7 m **Width:** 724.2 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes, dogs, people and fire ants

Substrate types: sand, large shell and silt

Summary: This is a large, natural marsh island with placed dredge material from a channel constructed for seaplanes. Sometime later, a dike was built around the northern edge and more material was deposited. This island has encompassed a smaller island through accretion, erosion and deposition at the southern end. It is separated from the main island by a large bare area and on the eastern side by a small channel lined with black mangrove. Vegetation on the island is diverse and includes almost all the types of plants on dredge material islands. The interior of the very high diked area is filled with hundreds of false willow trees. Several salt cedar trees are growing around a deep hole on the southwestern corner of the interior. The southwestern corner and the southern slopes of the dike contain plants characteristic of the mid-grass prairie. On the summit of the dike there is necklace pod, sunflower, croton, widow’s tear, pigeonberry, false ragweed and false willow. The slopes contain dense stands of cordgrass. On the lower slopes, where the island levels to the large bare area there are several low mesquite trees, scattered false willow and clumps of prickly pear. Sea oxeye, saltgrass, pigweed and wolfberry grade into halophytes along most of the island's margin. The southern projection of the island contains two mesquite and two hackberry trees surrounded by mid-grass prairie vegetation. On the western side, among the halophytes, there are stands of cordgrass and several black mangroves.

Bird Survey 1997 – 2003

614-221A	1997	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	not surveyed	6	20	2	2	3	4
GREG							
SNEG							
TRHE							
REEG							
CAEG							
BCNH			4				
LAGU							
LETE						19	

614-221A	1997	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
BLSK							

Nesting/Use History

The diverse number of species nesting on this island date to 1976 and 1978 when all were present. The only ones that consistently nested after 1979 were great blue herons high in the trees. Black-crowned night-herons and least terns have been counted twice in different years. Nests of as many as 260 cattle egrets, 60 great blue herons, 34 night-herons, 22 black skimmers, 14 great egrets, 4 tri-colored herons, 3 laughing gulls, 2 snowy egrets, one reddish egret and one least tern were counted during those early years. Every survey from 1980 forward observed predator tracks on the island. Herons and egrets began to appear on the nearby chain of islands east of the GIWW and just north of the Kennedy Causeway in 1980.

Discussion and Management Recommendations

This island is too large to efficiently manage. However, the proper substrate, vegetation and nearby feeding areas are present and attractive to all types of nesting colonial waterbirds. Therefore, actions are recommended to entice the return of bird species that nested here in the late 1970's. Predator control is key to increasing nesting success. This island has also been a good stopover for spring and fall migrants. Recommendations:

1. Remove predators and monitor yearly for predation.
2. If predators are removed, install signs prohibiting human activity and domestic dogs from the island - especially during the nesting season.

Island 614–221B

Old Name: (118) NC15

Location

Latitude: 27.685633 **Longitude:** -97.238718 **Area:** 22.2065 ha **Elevation:** 1.5 m
Length: 2099.3 m **Width:** 196.4 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: coyotes, dogs, people and fire ants

Substrate types: large shell, sand and silt

Summary: This long, narrow island stretches from the entrance of the GIWW into Corpus Christi Bay to Coyote Island, along the southern margin of Corpus Christi Bay. The eastern half is a long, narrow shell and sand spit. Little vegetation is found and consists of sunflower, old man's beard, camphor daisy and pigweed on the southern side of the shell and sand ridge. Along the southern margin are scattered patches of cordgrass and several young black mangroves. Terns and skimmers nest here and on the west end. There is a large sand and algal flat on the southeastern end. The central portion of the island is enlarged with a long southward extension. There are several salt cedar trees near the northern margin in which great blue herons have built platforms. The rest of the vegetation here is cord and other grasses, prickly pear, sea lavender, wolfberry, sea purslane and other halophytes. The western end of this long island has been separated from the main island by a channel of flowing water.

Bird Survey 1997 – 2003

614-221B	5/20/97	5/18/98	5/21/99	5/17/00	5/31/01	5/30/02	5/30/03
GBHE	1				1		
TRHE							
REEG							
BCNH							
WFIB							
LAGU	7				112	77	
GBTE	2	18	14	35	21	20	
ROYT			28				
FOTE				2			
LETE	4	50	36	42		7	
SOTE	1						
BLSK	12	180	132	160	93	43	

Nesting/Use History

The earliest records (1976) list 210 laughing gulls, 30 white-faced ibis, 8 great blue herons, 5 tri-colored herons and 3 reddish egrets nesting on the central part of the island; 91 pair of skimmers and 14 pair of least terns nesting on the shell and sand ridge. There are no records of herons, egrets or gulls on this part of the island for the next six years. Gull-billed terns, least terns and skimmers did use the high shell ridges. In spite of people, coyotes and raccoons, the terns and a few great blue herons continued to use this island. Royal and sooty terns have appeared only once. The lack of birds in 2003 was probably due to human disturbance.

Discussion and Management Recommendations

This is a very good island, especially for the terns and skimmers. It could be enhanced if the impacts from coyotes, raccoons and people were reduced. Coyotes and raccoons are probably living on the adjacent Coyote Island. Fishermen and their guides are known to walk through nesting terns and skimmers to reach the southern side. This island has also been a good stopover for spring and fall migrants. Recommendations:

1. Control predators.
2. Install signs 50 meters apart along the length of the northern side prohibiting human activity.
3. Remove excess vegetation in the areas where the terns and skimmers nest.

Island 614–221C

Old Name: (119) NC16

Location

Latitude: 27.675633 **Longitude:** -97.253886 **Area:** 4.5229 ha **Elevation:** 0.3 m
Length: 585 m **Width:** 107.3 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand, shell and silt

Summary: This long, low island is located on the western end of a group of larger islands southwest of Coyote Island. The material for its construction was evidently taken from nearby channels. Some material could have come from the channel to the south that extends to the GIWW. Shallow channels divide this island in various places. The margins consist of halophytes, scattered pigweed, shoalgrass debris and shell that form a marginal berm. A stand of black mangrove is found on the northeastern corner and scattered individuals are around the rest of the margin with fewer at the southern end. The mangroves are recent additions to these islands. The center of the island consists of hardened sand and silt. For counting purposes, the small island that lies to the east is included with this one.

Bird Survey 1997 – 2001

614-221C	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
LAGU	66	121	126	175	245	280	450
GBTE		12					
SATE							2
FOTE	68	18	6		12		
LETE							
BLSK	10	13	14	2	8	8	15

Nesting/Use History

Earliest records (1980) show 55 pair of black skimmers and 36 pair of least terns nesting on the island's northern bare ground. A pair of gull-billed terns joined the group in 1981. There are no other separate records for this island until 1990 when all the listed species in the table (above) were nesting. The exception is a pair of Sandwich terns that were present during the 1996 nesting season. Skimmers on the soft sand, Forster's terns on the berm and laughing gulls in the halophytes have been the most persistent nesters. Laughing gulls have increased while the others have decreased.

Discussion and Management Recommendations

Recommendations:

1. In its present state, the island can only be managed for terns, skimmers and laughing gulls - preferably not the latter.
2. An increase in elevation and establishment of native trees and shrubs is desirable to enhance the site for heron and egret management.
3. Install signs prohibiting human activity during nesting season.

Island 614–221D

Old Name: (120) NC17

Location

Latitude: 27.674303 **Longitude:** -97.251415 **Area:** 2.9946 ha **Elevation:** 0.45 m
Length: 307.5 m **Width:** 133.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand, shell and silt

Summary: This relatively large island is located just southwest of Coyote Island and east of the preceding one (614–221C). The eastern side and southern end are bare with a narrow outer band of halophytes forming a berm. There is a long, narrow, curved sand and shell projection from the northern tip with several mangroves. The central core of the island contains a large patch of prickly pear mixed with false ragweed, pigweed and shoregrass. A wide area of sea oxeye surrounds this central patch and it grades into wolfberry and halophytes. A retama tree is found on the southwest corner of the higher ground. On the extreme southwest corner is a stand of cordgrass.

Bird Survey 1997 – 2003

614-221D	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	4		6	5	7	5	27
GREG			1				
SNEG							
TRHE			1		4		
REEG	2				1		
ROSP							
LAGU	147		210	427	630	490	900
GBTE							
FOTE							
LETE							
BLSK							

Nesting/Use History

Records from 1990 indicate that this has been a very good island for a variety of species, especially laughing gulls. Few herons, egrets and spoonbills have nested during the past 12 years in and on the vegetation of the central core. The terns and skimmers have nested once or twice, when they were not nesting on the previous island. Laughing gulls have averaged

200 pair annually during the twelve years of observations. The reason for the absence of birds in 1998 is unknown.

Discussion and Management Recommendations

This is a good island for larger birds and should be managed for them. This entire area is good for fishing and probably duck hunting in the winter. Recommendations:

1. Remove laughing gulls.
2. Deposition of material that will join this island with the preceding one (614–221C) would form a single, larger island better suited for waterbird management. The western part would be for terns and skimmers and the eastern and central part for herons, egrets and others.
3. Install signs to prohibit human activity within 100 meters from the shore. (Any disturbance would activate laughing gulls and cause them to destroy eggs and the young of their neighbors.)
4. The threat of predators from Coyote Island should be monitored.

Island 614–221E

Old Name: (121) NC18

Location

Latitude: 27.6722 **Longitude:** -97.250058 **Area:** 1.8179 ha **Elevation:** 0.65 m
Length: 199 m **Width:** 156 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: much shell and some sand

Summary: This site is located just to the east of the preceding island (614–221D) and southwest of Coyote Island. It consists of two islands separated by a narrow channel. The eastern island is elongated with a central bare area that extends from near the northern shore to the southern margin. There are black mangroves along the southeastern shore and scattered in the bare area. The western shore is lined with hundreds of mangroves, extending onto and covering a small finger that extends into the channel between the islands. Internal to the mangroves is an area of sea oxeye with scattered patches of pigweed on the north-central part. This grades into halophytes around the bare area.

The western island is similar to the eastern one, but rounded in shape. A large central bare area is surrounded by vegetation similar to that on the eastern island. The eastern and western margins are covered with mangroves. There is a stand of sea oxeye on the northeastern corner. Halophytic vegetation covers 70 percent of these two islands. Although some mangroves are 2 meters tall, there are no nesting platforms in them. However, black-crowned night-herons and snowy egrets use them as roosting areas.

Bird Survey 1997 – 2003

614-221E	5/20/97	5/18/98	5/21/99	6/8/00	5/31/01	5/30/02	5/30/03
GBHE		6	2			8	
GREG				1			
SNEG						4	4
LBHE							1
TRHE	5		15	15	12	20	28
REEG	1	1		6	2	11	10
LAGU	161	70	126	203	385	350	630
ROYT							

Nesting/Use History

The 1990 records list 204 pair of laughing gulls, 3 pair of tri-colored herons and 2 pair of royal terns nesting here. Great blue herons and reddish egrets have nested on the ground several years, and a pair of great egrets was observed in 2000. Laughing gulls have been too abundant every year.

Discussion and Management Recommendations

The discussion and recommendations for the other islands in this group are applicable to this one. The substrate is substantial, providing a good foundation. It is an active island, devoid of predators and isolated from most human activity (except boaters and fishermen). The mangroves, which are susceptible to freeze, could be a detriment unless they grow large enough to support nesting platforms. It could have the proper vegetation and sandy areas attractive to every local nesting colonial waterbird. Recommendations:

1. Deposition of material between the two islands would create a single, ideal sized island.
2. Install warning signs to prohibit human activity within 100 meters during nesting season.

Island 614–221F

Old Name: (122) NC19

Location

Latitude: 27.670612 **Longitude:** -97.248459 **Area:** 1.8136 ha **Elevation:** 0.75 m
Length: 202.2 m **Width:** 162.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This crescent-shaped island is the easternmost one in the group southwest of Coyote Island. The interior of the crescent faces the south and contains several patches of bare ground. The southern part of the eastern arm is covered with halophytes that grade into a large stand of prickly pear along the northern high ground of the island. There are patches of pigweed here, but very little sea oxeye. The vegetation on the western arm of the crescent is similar to the eastern arm. There is a small black mangrove on its inner shore and a patch of cordgrass at its southern tip.

Bird Survey 1997 – 2003

614-221F	5/20/97	5/18/98	5/21/99	6/8/00	5/31/01	5/30/02	5/30/03
GBHE							3
TRHE					3		1
REEG							
LAGU	77	6	259	262	420	245	450
GBTE							
BLSK							

Nesting/Use History

Records dating to 1990 indicate a very attractive island for laughing gulls. Their numbers have been very high during most years, especially in the last three years. The gull-billed terns and black skimmers nested only in 1990. As many as six great blue herons nested on the prickly pear in four out of the first five years. Reddish egrets built platforms on the cacti in 1991 and tri-colored herons were present in 1994, 2001 and 2003. The low number of gulls in 1998 is mirrored by the low numbers of nesting birds on the other islands in this group that year. This could be caused by predation or human activity.

Discussion and Management Recommendations

This is another island in the group that could be enhanced. Recommendations:

1. Deposition of good material in the center of the crescent would be desirable.
2. Plant trees and shrubs if the elevation is increased.
3. Monitor the island for predators.
4. Retard excessive spread of prickly pear.
5. Install signs prohibiting human activity during the nesting season.

Island 614–221G

Old Name: (123) NC20

Location

Latitude: 27.668681 **Longitude:** -97.251851 **Area:** .2319 ha **Elevation:** 0.4 m
Length: 92 m **Width:** 39.4 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: These two small islands lie south of the previous group and are connected at their centers. They are isolated and difficult to access because of the surrounding shallow water. Vegetation is primarily halophytic with some pigweed and sea oxeye.

