



# Savannah Harbor Navigation Project

## Management To Benefit Birds

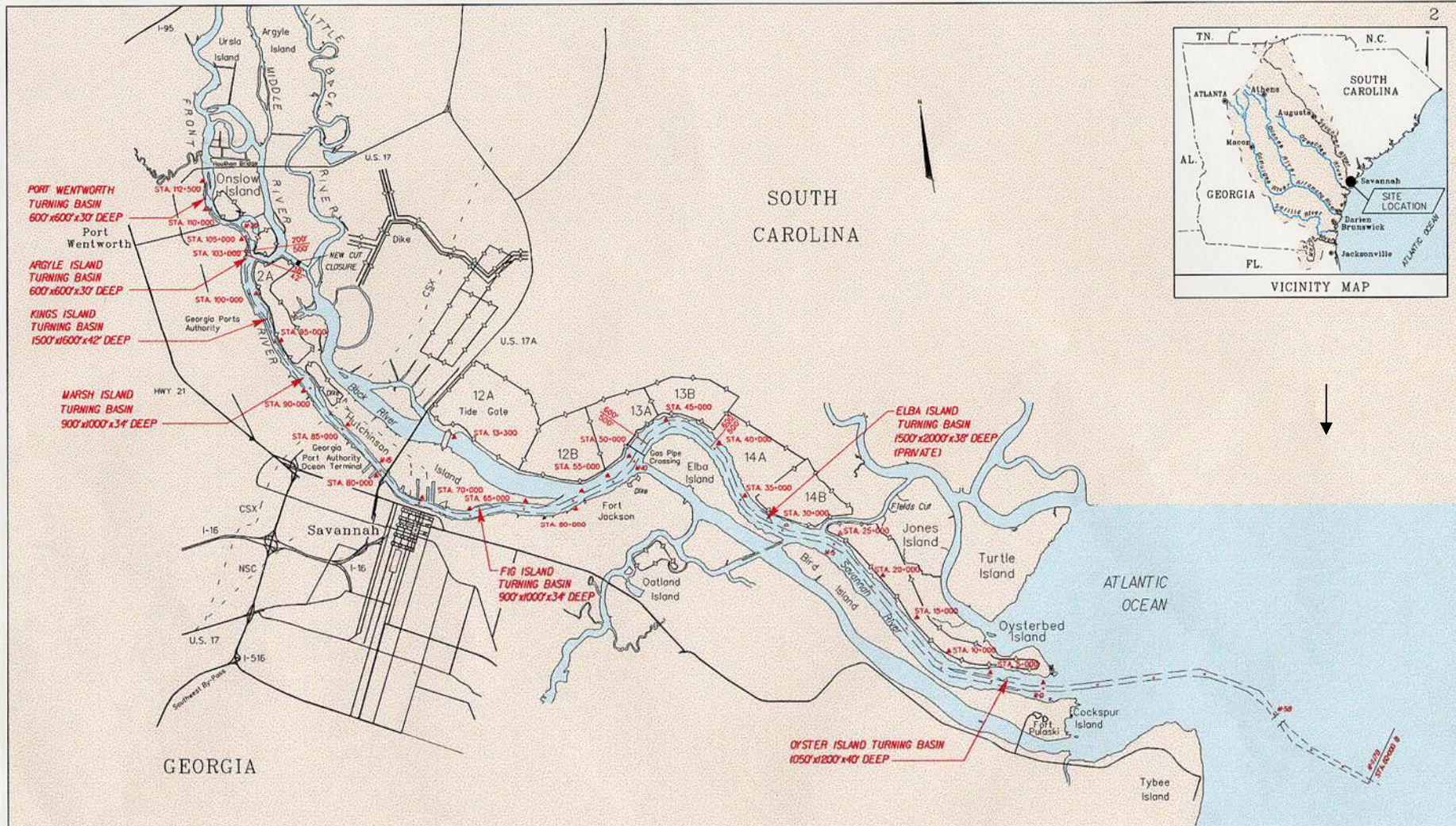
Presented by:  
Steve Calver, Biologist  
October, 2005



# THE NAVIGATION PROJECT

*Savannah District*

- ◆ Savannah Harbor is a major port
- ◆ Savannah Harbor Navigation Project is responsible for maintaining the channel
- ◆ 21 miles of inner harbor channel
- ◆ 11 miles of bar channel
- ◆ 7 active CDFs of 4800 acres