Bird Survey 1997 – 2003

614-221G	5/20/97	5/18/98	5/21/99	6/8/00	5/31/01	5/30/02	5/30/03
TRHE				1			
REEG			1				
LAGU	8		5	32	60	56	27

Nesting/Use History

The table above shows most of island’s nesting history. Laughing gulls appeared in 1993, a single tri-colored heron in 1994, and the reddish egret in 1999. Like others in the group, 1998 was poor year for nesting on this island.

Discussion and Management Recommendations

Recommendations:

1. Deposition of material would enhance management options.
2. Install signs prohibiting human activity during nesting season.

Island 614–221H

Old Name: (124) NC21

Location

Latitude: 27.663875 **Longitude:** -97.248604 **Area:** .7111 ha **Elevation:** 0.3 m
Length: 118.2 m **Width:** 99 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This site is comprised of two islands adjacent to a side channel connecting the GIWW and the Humble Channel. Both islands are low, small and eroding. Most of the vegetation consists of halophytes around the margins and there are numerous bare areas.

Bird Survey 1997 – 2003

614-221H	5/20/97	5/18/98	5/21/99	6/8/00	5/31/01	5/30/02	5/30/03
GBHE			1				
TRHE		1	1				
ROYT							180
LAGU	140	13	105	140	238	168	158

Nesting/Use History

This is another laughing gull site. Since 1990, the average number of gull pairs has exceeded 150. Great blue herons nested in 1999 and tri-colored herons were present in five different years. The royal terns nested here for the first time in 2003. Again, 1998 marked a significant decline in nesting activity.

Discussion and Management Recommendations

Recommendations:

1. Deposition of material between the two islands would create a good island for colonial waterbirds. Increasing the elevation would also be desirable.
2. If additional material is not deposited, install signs prohibiting human activity during nesting season and leave this site to the gulls.

Island 614–221I**Old Name:** (125) NC22**Location**

Latitude: 27.662973 **Longitude:** -97.246618 **Area:** 1.2492 ha **Elevation:** 0.45 m
Length: 180.2 m **Width:** 90 m

Description**Ownership:** Texas General Land Office**Impacts:** N/A**Predators:** none**Substrate types:** sand and shell

Summary: This island is located east of the two previous islands (614–221G and 614–221H) on the same silted-in channel. It has evolved into more of a crescent shape. On the north end are scattered clumps of prickly pear. The rest of the vegetation consists of halophytes around numerous bare areas.

Bird Survey 1997 - 2003

614-221I	5/20/97	5/18/98	5/21/99	6/8/00	5/31/01	5/30/02	5/30/03
GBHE							
SNEG							
TRHE	1						
REEG			1				
LAGU	98	35	161	154	154	238	324
CATE	40		1	12	1	1	
ROYT						26	60
SATE							28
BLSK							

Nesting/Use History

Beginning in 1991, Caspian terns and laughing gulls have been the dominant nesters. Terns nested in all but three years in fair numbers and in 1996, 78 terns were observed. Great blue herons have been the most persistent nesters amongst herons and egrets with two pair nesting on four different occasions. A single pair of skimmers was seen in 1992, 1994 and 1995. No birds nested in 1993 and only 35 pair of gulls were present in 1998.

Discussion and Management Recommendations

The repeated presence of the Caspian terns makes this island more important than others in this area. Recommendations:

1. The habitat should be improved for the terns and skimmers and may require the removal of some of the vegetation, especially the prickly pear. The sand and shell could be “freshened” with the addition of new sand or turning over the sand that is there.
2. The site should be monitored each year.
3. Install signs prohibiting human activity during nesting season.

Island 614–221J

Old Name: (126) NC23

Location

Latitude: 27.658038 **Longitude:** -97.245407 **Area:** .2753 ha **Elevation:** 0.3 m
Length: 74 m **Width:** 39 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: N/A

Substrate types: sand and shell

Summary: This site consists of three islands that lie east of the previous islands along the same channel. The easternmost island is submerged and the central one is only 0.15 meters high consisting of mostly bare sand and halophytes. The western island contains cordgrass on the eastern side and three large clumps of black mangrove. The rest of the island is more or less barren with halophytes around the margins.

Bird Survey 1997 – 2003

614-221J	5/20/97	5/18/98	5/21/99	6/8/00	5/31/01	5/30/02	5/30/30
TRHE				1	1	2	5
SNEG							1
REEG						2	
LAGU	4	20	11	8	14	6	31
CATE				3	10	26	60
ROYT							
SATE							
FOTE					12		
BLSK							1

Nesting/Use History

A variety of birds in small numbers have attempted to nest here, the more important ones being the Caspian and Forster's terns.

Discussion and Management Recommendations

Recommendations:

1. Install signs prohibiting human activity during nesting season. They will not be needed for long if the rate of erosion continues.

Island 614–221K

Old Name: (127) NC24

Location

Latitude: 27.653489 **Longitude:** 97.242015 **Area:** 1.4295 ha **Elevation:** 1.0 m
Length: 184.1 m **Width:** 124.m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand, shell and mud

Summary: This larger island lies north of the silted-in channel and southeast of the previous islands. The central crown contains a large patch of saltgrass interspersed with pigweed and sea oxeye. Surrounding the crown are shoregrass and halophytes. On the north side is a bare area containing a marginal area of pigweed, wolfberry and halophytes. The surface of the bare area is mud rather than sand. The extension to the southeast contains two small clumps of black mangrove. The southwest extension contains more mangroves. The two small adjacent islands are practically covered with black mangroves.

Bird Survey 1997 – 2003

614-221K	1997	5/18/98	5/21/99	6/8/00	5/31/01	5/30/02	5/30/03
GBHE	not surveyed						
TRHE		12	4	9	2	1	7
REEG			1				1
LAGU		265	376	265	518	371	495
GBTE							
FOTE							

Nesting/Use History

The first records (1992) show 224 laughing gulls, 10 Forster's terns, 4 gull-billed terns, one great blue heron and one tri-colored heron nesting on this island. Reddish egrets arrived in 1999. The tri-colored herons and the laughing gulls have been consistent users of the island.

Discussion and Management Recommendations

This is a fairly good island that could be improved for terns and skimmers.

Recommendations:

1. Deposition of good material onto the bare mud area would be desirable. Enlargement and increased elevation could improve the island for larger birds.

2. Establish additional trees and shrubs.
3. Install signs prohibiting human activity during nesting season.

Island 614–221L

Old Name: (128) NC25

Location

Latitude: 27.654219 **Longitude:** -97.247829 **Area:** N/A **Elevation:** 0.0 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This site was south of the channel and east of Tern Island. It consisted of an elongated island of sand and some shell with some halophytes. It has eroded and is presently underwater.

Bird Survey 1997 – 2003

614-221L	1997	5/18/98	5/21/99	2000	5/31/01	5/30/02	5/30/03
LAGU	not surveyed	32	submerged	not surveyed	submerged	submerged	submerged

Nesting/Use History

Earliest records (1994) list 14 laughing gulls nesting on the halophytes. It was not surveyed during the period 1995–97 and 2000.

Discussion and Management Recommendations

Recommendations:

1. Leave the area alone and let it grow seagrass.

Island 614–221M

Old Name: (129) NC26

Location

Latitude: 27.646279 **Longitude:** -97.243032 **Area:** .2021 ha **Elevation:** 0.3 m
Length: 87.1 m **Width:** 23.3 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This is a small, elongated island with a central bare area that extends south and is often inundated with water. Vegetation consists of sea oxeye, pigweed, sea lavender, wolfberry and halophytes.

Bird Survey 1997 - 2003

614-221M	1997	5/18/98	5/21/99	2000	5/31/01	5/30/02	5/30/03
LAGU	not surveyed			not surveyed	105	52	99
FOTE							1
BLSK					17		

Nesting/Use History

Skimmers have been recorded twice, in 1994 and again in 2001. Laughing gulls nested in 1994, and have also been using the island in the last three years. This island is often nearly submerged and will be completely so in the near future. It is also littered with trash.

Discussion and Management Recommendations

Recommendations:

1. Allow the island to erode unless a good foundation can be provided to build a much higher and larger island.

Island 614–221N

Old Name: (130) NC27

Location

Latitude: 27.646751 **Longitude:** -97.247732 **Area:** N/A **Elevation:** 0.3 m
Length: N/A **Width:** N/A

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This small, oval shaped island is located north of a boat canal that parallels the Kennedy Causeway. It has a central core of pigweed surrounded by a ring of halophytes. Around the halophytes is a larger ring of sand, most of which is underwater.

Bird Survey 1997 – 2003

614-221N	1997	5/18/98	5/21/99	2000	5/31/01	5/30/02	5/30/03
LAGU	not surveyed		submerged	not surveyed	submerged	submerged	submerged
FOTE		16					
LETE		1					
BLSK							

Nesting/Use History

Six laughing gulls nested in 1992, but none have done so since then. In 1994, 34 Forster's terns, 31 pair of skimmers and 5 least terns nested on the sand. The Forster's and least terns appeared again in 1998.

Discussion and Management Recommendations

Recommendations:

1. Allow the island to be replaced by seagrass.

Island 614–2210

Old Name: (131) NC29

Location

Latitude: 27.663059 **Longitude:** -97.254516 **Area:** .6083 ha **Elevation:** 0.75 m
Length: 111 m **Width:** 78.2 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand and shell

Summary: This site consists of three islands that lie east of the Humble Channel and north of the Kennedy Causeway. The southern island is the largest and highest and an east-west ditch runs through its crown. The crown contains a good growth of prickly pear surrounded by saltgrass, sea oxeye, pigweed and wolfberry. These grade into the halophytes that line the numerous bare areas that make up the rest of the island. The other two islands are very small and low. Each contains a crown of halophytes surrounded by bare sand.

Bird Survey 1997 – 2003

614-2210	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	3	5	1	1	3		3
SNEG						1	2
TRHE	1	8	10	5	4	5	3
REEG			1			1	3
LAGU	161	210	150	266	168	154	252
CATE			32		2		
ROYT	1			130			
BLSK				3	2		

Nesting/Use History

The earliest record for this island is 1986, when 60 laughing gulls, 28 Caspian terns, 4 tri-colored herons and one reddish egret nested here. The next counts were in 1990 and the same species were present. In 1993, two great blue herons made platforms on the prickly pear and have nested there ever since. Caspian and royal terns have had some success on the bare ground in 1999 and 2000. Laughing gulls have been persistent nesters on this as well as most islands in the area.

Discussion and Management Recommendations

These three islands could be developed into one very good one. It would be relatively isolated from boaters and most fishermen and has no predators. It is being used by a variety of species. Recommendations:

1. Deposition of good material that will not wash away is desirable.
2. Planting additional vegetation including trees and shrubs would be desirable.
3. Management in its present condition includes removal of some halophytes in the bare areas to provide a larger nesting area for the terns and skimmers. This would also eliminate some of the laughing gulls.

Island 614–221P

Old Name: (132) NC30

Location

Latitude: 27.670441 **Longitude:** -97.258343 **Area:** .8583 ha **Elevation:** 0.9 m
Length: 128.1 m **Width:** 84.8 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand and shell

Summary: This nearly round island slopes upward from the south to the crown near the north end that contains a good growth of cordgrass and sunflower with scattered pigweed. Halophytes cover margins of a central bare area. There are two clumps of young black mangrove on the southern end of the island.

Bird Survey 1997 – 2003

614-221P	1997	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE	not surveyed	2	1				1
TRHE							
REEG							
LAGU		77	140	56	210	98	450
CATE			4				
GBTE							

Nesting/Use History

The first individual records for this island listed 304 laughing gulls, 6 great blue herons, one tri-colored heron and one reddish egret. A single pair of gull-billed terns nested the next year and four pair of Caspian terns nested in 1999.

Discussion and Management Recommendations

The vegetation on this island is low and thick, which is not good for larger birds but ideal for laughing gulls. The bare areas are often inundated from the south with water and silt. This packs the material in the bare areas and keeps terns and skimmers from nesting there. This could be a very good island for colonial waterbirds. Recommendations:

1. Burn the present vegetation and plant trees, shrubs, sea oxeye or other tolerant, tall perennials.

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2. The southern end could be sealed and the bare area freshened with good clean sand and shell for the terns and skimmers.

Island 614–221Q

Old Name: (133) NC31

Location

Latitude: 27.668252 **Longitude:** -97.259458 **Area:** .1085 ha **Elevation:** 0.45 m
Length: 46.6 m **Width:** 28.6 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This small, comma-shaped island lies west of the Humble Channel and north of the Kennedy Causeway. The vegetation consists of primarily halophytes with some pigweed and wolfberry. Most of the bare sand areas are subject to flooding at high tide.

Bird Survey 1997 – 2003

614-221Q	1997	1998	5/18/98	5/21/99	5/31/01	5/30/02	5/30/03
LAGU	not surveyed	not surveyed	21	28		27	43

Nesting/Use History

This island is often overlooked during counts. Laughing gulls are the only birds that have been recorded in 1993, 1998, 1999, 2002 and 2003.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614–221R

Old Name: (134) NC32

Location

Latitude: 27.660484 **Longitude:** -97.260572 **Area:** .2926 ha **Elevation:** 0.45 m
Length: 99 m **Width:** 42.6 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: none

Substrate types: sand and shell

Summary: This small island is located west of the Humble Channel near the north side of the Kennedy Causeway. It is rapidly eroding. The high ground on the northwest corner is covered with halophytes, mostly sea lavender. It is margined with bare sand areas that have been used by terns and skimmers.

Bird Survey 1997 – 2003

614-221R	5/20/97	5/18/98	5/21/99	6/8/00	5/31/01	5/30/02	5/30/03
TRHE							
LAGU							
FOTE	18						
LETE				1			
BLSK	20					3	

Nesting/Use History

Earliest records (1990) indicate 52 laughing gulls, one tri-colored heron and one skimmer nesting here. The only other pairs of birds were those in 1997 and 2000 and 2002.

Discussion and Management Recommendations

No actions are recommended for this site.

Island 614–221S

Old Name: (135) Tern Island

Location

Latitude: 27.657695 **Longitude:** -97.250979 **Area:** 1.0143 ha **Elevation:** 1.2 m
Length: 136 m **Width:** 89.6 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: sand, shell and silt

Summary: This island was named for the birds that have consistently nested here in great numbers. It was created during the construction of a channel leading to an oil platform in the Laguna Madre, just north of the Kennedy Causeway. The channel connects to one that parallels the causeway between the overpass and the Humble Channel Bridge. The island was formed just prior to 1980 when individual records for this part of the Laguna Madre were started. The island is egg-shaped with the point extending north. The crown is located near the center of the broad southern end. There is an extensive bare area covering one third of the island on the northern tip and eastern side. The vegetation is extensive, both in density and variety. On the crown and its slopes are grasses, sunflower, sea oxeye, prickly pear, false ragweed, a retama, two granjeno trees and halophytes. There is another smaller island of sand, halophytes and two black mangroves near the northeastern corner of this island. It is included in counts of Tern Island.

Bird Survey 1997 – 2003

614-221T	5/20/97	5/18/98	5/21/99	5/24/00	5/31/01	5/30/02	5/30/03
GBHE			1	1	1	1	1
GREG		1					
SNEG		2	1				
LBHE							
TRHE	26	14	9	5	22	10	3
REEG	1	8	2	3	2		1
LAGU	315	280	280	420	280	119	288
GBTE							
CATE			1		20		
ROYT	500	170	120	340	800	1200	250
SATE						34	60

Nesting/Use History

In 1980, there were 600 Caspian, 60 royal, 14 Sandwich, 12 reddish egrets, 6 gull-billed terns and 2 laughing gulls on the island during the count period. The vegetation was sparse and the presence of the reddish egrets cannot be explained. They were not present again until 1986 when a single pair nested. In 1986, vegetation was lush enough to support great blue, little blue and tri-colored herons. The Caspian terns were replaced by 260 royal terns and 174 pair of laughing gulls. The greatest variety and numbers of nesting birds occurred in 1990 and 1991. The only birds missing were great egrets and gull-billed terns that nested only once on the island. During these two seasons, 1250 royal terns, 609 laughing gulls, 160 Sandwich terns, 68 tri-colored herons, 46 Caspian terns, 26 reddish egrets, 9 great blue herons, 7 snowy egrets and one little blue heron nested here. These high numbers have slowly decreased as the vegetation increased and became ranker. Recently, volunteers removed some vegetation encroaching onto the bare area. In 2002, this resulted in the presence of 1200 royal and 34 Sandwich terns in the refurbished area.

Discussion and Management Recommendations

This is an excellent island for terns and management must target this suite of species. This should not be too difficult since the island is easily approached and close to management facilities. Recommendations:

1. Rank vegetation on the crown and slopes should be removed; burning would be the best method. Some of the halophytes could be removed with chemicals or by tilling. Bare ground could be tilled and freshened in March, shortly before the tern nesting season. This would probably force the herons and egrets to find another location for nesting. The only loss would be the tri-colored herons. Natural re-growth of the vegetation would probably bring them back in time.

Island 614–190

Old Name: 614–190 GIWW Marker 51 Spoil

Location

Latitude: 27.86 **Longitude:** -97.15 **Area:** 6.9659 ha **Elevation:** 1.5 m
Length: 378.6 m **Width:** 235.7 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal.

Predators: none evidenced

Substrate types: mud and sand

Summary: This dredge material island is located east of the GIWW and north of the junction of the Intracoastal and Sun Oil Channel. Smooth cordgrass, halophytes and black mangrove occur along the northeastern, eastern and southeastern shorelines. The island center features grasses, prickly pear, Spanish dagger and Tamaulipan thorn scrub.

Bird Survey 1997 – 2003

614-190	1997	1998	1999	2000	2001	2002	2003
GBHE							
GBTE							
BLSK							

Nesting/Use History

The island is used by pelicans, cormorants, wading birds, gull-billed and Forster’s terns, shorebirds, clapper rails, ospreys and peregrine falcons. Colonial waterbirds have not nested here since 1986.

Discussion and Management Recommendations

Recommendations:

1. Deposition to enhance habitat for colonial waterbirds is desirable. New soft surface materials would benefit least terns and skimmers.
2. If a dike is required for a portion of the island, it must be excluded from the southeast portion where instead a gradual slope to the shoreline is desirable.
3. Manage for colonial waterbirds once they become established.
4. Introduce Tamaulipan shrubs near the summit for nesting wading birds.
5. Monitor and manage predators if they appear.
6. Posting to prohibit human activity during nesting season will be required.

Island 614–189

Old Name: 614–189 GIWW Marker 55–57 Spoil

Location

Latitude: 27.82 **Longitude:** -97.20 **Area:** 1.0885 ha **Elevation:** 1.5 m
Length: 162.5 m **Width:** 89.7 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is limited.

Predators: none

Substrate types: clay and sand

Summary: This dredge material island is located east of the GIWW immediately south of marker 55. Island features include a low marsh, various halophytes, smooth cordgrass and some black mangroves. It has decreased in size and elevation since deposition.

Bird Survey 1997 – 2003

614-189	1997	1998	1999	2000	2001	2002	2003
GBHE			2				
GBTE							
BLSK							

Nesting/Use History

The island is used mainly by foraging wading birds and shorebirds. Pelicans, cormorants, waterfowl, wading birds, shorebirds, ospreys, and peregrine falcons use the marsh habitat for loafing and feeding.

Discussion and Management Recommendations

Few colonial waterbirds have nested here but deposition can improve chances for breeding colonial waterbirds. Recommendations:

1. Deposition should be placed to form a domed island. Soft surface materials should be placed on the slope to the east for terns and skimmers.
2. Shrubs should be established within the interior (following an appropriate leaching period) as platforms for breeding wading birds.
3. Once nesting waterbird colonies are established, then posting to prohibit human activity during nesting season would be appropriate.
4. Monitor and manage predators if they appear.

Island 614–188A

Old Name: 614–188 Sun Oil Channel Spoil

Location

Latitude: 27.85 **Longitude:** -97.16 **Area:** 1.9671 ha **Elevation:** 1.5 m
Length: 187.5 m **Width:** 155 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal.

Predators: raccoons and fire ants

Substrate types: compact substrate

Summary: This site is a General Land Office–Category 1 island located immediately northwest of Dagger Island in southwest Redfish Bay and west of the junction of the Corpus Christi Ship Channel and the Sun Oil Channel. The island is cone-shaped with grasses and forbs, a few mesquite trees, Tamaulipan shrub and prickly pear near the center. Mangrove and halophytes occur along the margins.

Originally islands 614–188A and 614–188B were reported as one. Island 614–188B is the first island west of the Corpus Christi Ship Channel junction with the Sun Oil Channel and immediately west of island 614–188A - or second in line from Sun Oil Channel.

Bird Survey 1997 – 2003

614-188	1997	1998	1999	2000	2001	2002	2003
GBHE							
LETE							
BLSK							

Nesting/Use History

Colonial waterbirds have not bred here in the past few years.

Discussion and Management Recommendations

Recommendations:

1. Deposition to form a cone-shaped island is desirable.
2. If diked, a gentle slope facing southeast is desirable.
3. Manage soft substrate for terns and skimmers.
4. Manage thorn scrub for waterbirds.
5. Establish thorn scrub near the summit for waterbirds after deposition.

6. Predator management is essential.

Island 614–188B

Old Name: 614–188 Sun Oil Channel Spoil

Location

Latitude: 27.85 **Longitude:** -97.16 **Area:** 3.3574 ha **Elevation:** 1.0 m
Length: 245.8 m **Width:** 224.6 m

Description

Ownership: Texas General Land Office

Impacts: A concrete pad is near the center and a duck blind is located along the northwestern shore. Disturbance is minimal.

Predators: raccoons and fire ants

Substrate types: The island is composed of hard substrate and compact mud substrate.

Summary: This General Land Office–Category 1, dredge material island is located northwest of Dagger Island and west of 614–188A in southwestern Redfish Bay. The southern end is immediately adjacent to the Sun Oil Channel. The island is poorly vegetated with halophytes mainly along the east and northeast shoreline with some cordgrass and black mangroves. Grasses, prickly pear, Spanish dagger and Tamaulipan thorn scrub are found near the center of island.

Nesting/Use History

The island currently does not support breeding colonial waterbirds.

Discussion and Management Recommendations

Recommendations:

1. Deposition is requested to improve suitability for colonial waterbirds. The preferred method is for material to form a cone shape with graduated incline to the southeast.
2. The island should remain a stand-alone and not be connected to other islands.
3. Management should favor Tamaulipan thorn scrub and colonies of sea oxeye.
4. Manage predators, especially mammals and fire ants.
5. Posting to prohibit human activity during nesting season is recommended.

Island 614–186

Old Name: 614–186 Shamrock Island

Location

Latitude: 27.76 **Longitude:** -97.16889 **Area:** 37.2731 ha **Elevation:** 2.5 m
Length: 1544 m **Width:** 480.6 m

Description

Ownership: Texas Nature Conservancy

Impacts: A shell pad in the island's northwest portion was built for an oil storage unit and pump station. An old channel built in conjunction with the oil pump station exists at the northeast end. The island is used as line-of-sight approach for Naval Air Station - Corpus Christi pilots. Disturbance is minimal.

Substrate types: sand and shell

Predators: fire ants

Summary: This natural island is located in southeastern Corpus Christi Bay, east of the GIWW. It has considerable biodiversity and is an important site for colonial waterbirds (General Land Office–Category 1) in Texas. Shamrock Island was connected to Mustang Island until 1970 when Hurricane Celia formed a pass between the islands. Vegetation includes sea oxeye concentrated along the western and southwestern shoreline and salt cedar along the southern most lagoons. Black mangrove occurs in the extensive smooth cordgrass marsh along the eastern shoreline. Shell ridges occur along the western and southern shoreline. Geo-tubes were installed along the northwestern shore for erosion control in 1998. Active oil fields are nearby the island.

Bird Survey 1997 – 2003

614-186	1997	1998	1999	2000	2001	2002	2003
GBHE	15	22	55	38	9	34	64
GREG	50	8	34	44	50	40	130
SNEG	10	1	16	1	12	19	16
LBHE	15	6	29	8	16	9	7
TRHE	30	82	112	112	155	71	83
REEG	25	112	120	43	117	88	100
CAEG				3			
BCNH	20	37	94	18	30	37	48
YCNH			2				
WHIB	60		24	37	5	19	60
WFIB	30	51					
ROSP	50	50	177	165	167	151	319
BBWD			3	8		4	
LAGU	4000	3773	3614	3400	4280	2555	4674

614-186	1997	1998	1999	2000	2001	2002	2003
GBTE	10	18		7	7		
CATE	60	38	16	45	100	62	46
ROYT	3000	2016	1656	950	3450	1809	2730
SATE	2500	721	318	180	2095	350	350
FOTE	12			20	10		
LETE				1			
SOTE	1		1		1	1	
BLSK	100	38	124	145	250	5	20

Nesting/Use History

Gulls utilize large portions of the island. They nest in semi-open areas and in all habitats supporting halophytes above the normal high tide line. The shell ridges are important for nesting Caspian, royal, and Sandwich terns and black skimmers. Pelicans loaf on the shell ridge, as do cormorants in the winter. Many other species use the island for breeding including sooty terns, which are rare in Texas. Least bitterns breed, and in wet years, a few green herons can be observed using the extensive cordgrass marsh. The salt cedar is favored by breeding wading birds.

Discussion and Management Recommendations

Shamrock Island is one of the most important islands for colonial waterbirds in Texas. Recommendations:

1. A warden should be assigned from March 10 - August 15.
2. Install and maintain signs prohibiting human activity from January 1 - September 1.
3. Manage fire ant populations.
4. Soft bare ground substrate should be managed along the shell ridges where terns and skimmers breed.
5. Exotic species should be removed. However, salt cedar should not be removed until adequate native shrub cover is available for breeding wading birds.
6. Maintain the geo-tube along the northwestern shore.
7. The Naval flight path should be altered to avoid passing over Shamrock Island.
8. Collect more information about the sooty tern in Texas.

Island 614–185A

New Name: Corpus Christi Channel Spoil (West)

Old Name: 614–186 Corpus Christi Channel Spoil

Location

Latitude: 27.81 **Longitude:** -97.21 **Area:** 124.9871 ha **Elevation:** 10.0 m
Length: 2907 m **Width:** 695.6 m

Description

Ownership: Nueces County Navigation District

Impacts: A graded road exists from the shoreline to a most recent deposition site. Vessel moorings are found on the island’s northern shoreline. The island is readily accessible by water from the north shore and is occasionally used for navy warfare training exercises. Disturbance is cyclic and driven by dredging activity and naval exercises.

Predators: fire ants

Substrate types: The island is mostly mud. A few shell and sand beaches are located along the northwest shoreline.

Summary: This island is located in Corpus Christi Bay, immediately south of Naval Station Ingleside and west of the Corpus Christi Ship Channel. Dredge deposition occurred in 1999 with placement along the shoreline inside the dike on the north end. The island is surrounded by a dike and has considerable plant diversity. Surface conditions range from bare ground to prairie grassland and Tamaulipan savannah. Most of the interior is grasslands with some areas devoid of vegetation. The island was established first as an extension of colonial waterbird island 614–185, but for management purposes it was later given its own designation (614–185A).