**PORT WENTWORTH TURNING BASIN**  
600'x600'x30' DEEP

**ARGYLE ISLAND TURNING BASIN**  
600'x600'x30' DEEP

**KINGS ISLAND TURNING BASIN**  
1500'x600'x42' DEEP

**MARSH ISLAND TURNING BASIN**  
900'x1000'x34' DEEP

**FIG ISLAND TURNING BASIN**  
900'x1000'x34' DEEP

**ELBA ISLAND TURNING BASIN**  
1500'x2000'x38' DEEP  
(PRIVATE)

**OYSTER ISLAND TURNING BASIN**  
1050'x1200'x40' DEEP

NOTE:  
ZERO MILE IS STATION 0+000 (VICINITY FT. PULASKI) MOUTH OF SAVANNAH RIVER

BRIDGES				
MILE	NAME	TYPE	HORIZONTAL CLEARANCE (FT.)	VERTICAL CL. M.H.W. (FT.)
14.9	U.S. HIGHWAY 17A	HIGH LEVEL	1,100.0	185.0
21.6	U.S. HIGHWAY 17	SWING	90.0	7.8

**SAVANNAH HARBOR, GEORGIA**

REVISED JULY 2001  
U.S. ARMY ENGINEER DISTRICT, SAVANNAH  
CORPS OF ENGINEERS  
SAVANNAH, GEORGIA



# REPUTATION FOR BIRDS

*Savannah District*

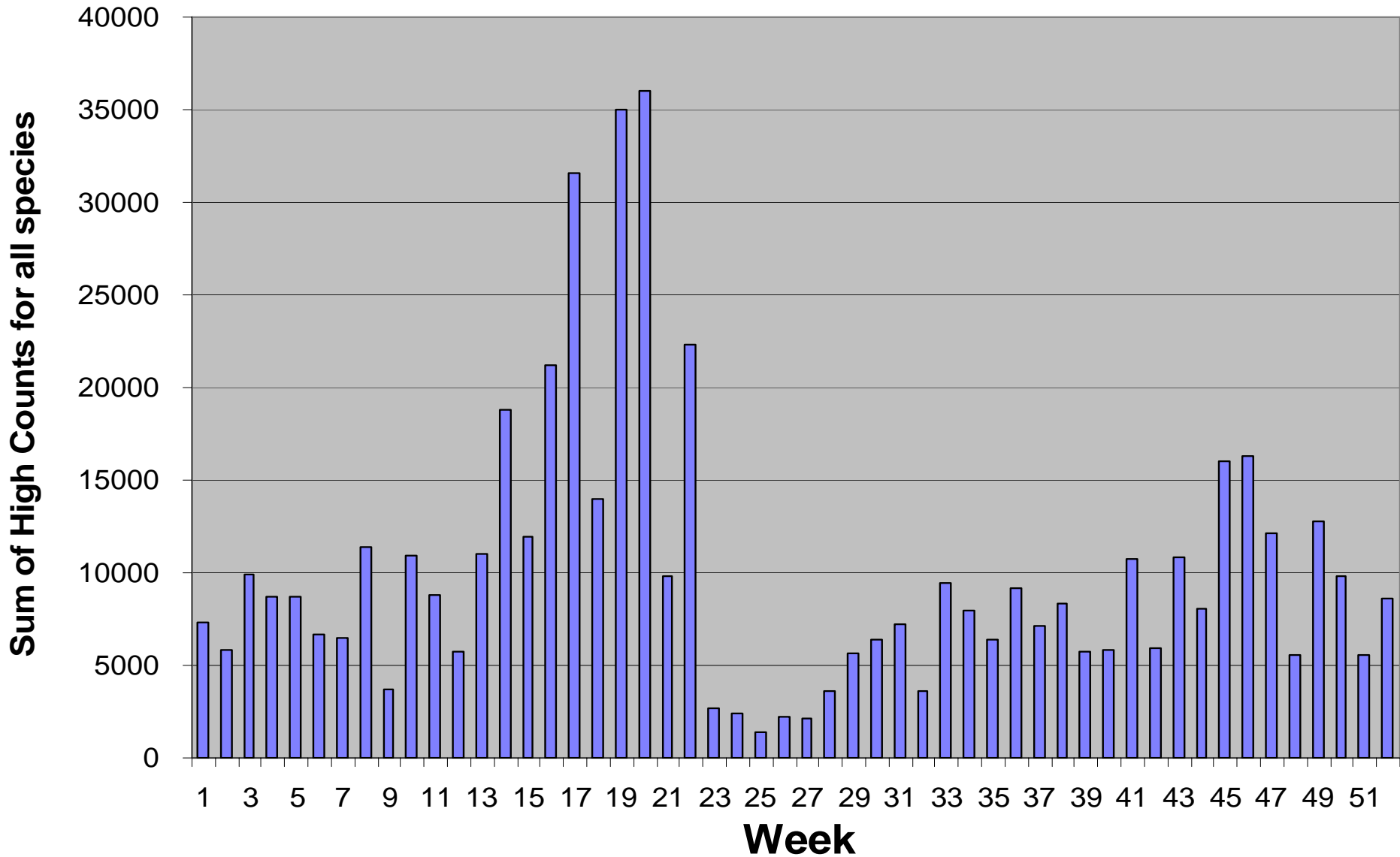
- ◆ **Known for attracting birds**
- ◆ **290 species documented**
- ◆ **Rare species**
- ◆ **Large numbers of shorebirds**
- ◆ **Large numbers of waterfowl**