Bird Survey 1997 – 2003

* Data includes colony 614-185B – Corpus Christi Channel Spoil (East)

614-185	1997	1998	1999	2000	2001	2002	2003
GBHE		1		7	32	5	10
CAEG							
BCNH							
ROSP							
LAGU							
GBTE				8	8		
LETE			110	160	50	32	8
BLSK	75			60	12		2

Nesting/Use History

When the island was originally created the interior dike area retained water and was used by various species of waterfowl and shorebirds. Since deposition in 1999, soft substrate nesters including gull-billed and least terns and black skimmers have been observed mostly within the north central area, inside the dike. A few nesting great blue herons, great egrets and loafing black-crowned night herons use the mesquite groves mainly along the northeastern shoreline. Black-bellied whistling and mottled ducks, caracara, horned larks, scissor-tailed flycatchers, eastern meadowlarks, cardinals and painted buntings also breed on the island. Few shell and sand beaches are available for soft substrate bare ground colonial waterbirds.

Discussion and Management Recommendations

This island has potential for bare-ground nesters. Recommendations:

1. The deposition pad created in 1999 should be maintained and enlarged with additional soft substrate material.
2. Posting should be maintained to prohibit human activities during nesting season.

Island 614–185B

Old Name: 614–185 Corpus Christi Channel Spoil (East)

Location

Latitude: 27.81 **Longitude:** -97.18 **Area:** 63.4892 ha **Elevation:** 10.0 m
Length: 1744.7 m **Width:** 462.3 m

Description

Ownership: Nueces County Navigation District

Impacts: Human disturbance occurs in cycles and is mostly related to dredging operations and Naval training exercises.

Predators: fire ants

Substrate types: The island is predominately mud with unvegetated, less than soft substrate. A few shell and sand beaches can be found along the northern shore.

Summary: This dredge material island is diked and located in northern Corpus Christi Bay, southeast of Naval Station Ingleside and adjacent to the Corpus Christi Ship Channel. The island has considerable plant diversity with conditions ranging from bare ground to prairie grasslands and Tamaulipan savannah. A few shell and sand beaches are available for nesting, but they have not been used.

Bird Survey 1997 – 2003

* Data included with colony 614-185A (previous).

Nesting/Use History

Mesquite groves along the north shore host pairs of great blue herons, great egrets and small numbers of loafing black-crowned night-herons. Black-bellied whistling and mottled ducks, caracaras, eastern meadowlarks, scissor-tailed flycatchers, horned larks, cardinals and painted buntings breed on the island.

Discussion and Management Recommendations

Island 614–185B has never been important for breeding colonial waterbirds. This may be attributed to the scarcity of available nesting cover. Recommendations:

1. Manage for soft, bare-ground nesters.
2. Once an open area becomes established, manage succession in favor of soft, bare ground.
3. Construct artificial platforms for wading birds near great blue heron nesting sites.
4. Posting to prohibit human activities during nesting season should be continued.

Island 614–184

Old Name: 614–184 Pelican Island

Location

Latitude: 27.82 **Longitude:** -97.15889 **Area:** 111.9173 ha **Elevation:** 10.0 m
Length: 1989.8 m **Width:** 472 m

Description

Ownership: A sanctuary of the Corpus Christi Audubon Outdoor Club by agreement with the Nueces County Navigation District. It is managed by the Texas Audubon Society.

Impacts: The island is within a productive oil field, the remains of an oil pump station platform are found along the southwestern shore. Tidal surge from passing deep draft vessels is a major problem along the northern shore where it destroys habitat, nests, young birds and causes substantial erosion. A small blind is near the north summit. Human disturbance is moderate and can be attributed mainly to fisherman and boaters.

Predators: fire ants and snakes

Substrate types: The island is composed of sandy clay with soft sand beaches along the northeast slope and along the southeast shoreline.

Summary: Pelican Island is a General Land Office–Category 1 dredge material island. It is located in northeastern Corpus Christi Bay immediately south of the Corpus Christi Ship Channel. It hosts one of the most important colonial waterbird colonies in Texas for brown pelicans. Once extinct in Louisiana, and nearly so in Texas, the brown pelican survived and staged a comeback here.

Near the center of Pelican Island a tidal inlet almost cuts the island in half. The island has considerable diversity, especially within the northern portion where it varies between bare ground, Tamaulipan grassland and extensive black mangroves - some reaching two meters in height - along the eastern lagoon and the northeastern shore. Cordgrass is intermixed with mangroves in the lagoons along the southeastern shoreline. Vegetation south of the lagoon is composed of grassland prairie species with a few mesquite trees, unvegetated areas with hard substrate, halophytes, forbs, and false willow. Vegetation north of the lagoon, especially near the summit, has considerable amounts of false willow, small amounts of Tamaulipan thorn scrub, colonies of prickly pear cacti, grasses and forbs. Extensive areas of sea oxeye are found at the northwestern lagoon slope extending west to the shoreline and on the south-central portion, north of the lagoon. Spanish dagger occurs mainly on the northwestern part of the island.

Rocks and rubble from an erosion stabilization project are found along the northeast shoreline and dikes occur along parts of the island.

Bird Survey 1997 – 2003

614-184	1997	1998	1999	2000	2001	2002	2003
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BRPE	1350	1375	1100	873	1000	1355	1190
GBHE	103	62	50	31	35	107	72
GREG	130	25	116	33	72	107	217
SNEG	130	59	84	40	52	47	175
LBHE	7	36	33		12	5	15
TRHE	550	343	261	301	213	376	606
REEG	115	48	34	10	30	13	12
CAEG	234	109	165	70	30	65	175
BCNH	200	82	86	36	94	79	33
WHIB	81	75	311	140	56	164	54
WFIB	123	63	47	53	15		55
ROSP	66	48	62	100		110	110
LAGU	9310	8000	5700	4600	4460	7150	10000
GBTE			8	3	3		74
CATE			18				
ROYT			218	660	1500	400	1000
SATE			108	780	350	50	600
FOTE							
LETE			1	2			
SOTE							
BLSK	30	70	56	140	23		230

Nesting/Use History

The false willow is important for nesting herons, snowy and reddish egrets, and white-faced ibis. Wading birds, spoonbills and white ibis use false willow, thorn scrub and sugar hackberry mainly north of the lagoon. Wading birds also use the mangroves for nesting. Gulls use all available appropriate habitats across the island and are the predominant species on the south end of Pelican Island.

Discussion and Management Recommendations

Deposition opportunities should be managed for colonial waterbird success. Pelicans have historically been restricted to the northern part of island and, because of their size, they present a management challenge. Recommendations:

1. Management should encourage pelicans to locate away from species that require bare ground and low vegetation.
2. Postings should be maintained, no visitors from February 1 – August 31.
3. The soft substrate should be maintained.
4. Tamaulipan thorn scrub should be planted. Once established, exotics and false willow should be eliminated.
5. Enhance and restore sea oxeye.
6. Geo-tubes are recommended for the north, northeast and the southeast shoreline and should be installed to provide an area of calm between the island and the ship channel.

Island 614–183

Old Name: 614–183 Point of Mustang

Location

Latitude: 27.825 **Longitude:** -97.13 **Area:** 188.9825 ha **Elevation:** 6.0 m
Length: 2966 m **Width:** 890 m

Description

Ownership: private

Impacts: Disturbance is minimal.

Predators: coyotes, raccoons, snakes and fire ants

Substrate types: sandy clay

Summary: This island is located east of the Corpus Christi Ship Channel and was formed by placing dredge material on a natural marsh island. The narrow Piper Canal (access to Island Moorings) separates this island from Mustang Island. The island has considerable plant diversity within the interior and features extensive areas of salt cedar, false willow and grasses. Some mesquite occurs along the channel side of the island. Smooth cordgrass and other halophytic marsh species and mangrove occur along the northeastern shoreline.

Bird Survey 1997 – 2003

614-183	1997	1998	1999	2000	2001	2002	2003
GBHE							
BCNH							
LETE							
BLSK							

Nesting/Use History

The mesquite trees once hosted nesting great blue herons and day roosts for black-crowned night-herons. Following deposition events skimmers, gull-billed and least terns have used the new material.

Discussion and Management Recommendations

Recommendations:

1. Manage for bare ground substrate species following deposition.
2. Install and maintain a predator exclusion barrier once a nesting colony has been established.

Island 614–181

Old Name: 614–181 West Harbor Island

Location

Latitude: 27.83694 **Longitude:** -97.12694 **Area:** N/A **Elevation:** 1.5 m

Length: N/A **Width:** N/A

Description

Ownership: Nueces County Navigation District

Impacts: Fishermen and campers frequently drive, camp and walk across the site. Disturbance is considerable.

Predators: coyotes, raccoons, dogs, cats and fire ants

Substrate types: mud and soft sand

Summary: This dredge material site is located along the southeastern shoreline of Harbor Island, adjacent to the Corpus Christi Ship Channel. This area was once a shallow bay and marsh. The site features some vegetated areas, mangrove and cordgrass along the southwestern shoreline.

Bird Survey 1997 – 2003

614-181	1997	1998	1999	2000	2001	2002	2003
GBHE							
REEG							
GBTE							
CATE							
LETE							
BLSK							
GBHE							

Nesting/Use History

Historically least and gull-billed terns and skimmers nested here. Three small islands are located north of the southeastern shoreline. There were once active colonial waterbird colonies on these islands but nesting has not occurred since 1980.

Discussion and Management Recommendations

Recommendations:

1. Human activities should be prohibited from this portion of Harbor Island where soft sand substrate is available for bare ground nesting species. The prohibition should be enforced.
2. Enhance nesting for least terns and skimmers.
3. Install a predator-exclusive pad.

Island 614–160

Old Name: 614–160 La Quinta Spoil

Location

Latitude: 27.85778 **Longitude:** -97.24583 **Area:** 346.2191 ha **Elevation:** 6.0 m
Length: 5141 m **Width:** 699 m

Description

Ownership: Texas General Land Office and Nueces County Navigation District

Impacts: Disturbance is related to dredging cycles.

Predators: coyotes, raccoons and fire ants

Substrate types: This is a dredge material island consisting of mostly mud with little soft substrate. Some sand and shell beaches occur mainly along the northern shoreline.

Summary: The island is located in Corpus Christi Bay separated from the mainland by La Quinta Channel. La Quinta Island is dynamic, changing from bare ground to low and moderate plant succession at the highest elevations. It has considerable plant diversity including an assemblage of halophytes, sedges, cordgrass and various forbs that occur mainly along the island’s margins. Some false willow and salt cedar are found within the diked sections of the interior.

Bird Survey 1997 – 2003

614-160	1997	1998	1999	2000	2001	2002	2003
GBHE		8	7		8	3	6
GREG			2				
LAGU							
GBTE							
LETE							
BLSK							

Nesting/Use History

When dredged material was first placed at this location, terns and skimmers used the northwest dike and higher points adjacent to the northwest shoreline. Groves of mesquite near the eastern shoreline provide cover for a few pair of great blue herons. Wilson’s plovers and horned larks nest on the island.

Discussion and Management Recommendations

Recommendations:

1. This site is not recommended for wading bird management.
2. Deposition and management for bare ground nesters is recommended.

3. Manage predators.

Island 614-144

Old Name: Sunfish Island

Location

Latitude: 27.81 **Longitude:** -97.39 **Area:** 1.6839 ha **Elevation:** 1.5 m
Length: 353.2 m **Width:** 65.8 m

Description

Ownership: N/A

Impacts: Disturbance is moderate.

Predators: fire ants

Substrate types: The island is mainly composed of sand and shell with a rock jetty along the northeastern and southeastern shoreline.

Summary: This island is located in the northern part of Port Corpus Christi's inner harbor. The island was created accidentally during maintenance dredging operations. It is a half moon shaped island with the highest point on the east side. It is composed of shell hash and sand. Limited amounts of vegetation, mainly halophytes occur. Smooth cordgrass is found along the southeastern and central western shoreline. A small pond is located immediately southwest of the rock jetty. Prickly pear occurs at the summit along the southeastern shoreline. Dominant plant species are sea oxeye, saltgrass, wolfberry, sea purslane, smooth cordgrass, sunflower and pigweed.

Bird Survey 1997 – 2003

614-104	1997	1998	1999	2000	2001	2002	2003
GBHE	1	7	8			3	9
SNEG				2		8	29
TRHE		1		3		4	9
ROSP							4
BBWD			1				
LAGU	3	210	65	2000		1750	2000
GBTE		1					
ROYT							
BLSK	32	50					

Nesting/Use History

More than a thousand pair of gulls nest here. The island is used by loafing pelicans and by cormorants. Great blue and tri-colored herons and great and snowy egrets have nested here.

Discussion and Management Recommendations

Recommendations:

1. The focus of this site should be public education and outreach.
2. Implement enhancements including habitat diversification, platform construction and establishing thorn scrub shrubbery for wading birds and the creation of soft substrate for waterbird species of concern.
3. Deposition at this site is desirable.
4. Stabilization of the east shoreline is critical. Use of geo-tubes is preferred with cordgrass and black mangrove as an alternative.

Island 614–143

Old Name: New Island

Location

Latitude: 27.86 **Longitude:** -97.49 **Area:** 1.6187 ha **Elevation:** 0.6 m
Length: 162.8 m **Width:** 135 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: mostly sand, some mud and shell

Summary: This island was created in 2002 as part of a Coastal Erosion Planning and Response Act project working in conjunction with Texas General Land Office. The objective was to address the loss of nesting islands in western Nueces Bay by creating a four-acre site on top of two previously existing islands, initially to provide habitat for bare-ground nesters, especially black skimmers. The island is protected by rock on all sides except the west, which allowed for formation of a small beach area. A blind was constructed on the northern edge of the island to facilitate observations during nesting season.

Bird Survey 1997 – 2003

614-143	97	98	99	00	01	02	03
TRHE	did not exist		10				
LAGU							700
GBTE						120	190
CATE							63
LETE						2	
BLSK						177	310

* Data for all 614-140 colonies combined. Data summarized in 614-140E(a).

Nesting/Use History

In the first season the island was available (2002), the bare ground substrate was colonized by nesting gull-billed terns, black skimmers, and two pairs of least terns. In the following years some vegetation began to establish itself, and Caspian terns and laughing gulls began to use the island as well as a few pairs of small wading birds.

Discussion and Management Recommendations

Recommendations:

1. Treatment of fire ants and exotic vegetation should continue.
2. Island should continue to be managed for bare-ground nesters, and some areas of favorable halophytes and shrubby vegetation for small wading birds. One side of the island should be planted with various species of Tamaulipan thornscrub to facilitate taller wading birds in the future.

Island 614-141a

Old Name: 614-141/50 A East Nueces Bay - Causeway Island

Location

Latitude: 27.84 **Longitude:** -97.38 **Area:** 1.2527 ha **Elevation:** 1.5 m
Length: 189.2 m **Width:** 92 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: mainly shell

Summary: Originally this was a one acre dredge material island. Newest material (mud, sand and shell) was added to north end in 2002. Most of this material was gone before June of 2003. Vegetation is dominated by guinea grass, few significant shrubs, a few colonies of sea oxeye mainly along the west side, some areas of halophytes and native grasses, with open ground on shell hash deposits along the north side. During the warm season considerable amounts of common sunflower dominate part of the island. Two small retamas are located on the southwest, sea rocket occurs on shoreline during cool season, and a small colony of prickly pear is near the shoreline on the west side.

Bird Survey 1997 - 2003

* Colony 614-141 consists of seven islands previously reported as one colony. The bird survey data reflects all islands within this colony, and individual islands are treated separately in this document as subcolonies for descriptive purposes.

614-141	1997	1998	1999	2000	2001	2002	2003
GBHE	17	23	15	7	2	2	14
GREG	20	45	14	1			2
SNEG	31	128	116	60	1	3	1
LBHE	1	3					
TRHE	86	120	200	214	40	15	
REEG	17	3	6	5			
CAEG	8	45	44	20			
BCNH	18			2	1		
WFIB							
ROSP	5	56	53				
BBWD			2				
FUWD			3				
LAGU	2528	4225	2630	1567	71	14	400
GBTE	30		1				

614-141	1997	1998	1999	2000	2001	2002	2003
CATE	39		4	10	2		
ROYT	45						9
FOTE	70	13	2			60	
LETE	1					5	
BLSK	83				5		

Nesting/Use History

Originally the island supported considerable numbers of wading birds and laughing gulls. No birds nested there from 2001 through 2002. Following the removal of a feral cat in 2003 colonial waterbirds returned to nest on the island. Geotextile tubes were placed along the N and NW shoreline in February 2003. Six nesting platforms were designed and placed on the island in February 2004 to accommodate twenty-five pairs of wading birds.

Discussion and Management Recommendations

Recommendations:

1. Management of exotics, especially fire ants and guinea grass, should continue.
2. Posting recommended from December 1 through September 1.
3. Management of predators is essential.
4. Establishment of native thorn scrub is encouraged.
5. Management of gulls may be desirable.

Island 614-141h

Old Name: 614-141/50 H East Nueces Bay

Location

Latitude: 27.86 **Longitude:** -97.38 **Area:** .2161 ha **Elevation:** 1.0 m
Length: 85 m **Width:** 28.3 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: shell

Summary: This is a dredge material island, mainly shell, located southwest of 614-141/50b2, a considerable distance from land. Formerly five small islands were located within this immediate area. All but a portion of this one remains above water today. Vegetation includes halophytes such as seaside heliotrope, sea oxeye, saltgrass and smooth cordgrass. One small mesquite and several small retama are the only shrubs, surrounded by a colony of prickly pear and marsh elder.

Bird Survey 1997 - 2003

* Data for all 614-141 colonies combined. Data summarized in 614-141A.

Nesting/Use History

Island was formerly twice the size that it is today, and once contained considerable numbers of nesting colonial waterbirds and gulls. Great blue herons have always utilized the island and they continue to do so. In 1970 hundreds of gulls and three chicks were found dead and dying because of overuse of insecticides targeting boll weevils in nearby cotton fields. That same year adult gulls were observed consuming and feeding sorghum to their chicks.

Discussion and Management Recommendations

Recommendations:

1. Restoration of this site is encouraged.
2. Geotextile tubes for control of erosion are recommended.
3. Island is and should continue to be posted to prevent human disturbance from March 1st through September 1st.
4. Management of exotics should be continued.

Island 614-141b2

Old Name: 614-141/50 B2 East Nueces Bay

Location

Latitude: 27.86 **Longitude:** -97.36 **Area:** 2562 ha **Elevation:** 0.8 m
Length: 106.2 m **Width:** 32 m

Description

Ownership: Texas General Land Office, leased by Texas Audubon Society

Impacts: N/A

Predators: raccoons, dogs, fire ants

Substrate types: mainly mud

Summary: This is a dredge material island mainly of shell, northwest of Nueces Bay Causeway.

Bird Survey 1997 - 2003

* Data for all 614-141 colonies combined. Data summarized in 614-141A.

Nesting/Use History

Historically the site supported considerable numbers of tricolored herons and snowy egrets; reddish egrets, black-crowned night herons, whistling and mottled ducks, and oystercatchers once nested there. Formerly sea oxeye was abundant. Smooth cordgrass was abundant along the shoreline and near depressions. In October 1994 an oil spill occurred. Mitigation efforts at the site favored cordgrass and it is currently a cordgrass marsh. A wet depression is located near southeastern island center. Colonial waterbirds no longer nest on the island.

Discussion and Management Recommendations

Recommendations:

1. Should be managed for loafing and feeding, not nesting.
2. No management recommended.

Island 614-141B

Old Name: 614-141/50 B East Nueces Bay

Location

Latitude: 27.86 **Longitude:** -97.36 **Area:** 2067 ha **Elevation:** 0.2 m
Length: 121.7 m **Width:** 23.3 m

Description

Ownership: Texas General Land Office, leased by Texas Audubon Society

Impacts: N/A

Predators: raccoons, dogs, fire ants

Substrate types: shell and mud

Summary: This is a dredge material island mainly of shell immediately west of 614-141B1. The island is currently submerged.

Bird Survey 1997 - 2003

* Data for all 614-141 colonies combined. Data summarized in 614-141A.

Nesting/Use History

Elevation was once fairly high. Dense stands of sea oxeye and other halophytes were concentrated near the island center. The island once supported nesting populations of tri-colored and black-crowned night herons, snowy and reddish egrets. Whistling ducks, oystercatchers and skimmers once nested there.

Discussion and Management Recommendations

Recommendations:

1. No management recommended.

Island 614-141c

Old Name: 614-141/50 C East Nueces Bay

Location

Latitude: 27.86 **Longitude:** -97.36 **Area:** .1385 ha **Elevation:** 0.2 m
Length: 116.2 m **Width:** 16.6 m

Description

Ownership: Texas General Land Office, leased by Texas Audubon Society

Impacts: N/A

Predators: raccoons, dogs, fire ants

Substrate types: shell and mud

Summary: This is a dredge material island mainly of shell immediately west of 614-141 B. The island is nearly submerged. The islands are no longer used by nesting waterbirds.

Bird Survey 1997 - 2003

* Data for all 614-141 colonies combined. Data summarized in 614-141A.

Nesting/Use History

Elevation was once fairly high; island once contained considerable plant diversity. Most vegetation originally was concentrated near island center, highest on the north side. Here dense stands of sea oxeye, a colony of prickly pear and one mesquite occurred. The island once supported nesting populations of great blue, tri-colored and black-crowned night herons, snowy and reddish egrets. Whistling ducks, oystercatchers and skimmers once nested there.

Discussion and Management Recommendations

Recommendations:

1. Should be managed for loafing and feeding, not nesting.
2. No management recommended.

Island 614-141b1

Old Name: 614-141/50 B1 East Nueces Bay

Location

Latitude: 27.86 **Longitude:** -97.36 **Area:** .2073 ha **Elevation:** 0.2 m
Length: 145.4 m **Width:** 24.2 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: raccoons

Substrate types: mud, formerly some shell fragments along shoreline on west side

Summary: Dredge material was placed within a cordgrass marsh adjacent to Gunderland's Channel, providing high ground which was used by nesting colonial waterbirds. The island is located immediately NW of Nueces Bay causeway.

Bird Survey 1997 - 2003

* Data for all 614-141 colonies combined. Data summarized in 614-141A.

Nesting/Use History

Historically colonies of sea oxeye supported nesting colonial waterbirds. Large numbers of tri-colored herons, snowy egrets and laughing gulls formerly used the island for nesting. In October 1994 an oil spill occurred. Mitigation efforts at the site favored cordgrass and it is currently a cordgrass marsh.

Discussion and Management Recommendations

Recommendations:

1. Should be managed for loafing and feeding, not nesting.
2. No management recommended.

Island 614-141g

Old Name: 614-141/50 G East Nueces Bay – Marsh Island

Location

Latitude: 27.86 **Longitude:** -97.35 **Area:** .8529 ha **Elevation:** 0.3 m
Length: 308 m **Width:** 23.6 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: raccoons

Substrate types: mud, formally some shell fragments along shoreline on west side

Summary: Dredge material placed along east side shoreline of cordgrass marsh. Island is located immediately NW of Nueces Bay causeway.

Bird Survey 1997 - 2003

* Data for all 614-141 colonies combined. Data summarized in 614-141A.

Nesting/Use History

Dredge material initially placed on the island created high ground that was utilized by nesting colonial waterbirds. Some open ground was created by the deposition, skimmers nested there for several years. Sea oxeye was once common in areas of highest elevation on the east side of the island. Flotsam along the western shoreline provided substrate for nesting Forster's terns. Large numbers of tri-colored and black-crowned night herons, snowy and reddish egrets and laughing gulls once nested there. Today the island has become a cordgrass marsh, areas of highest elevation have subsided, and colonial waterbirds no longer breed here.

Discussion and Management Recommendations

Recommendations:

1. Should be managed for loafing and feeding, not nesting.
2. No management recommended.

Island 614-140e(A)

Old Name: 614-140/51E(a) West Nueces Bay

Location

Latitude: 27.85 **Longitude:** -97.48 **Area:** .4187 ha **Elevation:** 1.2 m
Length: 149.3 m **Width:** 44.5 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: mainly shell

Summary: Island contains a diversity of halophytic vegetation, including some dense stands of saltgrass and sea oxeye, and a thicket of retama with some marsh elder and prickly pear on the high ridge in the middle. A geotextile tube was placed to protect the southern and eastern sides of the island in 2002 to limit erosion.

Bird Survey 1997 - 2003

* Colony 614-141 consists of six islands previously reported as one colony. The bird survey data reflects all islands within this colony, and individual islands are treated separately in this document as subcolonies for descriptive purposes.

614-140	1997	1998	1999	2000	2001	2002	2003
GBHE	16	35	29	8	10	6	40
GREG	18	34	26	6	6	39	44
SNEG	4	22	44	64	78	172	129
LBHE							
TRHE		18	29	58	122	170	160
REEG		4	8	7	8	16	7
CAEG		6	28			3	2
BCNH	6	18		19	15	19	17
WHIB							1
WFIB							
ROSP	20	33	42	19	57	88	92
BBWD			1				
LAGU	77	258	125	236	418	492	1097
GBTE	14	21	31	100	78		190
CATE	8	39	54	24	35	49	63
FOTE	45	134	14	2	50	33	26
LETE							
BLSK	83	106	139	113			310

Nesting/Use History

Historically the island supported good numbers of a greater diversity of nesting colonial waterbirds than are currently present. It was a particularly important island for a large number of roseate spoonbills. White-faced ibis and almost all bay-associated wading birds have nested on the island, and skimmers and Forster's terns nested on the shell bar on the west side of the island. Whistling-ducks, mottled ducks and oystercatchers also have bred on the island sporadically through the years.

Discussion and Management Recommendations

Recommendations:

6. Management of exotics, especially fire ants, should continue.
7. Deposition of new material adjacent to the island is encouraged to restore the island to its former size.

Island 614-140e(c)

Old Name: 614-140/51E(c) West Nueces Bay

Location

Latitude: 27.85 **Longitude:** -97.48 **Area:** .2018 ha **Elevation:** 0.8 m
Length: 90 m **Width:** 34.7 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: mainly shell

Summary: Island contains a variety of halophytic vegetation, with some prickly pear, retama and some marsh elder on the high ridge in the middle. A geotextile tube was placed to protect the southern and eastern sides of the island in 2002 to limit erosion. The island is located immediately east of 614-140E(a)

Bird Survey 1997 - 2003

* Data for all 614-140 colonies combined. Data summarized in 614-140E(a).

Nesting/Use History

Historically the island supported a similar nesting waterbird community as 614-140E(a). Whistling-ducks, mottled ducks and oystercatchers also have bred on the island sporadically through the years.

Discussion and Management Recommendations

Recommendations:

1. Management of exotics, especially guinea grass and fire ants, should continue.
2. Deposition of new material adjacent to the island is encouraged to restore the island to its former size.

Island 614-140e(j)

Old Name: 614-140/51E(j) West Nueces Bay

Location

Latitude: 27.85 **Longitude:** -97.48 **Area:** 2548 ha **Elevation:** 0.8 m
Length: 78.5 m **Width:** 26 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: mainly shell, some mud

Summary: A crescent-shaped island covered mostly with halophytic vegetation, in particular a carpet of sea purslane with some marsh elder and saltgrass. A nesting tripod was placed on the highest spot on the southern end near a small mesquite prior to the 2004 nesting season.

Bird Survey 1997 - 2003

* Data for all 614-140 colonies combined. Data summarized in 614-140E(a).

Nesting/Use History

This island was once joined to the island now known as 614-140E(d) and was roughly four acres in size before shell mining operations split the island in two in the early 1960s. This island was highly favored by roseate spoonbills and black-crowned night herons. Whistling-ducks, mottled ducks and oystercatchers continue to nest on this and nearby islands.

Discussion and Management Recommendations

Recommendations:

1. Treatment of fire ants should continue.
2. Deposition of new material both on and adjacent to the island is encouraged to restore the island to its former size.

Island 614-140e(d)

Old Name: 614-140/51E(d) West Nueces Bay

Location

Latitude: 27.85 **Longitude:** -97.48 **Area:** .2548 ha **Elevation:** 1.0 m
Length: 305.2 m **Width:** 39 m

Description

Ownership: Texas General Land Office

Impacts: remains of a duck blind on northeast side near shoreline

Predators: fire ants

Substrate types: shell and mud

Summary: Island covered with halophytes, especially sea oxeye and some patches of mesquite, prickly pear and marsh elder. A shell bar extends to the west of the island curving to the north. A geotextile tube was placed to protect the southern and eastern sides of the island in 2002 to limit erosion.

Bird Survey 1997 - 2003

* Data for all 614-140 colonies combined. Data summarized in 614-140E(a).

Nesting/Use History

This island was once joined to the island now known as 641-140E(j) and was roughly four acres in size before shell mining operations split the island in two in the early 1960s. It has always supported a good number and diversity of wading birds (especially great blue herons and great egrets), and skimmers, Forster's and Caspian terns have utilized the lower areas and shell spit.

Discussion and Management Recommendations

Recommendations:

1. Treatment of fire ants should continue.
2. Deposition of new material both on and adjacent to the island is encouraged to restore the island to its former size.
3. Signs prohibiting human activity during nesting season should be maintained and relocated if necessary.

Island 614-140W(p)

Old Name: 614-140/51W(p) West Nueces Bay

Location

Latitude: 27.86 **Longitude:** -97.49 **Area:** .5429 ha **Elevation:** 1.0 m
Length: 118 m **Width:** 64.4 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: shell and mud

Summary: Island covered with halophytes, especially sea ox-eye daisy, saltgrass and sea purslane. Some patches of mesquite and prickly pear are concentrated towards the center of the island. A geotextile tube was placed to protect the southeastern and northern sides of the island in 2002 to limit erosion.

Bird Survey 1997 - 2003

* Data for all 614-140 colonies combined. Data summarized in 614-140E(a).

Nesting/Use History

This island used to be much larger than it is at present. Historically, it has always supported a good number and diversity of colonial waterbirds. The island is preferred by roseate spoonbills. Whistling-ducks, mottled ducks and oystercatchers continue to nest on this and nearby islands.

Discussion and Management Recommendations

Recommendations:

1. Treatment of fire ants and exotic vegetation should continue.
2. Deposition of new material adjacent to the island is encouraged to restore the island to its former size.
3. Signs prohibiting human activity during nesting season should be maintained and relocated if necessary.

Island 614-140W(k)

Old Name: 614-140/51W(k) West Nueces Bay

Location

Latitude: 27.86 m **Longitude:** -97.86 m **Area:** .2698 ha **Elevation:** 0.6 m
Length: 87 m **Width:** 34 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Predators: fire ants

Substrate types: shell

Summary: Island covered with a carpet of primarily sea purslane, with some saltgrass and sea ox-eye daisy. A geotextile tube was placed to protect all but a small part of the southwestern side of the island in 2002 to limit erosion.

Bird Survey 1997 - 2003

* Data for all 614-140 colonies combined. Data summarized in 614-140E(a).

Nesting/Use History

This island used to be at least three times its present size. When the island supported extensive stands of sea ox-eye daisy, it was favored by roseate spoonbills, black-crowned night herons, tricolored herons and snowy egrets. Due to diminished vegetation, it is now used primarily by gulls, a small number of small waders, and oystercatchers.

Discussion and Management Recommendations

Recommendations:

1. Treatment of fire ants should continue.
2. Deposition of new material both on and adjacent to the island is encouraged to increase size and allow for planting of favorable shrub vegetation.
3. Signs prohibiting human activity during nesting season should be maintained and relocated if necessary.

Island 614–123

Old Name: 614–123 Hog Island Complex

Location

Latitude: 27.89778 **Longitude:** -97.105 **Area:** 30.0166 ha **Elevation:** 1.0 m
Length: 1420.4 m **Width:** 371.8 m

Description

Ownership: Texas General Land Office

Impacts: None. Disturbance is minimal.

Predators: raccoons and fire ants

Substrate types: N/A

Summary: This natural island was farmed in the late 1800s. Subsidence and erosion have reduced most of the island to marsh, smooth cordgrass, black mangrove, etc. Areas of salt cedar occur mainly near the northeast end. A cluster of small islands immediately east of Hog Island were historically included in the annual Colonial Waterbird Survey reports as part of Hog Island. These islands now lay below the high tide line and are exposed only during low tide.

Bird Survey 1997 – 2003

614-123	1997	1998	1999	2000	2001	2002	2003
GBHE	17	1	13				
GREG							
SNEG							
TRHE							
REEG							
CAEG							
BCNH	1		3				
WFIB							
ROSP							
LAGU							
GBTE							
FOTE							
BLSK							

Nesting/Use History

Before 1980, considerable numbers of colonial waterbirds, especially roseate spoonbills, used Hog Island. Terns and skimmers once bred on the cluster islands east of Hog Island. Only a small number of pairs of wading birds have bred in the higher tree crowns since 1982. Colonial waterbirds use Hog Island for feeding and loafing, and some least bitterns and

clapper rails breed there. Black-crowned night-herons use the salt cedar and mangrove for a day roosts.

Discussion and Management Recommendations

Recommendations:

1. The cluster islands east of Hog Island are good deposition candidates for a colonial waterbird habitat restoration project. This newly reformed island should not exceed three acres in size and two meters in elevation.
2. The reformed island should be managed for wading birds, terns and skimmers.
3. Manage predators.
4. This site should be posted to prohibit human activity during nesting season.

Island 614–122

Old Name: 614–122 Big Bayou Spoil

Location

Latitude: 27.93389 **Longitude:** -97.08583 **Area:** .6733 ha **Elevation:** 1.0 m
Length: 137.6 m **Width:** 63.5 m

Description

Ownership: Texas General Land Office, lease held by Texas Audubon Society

Impacts: Disturbance is minimal.

Predators: fire ants

Substrate types: The island is composed of sand and shell - no soft substrate remains.

Summary: This dredge material island is located west northwest of Big Bayou. This site originally consisted of two islands, but only a small portion of one island remains. Vegetation consists of sea oxeye, false ragweed, wolfberry, shoregrass, saltgrass, halophytes, cordgrass, and small amount of black mangrove.

Bird Survey 1997 – 2003

614-122	1997	1998	1999	2000	2001	2002	2003
GBHE	1	2	1	5	2	8	3
GREG	23	18	8	1		10	14
SNEG	12	5	3				
TRHE	27	5	70	16	30		1
REEG	9	6	3	7	1		
CAEG	1						
BCNH							
ROSP							
LAGU	210	53	88	175	10		
GBTE							
CATE					10		
FOTE					55		
BLSK			23		16		1

Nesting/Use History

Historically, considerable numbers of colonial waterbirds used these islands and the colonies were given the highest code rating.

Discussion and Management Recommendations

Recommendations:

1. Restoration is desirable and the island should be three acres in size, cone-shaped, and have an erosion control unit surrounding the island. The erosion units should be installed approximately 50 yards off the shoreline.
2. The restored island should be managed for terns, skimmers and wading birds.
3. Control predators.
4. Install and maintain signs prohibiting human activity from March 1 – September 1.

Island 614–121

Old Name: 614–121 Causeway Islands & Platforms

Location

Latitude: 27.93083 **Longitude:** -97.09778 **Area:** .0585 ha **Elevation:** 0.08 m
Length: 219.2 m **Width:** 24 m

Description

Ownership: Texas General Land Office

Impacts: Site includes the remains of an old causeway. Disturbance is minimal.

Predators: fire ants

Substrate types: N/A

Summary: The Old Terminal Causeway is north and east of 614–100. The site includes several platforms and a chain of eleven small dredge material islands immediately north of the causeway islands. Terminal Causeway Islands and the islands to the north have been separated and given distinctive identifiers – the islands to the north are designated as 614–121B. Only a few of the Terminal Causeway Islands remain. Sea oxeye, various forbs, wolfberry, colonies of shoregrass and saltgrass were once common here. Islands to the east contained colonies of prickly pear and marsh elder.

Bird Survey 1997 – 2003

614-121	1997	1998	1999	2000	2001	2002	2003
GBHE	4	4		1	1		2
GREG	1						
SNEG	8	1	2				
LBHE							
TRHE	119	185	71	40	12	3	11
REEG	18	8	2				
CAEG	20						
ROSP							
BBWD			2				
LAGU	236	175	133	35	28	17	1
GBTE	2	2					
CATE	2	20	3		1		
FOTE	80	25	3	12	10	12	41
LETE							
BLSK	88		38	4	8		17

Nesting/Use History

These islands have historically been important for breeding wading birds and terns, gulls and skimmers. Most of the original islands and available nesting areas have eroded away.

Discussion and Management Recommendations

Recommendations:

1. A new dredge material island (between 2 and 4 acres) within the immediate area is desirable.
2. The new island should be managed for wading birds, terns and skimmers.
3. Manage predators.
4. The islands should be posted to prohibit human activity during nesting season.

Island 614– (*colony code pending)

Old Name: Palm Harbor

Location

Latitude: 27.965 **Longitude:** -97.095 **Area:** 1.9963 ha **Elevation:** 2.0 m
Length: 198.4 m **Width:** 123.8 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal.

Predators: N/A

Substrate types: mud and sand

Summary: These two dredge material islands are located east of the GIWW, near marker 19. It was originally reported as one island. Vegetation is mainly sunflower and various other annual forbs.

Bird Survey 1997 – 2003

614-120	1997	1998	1999	2000	2001	2002	2003
GBHE				23	3		
GREG				36	4		
SNEG				20			
TRHE				25	5		
CAEG				8			

Nesting/Use History

N/A

Discussion and Management Recommendations

Recommendations:

1. Deposition is desirable and would enhance colonial waterbird habitat. However, the islands should not be united to form a single large island and/or a chain as this favors predators. The deposition should form a cone-shaped island with a gradual slope to the water.
2. Install and maintain signs prohibiting human activity from March 1 – September 1.

Island 614–105

Old Name: 614–105 Marker 43 Spoil

Location

Latitude: 27.93 **Longitude:** -97.11 **Area:** 13.3960 ha **Elevation:** 1.6 m
Length: 678.1 m **Width:** 238.6 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal.

Predators: raccoons and fire ants

Substrate types: mud and sand

Summary: This dredge material island is located east of the GIWW, near markers 31 and 33 (The name “Marker 43” refers to an old marker). It has considerable plant diversity including mesquite and thorn scrub, most located near the north end.

Bird Survey 1997 – 2003

614-105	1997	1998	1999	2000	2001	2002	2003
BLSK							

Nesting/Use History

A few great blue herons and great egrets nest in the mesquite trees and thorn scrub. Black-crowned night-herons frequently use the shrubs and trees as a day roost. Birds of interest in the summer are: great egret, tri-colored heron, snowy egret, white ibis, skimmer, Wilson’s plover, black-necked stilt, willet, common nighthawk and red-winged blackbird.

Discussion and Management Recommendations

Recommendations:

1. Deposition at this site would enhance colonial waterbird habitat. However, placement should not impact the existing groves of mesquite or thorn scrub.
2. Additional shrubs and trees should be established and managed near the summit, following deposition and a weathering period.
3. Manage predators including fire ants.
4. Posting to prohibit human activity from March 1 – September 1 should be installed.

Island 614–104

Old Name: 614–104 Marker 33 Spoil

Location

Latitude: 27.81028 **Longitude:** -97.39111 **Area:** 9.4665 ha **Elevation:** 1.6 m
Length: 731 m **Width:** 169.6 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal.

Predators: raccoons and fire ants

Substrate types: mud and sand

Summary: This dredge material island is located east of the GIWW, near marker 33. The site has a considerable diversity of plant species and habitats including groves of mesquite on the north end and some open areas. Vegetation includes: mesquite, prickly pear, false ragweed, wolfberry, shoregrass, saltgrass, pigweed, bluestem, dropseed, false willow, croton, sunflower, camphorweed, camphor daisy, evening primrose, necklace pod, Indian blanket, sea lavender, mistflower, sedge, lantana, widow’s tear, sandbur, bermudagrass, and various halophytes.

Bird Survey 1997 – 2003

614-104	1997	1998	1999	2000	2001	2002	2003
LETE							

Nesting/Use History

None.

Discussion and Management Recommendations

Recommendations:

1. Deposition should enhance colonial waterbird habitat and is desirable. However, dredge placement should not impact the existing groves of shrubs or trees.
2. Establish shrubs and trees near the center of the island once the deposited material has weathered.
3. Manage for predators including fire ants.
4. Install and maintain signs prohibiting human activity from March 1 – September 1.

Island 614–103a

Old Name: 614–103 Ransom Island/Ransom Spoil

Location

Latitude: 27.87583 **Longitude:** -97.13583 **Area:** 15.0324 ha **Elevation:** 2.0 m
Length: 1647 m **Width:** 169.8 m

Description

Ownership: City of Aransas Pass

Impacts: Debris from petrochemical exploitation and development are evident on the island. The southern end has been impacted by dredge material. Disturbance is minimal.

Predators: coyotes, raccoons and fire ants

Substrate types: N/A

Summary: This natural island is located immediately south of Aransas Pass and features natural shell beaches. Seven dredge material islands extend west off the southwestern shoreline, and until recently, these islands were included as a part of the Ransom Island Colonial Waterbird Census. The island has considerable habitat diversity including coastal marsh, algal flats, salt ponds and uplands that support various grasses, thorn scrub, mesquite, prickly pear and Spanish dagger. Extensive colonies of salt cedar occupy areas along the southeastern shoreline. Mangrove has become established in some areas.

Bird Survey 1997 – 2003

614-103	1997	1998	1999	2000	2001	2002	2003
NECO							
GBHE							
GREG							
SNEG							
TRHE							
REEG							
CAEG							
BCNH							
ROSP							
LAGU							
GBTE							
CATE							
FOTE							
LETE							
BLSK							

Nesting/Use History

The island is important for migrating neotropical birds.

Discussion and Management Recommendations

One of the few remaining natural islands along the Texas coast, this island should be protected. However, the City of Aransas Pass is considering limited development for the island, which is acceptable if the integrity of the island's natural habitats is preserved.

Recommendations:

1. Management for nesting colonial waterbirds is possible.
2. Long-term management of predators is required.
3. Remove exotic plants and replace with native species.
4. Posting to prohibit human activity during nesting season will be required.
5. Install educational exhibits.

Island 614–103b

Old Name: 614–103 Ransom Island/Ransom Island Spoil

Location

Latitude: 27.86 **Longitude:** -97.15 **Area:** 3.1965 ha **Elevation:** 1.5 m
Length: 352.4 m **Width:** 102.6 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal.

Predators: coyotes, raccoons, and fire ants

Substrate types: mud and sand

Summary: This site consists of seven dredge material islands southwest of Ransom Island. Vegetation includes halophytes, some black mangrove and cordgrass.

Nesting/Use History

Colonial waterbirds nested here until the early 1980s.

Discussion and Management Recommendations

Enhancements to this site can be accomplished in conjunction with the proposed development of Ransom Island. Recommendations:

1. If deposition in this area occurs, establish a two-acre site on island seven (islands are numbered from east to the west starting at Ransom Island).
2. Once completed, the island should be stabilized with geo-tubes. An area of calm water within the geo-tubes is desirable.
3. Islands five and six should be removed and a channel created immediately to the east of island seven.
4. Posting to prohibit human activity during nesting season will be desirable.

Island 614–102

Old Name: 614–102 Aransas Channel Spoil

Location

Latitude: 27.90 **Longitude:** -97.12 **Area:** .7902 ha **Elevation:** 0.8 m
Length: 290 m **Width:** 23 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is limited.

Predators: raccoons

Substrate types: mud and sand

Summary: This site consists of ten low, deposition islands (four running east to west, six running south to north) on the northern edge of Aransas Channel and immediately east of 614–101. Vegetation includes cordgrass and black mangroves, the largest reaching one meter in height.

Bird Survey 1997 – 2003

614-102	1997	1998	1999	2000	2001	2002	2003
GBHE							
GREG			7				
SNEG			15				
LBHE			1				
TRHE	14		97				
REEG			6				
BCNH							
WFIB							
LAGU	70		7				
GBTE							
CATE							
ROYT							
FOTE			95				
LETE	11						

Nesting/Use History

Mangroves are used by least bitterns and clapper rails. Colonial waterbirds have not nested here within the past several years, however some use the marsh for feeding.

Discussion and Management Recommendations

Recommendations:

1. Use deposition to enlarge the southeastern and northern islands to a size of one to two acres each
2. Establish and manage sea oxeye as the dominant plant.
3. Install nesting platforms as appropriate.
4. Stabilize the shoreline.
5. Manage predators.
6. Posting to prohibit human activity during nesting season is desirable.

Island 614-101

Old Name: 614-101 Aransas Pass Spoil

Location

Latitude: 27.89694 **Longitude:** -97.14194 **Area:** 12.3033 ha **Elevation:** 2.4 m
Length: 896 m **Width:** 77.4 m

Description

Ownership: City of Aransas Pass

Impacts: Disturbance is minimal.

Predators: coyotes, raccoons and fire ants

Substrate types: mud and sand

Summary: A dredge material island located immediately east of Conn Brown Harbor and east of the GIWW. The northeastern end is surrounded by a levee. Vegetation found along the periphery of the island includes cordgrass, wolfberry, halophytes and other species common to the salt marsh, including black mangrove. Dense mangrove habitat is also found on the northeastern shoreline.

Bird Survey 1997 – 2003

614-101	1997	1998	1999	2000	2001	2002	2003
LETE							20
BLSK							

Nesting/Use History

The mangroves are host to breeding least bitterns and clapper rails. Colonial waterbirds also feed and roost in this habitat.

Discussion and Management Recommendations

There are no recommendations for this site.

Island 614–100

Old Name: 614–100 Danger Island

Location

Latitude: 27.90778 **Longitude:** -97.12583 **Area:** 20.1583 ha **Elevation:** 2.0 m
Length: 720 m **Width:** 349.4 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal.

Predators: coyotes, raccoons and fire ants

Substrate types: mud and sand

Summary: This dredge material island is located near GIWW marker 35 and is surrounded by a dike. Vegetative features include regenerated natural areas along the periphery, a small marsh of mangrove and smooth cordgrass at the northern shoreline. The greatest plant diversity occurs within the dike including a mott of mesquite on north end, smooth cordgrass, halophytes, sea oxeye, false ragweed, wolfberry, shoregrass, saltgrass, pigweed, bluestem, dropseed, false willow, sunflower, camphorweed, camphor daisy and various other coastal island species. Also some bare ground is present.

Bird Survey 1997 – 2003

614-100	1997	1998	1999	2000	2001	2002	2003
GBHE					2	1	
GREG							
SNEG							
LBHE							
TRHE							
REEG							
CAEG							
BCNH							
WFIB							
LAGU							
GBTE							
CATE							
ROYT							
LETE							
BLSK							

Nesting/Use History

Between 1977 and 1993 a considerable number of wading birds and gulls nested at this site. Presently, two pair of great blue herons annually nest in the mesquite trees. Wading birds use this site for feeding and roosting. Other species observed using the island include willet, black-necked stilt, Wilson's plover, common nighthawk and red-winged blackbird.

Discussion and Management Recommendations

Recommendations:

1. Deposition at this is site for the enhanced production of colonial waterbirds is desirable. However, dredge placement operations should not impact existing groves of trees or shrubs.
2. Manage predators.
3. When colonial waterbirds are nesting, limited human access is recommended. Allow no disturbances from March 1 – September 1.

Island 609–501a

Old Name: 609–501 Long Reef / Deadman Island

Location

Latitude: 28.065 **Longitude:** -96.96277 **Area:** .8707 ha **Elevation:** 1.0 m
Length: 380.7 m **Width:** 40.6 m

Description

Ownership: Texas General Land Office, leased by Texas Audubon Society

Impacts: Disturbance is minimal.

Predators: fire ants

Substrate types: The island was formed from dredge material placed on a shell reef.

Summary: This site is located in northeastern Aransas Bay, southeast of Long Reef. Only about 20 percent of the original island remains. Vegetation consists mainly of annual forbs, especially common are sunflower and some halophytes.

Bird Survey 1997 – 2003

* Data includes colony 609-501B.

609-501	1997	1998	1999	2000	2001	2002	2003
BRPE							
GBHE	9	7	4	7	13	8	7
GREG	52	40	18		25	30	48
SNEG			1			3	8
LBHE		1				4	
TRHE					10	2	1
REEG		1			5		12
CAEG		1					
BCNH	6	8	2		2		2
LAGU	565	135	85	33	80	227	140
GBTE		7					60
CATE			38				18
ROYT	525	445	340	747	55	424	400
SATE	350	256	235	1177	8	777	
FOTE	86		3				
LETE							
SOTE							
BLSK	40	64	52	42	61	47	32

Nesting/Use History

This site has always been used by colonial waterbirds.

Discussion and Management Recommendations

Recommendations:

1. Deposition of a three-acre island with erosion protection of rocks or geo-tubes is desirable.
2. Island should be managed for skimmers, terns and wading birds.
3. Manage fire ant population.
4. Install and maintain signs prohibiting human activity during nesting season.

Island 609–501b

Old Name: 609–501 Long Reef/Deadman Island

Location

Latitude: 28.08 **Longitude:** -96.97 **Area:** .7926 ha **Elevation:** 1.0 m
Length: 204 m **Width:** 78.1 m

Description

Ownership: Texas General Land Office, leased by Texas Audubon Society

Impacts: Disturbance is minimal.

Predators: fire ants

Substrate types: shell and sand

Summary: This dredge material island is located in Aransas Bay, northwest of Deadman Island and across the GIWW. Only about 50% of the original island remains due to subsidence and erosion. The island supports various grasses and forbs. Especially common are halophytes and sunflower during the warm season. The site also has an area of unvegetated shell.

Bird Survey 1997 – 2003

* Data included with colony 609-501A.

Nesting/Use History

Nesting colonial waterbirds have always used this site. It has also been a historically important site for nesting royal and Sandwich terns.

Discussion and Management Recommendations

Recommendations:

1. Deposition of a three-acre island with erosion protection from rocks or geo-tubes is desirable.
2. Manage for terns, skimmers and wading birds.
3. Manage fire ant population.
4. Install and maintain signs prohibiting human activity from March 1 – September 1.

Island 609–482a

Old Name: 614–492 Rockport Beach Park

Location

Latitude: 28.03 **Longitude:** -97.04 **Area:** 2.9003 ha **Elevation:** 1.5 m
Length: 323.2 m **Width:** 102.4 m

Description

Ownership: City of Rockport, managed by Aransas Bird & Wildlife Club

Impacts: There is considerable development at this site including manicured beaches and lawns, and a constructed bird watching platform south of the boat launch that provides views of the nesting colonial waterbirds on South Island and vistas across Little Bay. Human disturbance is minimal except for fireworks activities occurring around July 4th.

Predators: fire ants, cats, dogs, raccoons and people

Substrate types: N/A

Summary: This site is a natural peninsula developed as a manicured city beach park. There is a natural smooth cordgrass marsh along northeast shoreline. A fence along the east is designed to protect the colony of skimmers from pets, people and cars.

Bird Survey 1997 – 2003

* Data included with colony 609-482B (following).

Nesting/Use History

A highly managed skimmer colony is located on the northwest shoreline. Tri-colored herons nest in the cordgrass marsh.

Discussion and Management Recommendations

Recommendations: N/A

Island 609–482b

Old Name: 614–482 Little Bay

Location

Latitude: 28.03277 **Longitude:** -97.03694 **Area:** 3.3301 ha **Elevation:** 1.5 m
Length: 382.3 m **Width:** 100.9 m

Description

Ownership: Aransas County Navigation District, managed by Friends of Connie Hagar

Impacts: A shell pad was installed near the summit of South Island twenty years ago but is no longer visible. Disturbance is minimal even though human activity in the area is high. Fireworks on and around July 4th cause problems.

Predators: fire ants

Substrate types: sand and mud

Summary: This site consist of two dredge material islands – North Island and South Island - located immediately west of Rockport Beach Park, Little Bay. The islands have received enhancements for waterbirds including platforms for nesting wading birds and planted salt cedar saplings for additional cover near the summit of North Island. Management actions were implemented in 2001 to accommodate nesting least terns and skimmers on South Island. The islands have considerable plant diversity. Commonly found plants include sea oxeye, prickly pear, false ragweed, wolfberry, shoregrass, saltgrass, salt cedar, mesquite, various grasses, Spanish dagger, common sunflower and halophytes. Smooth cordgrass is found along the shoreline of both islands. South Island has more forbs and fewer shrubs than North Island.

Bird Survey 1997 – 2003

* Data includes colony 609-482A

609-482	1997	1998	1999	2000	2001	2002	2003
GBHE	54	30	20	13	17	15	13
GREG	39	21	12	5	35	70	26
SNEG	14	71	16	3	49	57	22
LBHE	4						
TRHE	58	325	50	158	430	490	319
REEG	31	42	12	22	26	28	15
CAEG	8	3					
BCNH					2		
WFIB							
ROSP	18	13	4	4	10	58	2
LAGU		322		25	1599	1675	600
GBTE	650		135				

609-482	1997	1998	1999	2000	2001	2002	2003
LETE	36						
BLSK	315				253	325	181

Nesting/Use History

N/A

Discussion and Management Recommendations

Recommendations:

1. Management actions to accommodate nesting least terns and skimmers should continue.
2. Firework activities should be relocated during nesting season.
3. Manage fire ant population.

Island 609–424

Old Name: 609–424 Third Chain of Islands

Location

Latitude: 28.1488 **Longitude:** -96.87277 **Area:** 2.46 ha **Elevation:** 1.0 m
Length: 1610.5 m **Width:** 41.5 m

Description

Ownership: Texas General Land Office, leased by Texas Audubon Society

Impacts: Disturbance is minimal.

Predators: fire ants and possibly raccoons

Substrate types: shell

Summary: This site consists of several tiny natural islands and spits. The islands feature areas of bare shell beaches and ridges, halophytes, grasses and various forbs.

Bird Survey 1997 – 2003

609-424	1997	1998	1999	2000	2001	2002	2003
GBHE	1	3				4	1
GREG							
SNEG							
LBHE							
TRHE	1					3	
REEG							
LAGU	13	4	6		18	9	
GBTE	34			16	18		
CATE		13				5	
ROYT		1					
FOTE	93	22	24	32	36	28	
LETE			6		21		4
BLSK	166	150	113	205	122	18	8

Nesting/Use History

Historically, the islands were used by wading birds, gulls, terns and skimmers. Their usage has declined somewhat over time. Years in which only tall waders and sparse bare-ground nesters are present are probably affected by presence of predators.

Discussion and Management Recommendations

Recommendations:

1. Deposition of a three-acre, dome shaped island in this area is desirable. Establish erosion control measures such as geo-tubes or rocks.
2. Islands should be posted to prohibit human activity during nesting season.
3. Manage for predators and fire ants.

Island 609–422

Old Name: 809–422 Second Chain of Islands

Location

Latitude: 28.19277 **Longitude:** -96.815 **Area:** 1.3161 ha **Elevation:** 1.6 m
Length: 278.5 m **Width:** 69.5m

Description

Ownership: Texas General Land Office, leased to Texas Audubon Society

Impacts: Disturbance is minimal.

Predators: Raccoons were removed from the islands in 1992. The only remaining predators are fire ants.

Substrate types: shell beaches, ridges and spits

Summary: This site consists of six natural islands located in the Aransas National Wildlife Refuge, east of the GIWW and southeast of a whooping crane observation tower. The total area of the site is approximately two hectares. Vegetation found here includes grass and Tamaulipan shrubs to one meter, scattered mesquite trees and Spanish dagger.

Bird Survey 1997 – 2003

609-422	1997	1998	1999	2000	2001	2002	2003
BRPE							
GBHE	25	35	14	21	22	40	25
GREG	84	165	55	15	48	132	198
SNEG	41	161	42	60	52	140	136
LBHE			20		10		
TRHE	137	235	95	343	82	317	125
REEG	10	80	23	90	23	63	43
CAEG							
BCNH	3	62	16	29	5	25	30
WHIB		2	5	2	10	18	
WFIB							177
ROSP	22	68	30	43	71	56	175
LAGU	702	850	350	365	352	457	501
GBTE	41	15		65	42	58	15
CATE	186	78	3		55	2	71
ROYT	6	3	1	71		60	
SATE							
FOTE	92	1		45			
LETE		4	1		21		
SOTE			1				
BLSK	133	120	9	111	96	142	85

Nesting/Use History

Brown pelicans nested here until 1962.

Discussion and Management Recommendations

Few natural islands like this remain. Deposition in this area is not opposed.

Recommendations:

1. Manage predators and fire ants.
2. The islands should be closed to humans and pets from March – September 1.

Island 609-340

Old Name: 609-340 Steamboat Island

Location

Latitude: 28.31 **Longitude:** -96.62 **Area:** 31.7748 ha **Elevation:** 1.2 m
Length: 1368 m **Width:** 420 m

Description

Ownership: Texas General Land Office

Impacts: N/A

Substrate types: sand, shell and silt.

Summary: Two natural islands located in extreme northeastern San Antonio Bay. The largest island contains a considerable diversity of halophytes, some shrubs, and yuccas to 2 meters tall. The smaller island is mainly shell beaches, halophytes and common sunflowers in the late spring and during summer.

Bird Survey 1997 – 2003

609-340	1997	1998	1999	2000	2001	2002	2003
BRPE					not surveyed		
GBHE			1				
GREG			1				
SNEG		18		5			
LBHE			13				
TRHE		40	6	2		17	
REEG		4	3	2			
CAEG							
BCNH							
ROSP				1			
LAGU	150	90	65	10		191	
GBTE							
CATE			1			9	
ROYT	10						
BLSK	80	159	1	54			

Nesting/Use History

Great blue herons once nested in yuccas on the largest island. Other wading birds and some bare ground species preferred the smaller island. The best year for the two islands was in 1977.

Discussion and Management Recommendations

In San Antonio Bay there were once 16 islands used by colonial waterbirds. Today, all but three have vanished due to erosion or subsidence. Recommendations:

1. Restoration of Big Bird Spoil (609–321) through deposition is desirable.
2. Create a four-acre island at 609–260, south of Seadrift.
3. Once islands are formed, stabilize the shoreline.
4. Manage for terns, skimmers and wading birds.
5. Manage predators.
6. Install and maintain signs prohibiting human activity from March 1 – September 1.

Island 609–322

Old Name: 609–322 Marker 18 Spoil

Location

Latitude: 28.36 **Longitude:** -96.71 **Area:** 0.13 ha **Elevation:** 1.0 m
Length: 95.7 m **Width:** 18.9 m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal.

Predators: fire ants

Substrate types: dredged mud and shell

Summary: This dredge material island is located in San Antonio Bay, west of Mesquite Point and north of the channel to Seadrift and Victoria. Vegetation consists of mainly sea oxeye, some wolfberry, shoregrass, saltgrass, halophytes and pigweed. A shell beach is found on the southeast shoreline.

Bird Survey 1997 – 2003

609-322	1997	1998	1999	2000	2001	2002	2003
GBHE	1						not surveyed
FOTE	45						
BLSK	6						

Nesting/Use History

N/A

Discussion and Management Recommendations

In the 1980s sixteen islands existed in San Antonio Bay. All but three have eroded or subsided.

Recommendations:

1. Deposition and restoration of several islands is needed. Recommend deposition for Big Bird Spoil (609–321) and a four-acre island for island 609–260.
2. Once the islands are formed, install shoreline stabilization.
3. Manage sites for terns, skimmers and wading birds.
4. Manage predators.
5. The islands should be posted prohibiting human activity from March 1 – September 1.

Island 609–321

Old Name: 609–321 Big Bird Island

Location

Latitude: 28.27694 **Longitude:** -96.73583 **Area:** .0355 ha **Elevation:** 1.0 m
Length: 74.72 m **Width:** 6.5 m

Description

Ownership: Texas General Land Office

Impacts: Gas pump stations are nearby. Disturbance is minimal.

Substrate types: sand and shell

Summary: This dredge material island is located in San Antonio Bay along the GIWW, southeast of Mesquite Point. It has eroded to the point of submersion.

Bird Survey 1997 – 2003

609-321	1997	1998	1999	2000	2001	2002	2003
SNEG		18	not surveyed		submerged	submerged	submerged
TRHE		4					
REEG		4					
LAGU		90					
GBTE							
FOTE							
LETE	175						
BLSK		159					

Nesting/Use History

Colonial waterbirds, in particular bare-ground nesters and small waders, were first reported from this island in 1984. The island once supported various low halophytic vegetation such as sea purslane, sea oxeye and wolfberry, but eroded over time due to its exposure to wave activity. As of 2001, the island has been under water.

Discussion and Management Recommendations

Many of the islands which once supported colonial waterbirds in San Antonio Bay are now submerged. However, their relative isolation from mainland predators makes them ideal candidates for restoration through spoil deposition.

Recommendations:

7. Restoration of Big Bird Island through deposition is desirable.
8. Once the island is formed, the shoreline should be stabilized with geo-tubes.
9. Manage for terns, skimmers and wading birds.

10. Manage predators.
11. Install and maintain signs prohibiting human activity from March 1 – September 1.

Island 609-320

Old Name: Turnstake/Turnstake Spoil

Location

Latitude: 28.32 **Longitude:** -96.68 **Area:** 10.9406 ha **Elevation:** .5 m
Length: 582.7 m **Width:** 233.7 m

Description

Ownership: Texas General Land Office and local navigation district

Impacts: N/A

Substrate types: sand and shell

Summary: In 1980 three dredge material islands (~2 ha), located near junction of Victoria Barge Canal and GIWW. A small portion of one island remains (.6 ha).

Bird Survey 1997 – 2003

609-320	1997	1998	1999	2000	2001	2002	2003
GBHE							
GREG							
SNEG							
TRHE							
REEG							
CAEG							
BCNH	1						
LAGU							
GBTE							
CATE							
FOTE							
LETE							
BLSK							

Nesting/Use History

Before 1980 a considerable number and diversity of wading birds and bare ground species utilized the three islands for nesting.

Discussion and Management Recommendations

1. Deposition of new dredge material recommended, suggest a three-acre island.
2. Any new material should be protected with geo tubes.
3. Once established signs should be posted to deter human activity from March 01 through September 01.

4. Once restored management of exotics is encouraged

Island 609–280

Old Name: 609–280 Seadrift Islands

Location

Latitude: 28.3977 **Longitude:** -96.74 **Area:** .3569 ha **Elevation:** 1.5 m
Length: 366.7 m **Width:** 15m

Description

Ownership: Texas General Land Office

Impacts: Disturbance is minimal

Predators: fire ants and egg taking has occurred in the area

Substrate types: The island is composed of dredge material with shell beaches and ridges.

Summary: In 1973, more than 16 islands in San Antonio Bay were available for colonial waterbirds. Six dredge material islands were located south of Seadrift (609–280), and four east of Seadrift Harbor (609–281). Six others, including two natural islands, were located along the Victoria Barge Canal and GIWW. By 1980, two dredge material islands and two natural islands remained. The two natural islands were not used for nesting because of predators.

Five of the original sixteen islands remain and three continue to support small numbers of colonial waterbirds.

In 2001, only a small portion of one dredged island (609–280) remained. Vegetation includes common reed, sea oxeye, wolfberry, various halophytes, grasses, a few shrubs and marsh elder, to 0.5 meters.

Bird Survey 1997 – 2003

609-280	1997	1998	1999	2000	2001	2002	2003
GBHE	4	3	5	25	2	2	
GREG	62	23	28	27	8	32	
SNEG	25	13	15	9	3	1	7
LBHE		2		3			
TRHE	33	31	12	17	5	18	20
REEG	4	1		3			
CAEG	155	147	50	72	22	58	32
BCNH				2			
YCNH							
ROSP	59	16	27	18	34	16	
LAGU			9	8	14	32	
GBTE	107	9			7	2	
CATE			3			1	
ROYT			15				

609-280	1997	1998	1999	2000	2001	2002	2003
SATE						2	
FOTE	239	12	27	29	5		
LETE							
BLSK	477	90		55	15	34	

Nesting/Use History

The one remaining island is used by colonial waterbirds.

Discussion and Management Recommendations

Recommendations:

1. The existing dredge material island should be stabilized.
2. Deposition and restoration of a four-acre island is desirable. Install erosion protection for new islands with geo-tubes or rocks placed thirty to fifty feet off shore.
3. Manage for terns, skimmers and wading birds.
4. Manage predators.
5. Install and maintain signs prohibiting human activity from March 1 – September 1.

APPENDIX I – PLANTS REFERENCED IN THE TEXT

Common name	Scientific name
Australian pine	<i>Casuarina equisetifolia</i>
black mangrove	<i>Avicennia germinans</i>
brasil	<i>Condalia hookeri</i>
buffelgrass	<i>Pennisetum ciliare</i>
camphor daisy	<i>Machaeranthera phyllocephala</i>
camphorweed	<i>Heterotheca subaxillaris</i>
Carolina wolfberry	<i>Lycium carolinianum</i>
cattail	<i>Typha latifolia</i>
century plant	<i>Agave americana</i>
coastal bermuda	<i>Cynodon dactylon</i>
common reed	<i>Phragmites communis</i>
cordgrass	<i>Spartina</i> sp.
cowpen daisy	<i>Verbesina encelioides</i>
croton	<i>Croton punctatus</i>
dropseed	<i>Sporobolus</i> sp.
evening primrose	<i>Oenothera</i> sp.
false ragweed	<i>Parthenium confertum</i>
false willow	<i>Baccharis neglecta</i>
glasswort	<i>Salicornia</i> sp.
granjeno	<i>Celtis pallida</i>
guineagrass	<i>Panicum maximum</i>
huisache	<i>Acacia smallii</i>
Indian blanket	<i>Gaillardia pulchella</i>
johnsongrass	<i>Sorghum halepense</i>
Kleberg bluestem	<i>Andropogon annulatum</i>
lantana	<i>Lantana horrida</i>
marsh elder	<i>Iva frutescens</i>
mesquite	<i>Prosopis glandulosa</i>
mistflower	<i>Eupatorium</i> sp.
necklace pod	<i>Sophora tomentosa</i>
old man's beard	<i>Clematis drummondii</i>
oleander	<i>Nerium oleander</i>
pigeonberry	<i>Rivina humilis</i>
pigweed	<i>Chenopodium ambrosioides</i>
popinac, leadball	<i>Leucaena</i> sp.
prickly pear	<i>Opuntia lindheimeri</i>
rattlepod	<i>Sesbania drummondii</i>
retama	<i>Parkinsonia aculeata</i>
salt cedar	<i>Tamarix</i> sp.
saltgrass	<i>Distichlis spicata</i>

saltwort	<i>Batis maritima</i>
sandbur	<i>Cenchrus</i> sp.
scarlet pea	<i>Indigofera minuata</i>
sea lavender	<i>Limonium nashii</i>
sea oats	<i>Uniola paniculata</i>
sea ox-eye	<i>Borrichia frutescens</i>
sea purslane	<i>Sesuvium portulacastrum</i>
sea rocket	<i>Cakile lanceolata</i>
seablite	<i>Suaeda linearis</i>
seaside heliotrope	<i>Heliotropium curassavicum</i>
shoregrass	<i>Monanthochloe littoralis</i>
smooth cordgrass	<i>Spartina alterniflora</i>
Spanish dagger	<i>Yucca treculeana</i>
sugar hackberry	<i>Celtis laevigata</i>
sunflower	<i>Helianthus</i> sp.
widow's tears	<i>Commelina erecta</i>
wild indigo	<i>Baptisia bracteata</i>