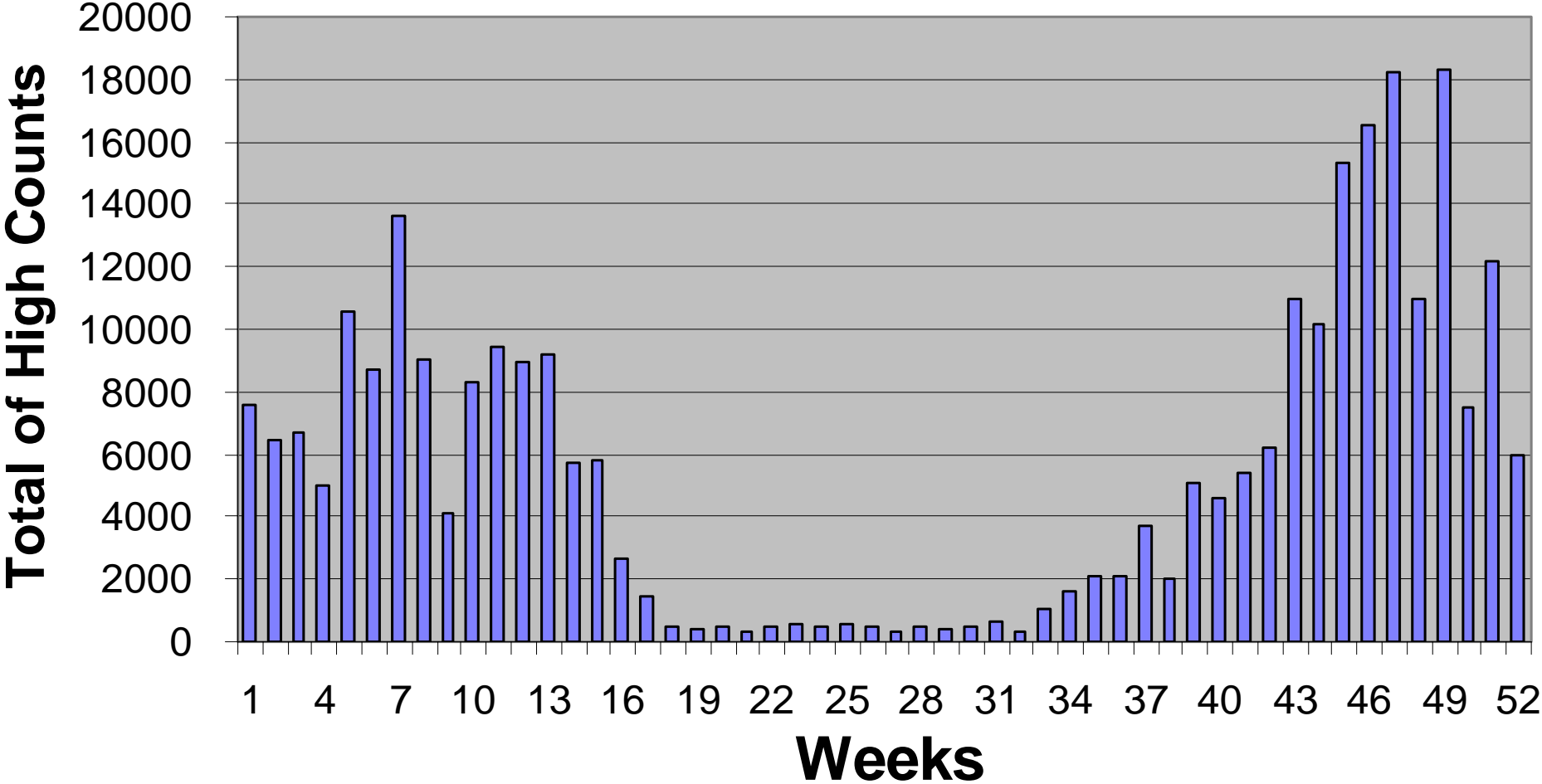
# LARGE NUMBERS OF SHOREBIRDS

## Shorebird Totals



# LARGE NUMBERS OF WATERFOWL

## Waterfowl High Counts Per Week







# STATE LISTED SPECIES

*Savannah District*

- ◆ **Several state-listed species have nested in the areas recently**
  - ◆ **Threatened**
  - ◆ **Special Concern/Candidates**

**THREATENED - LEAST TERN**



**THREATENED - WILSON'S PLOVER**

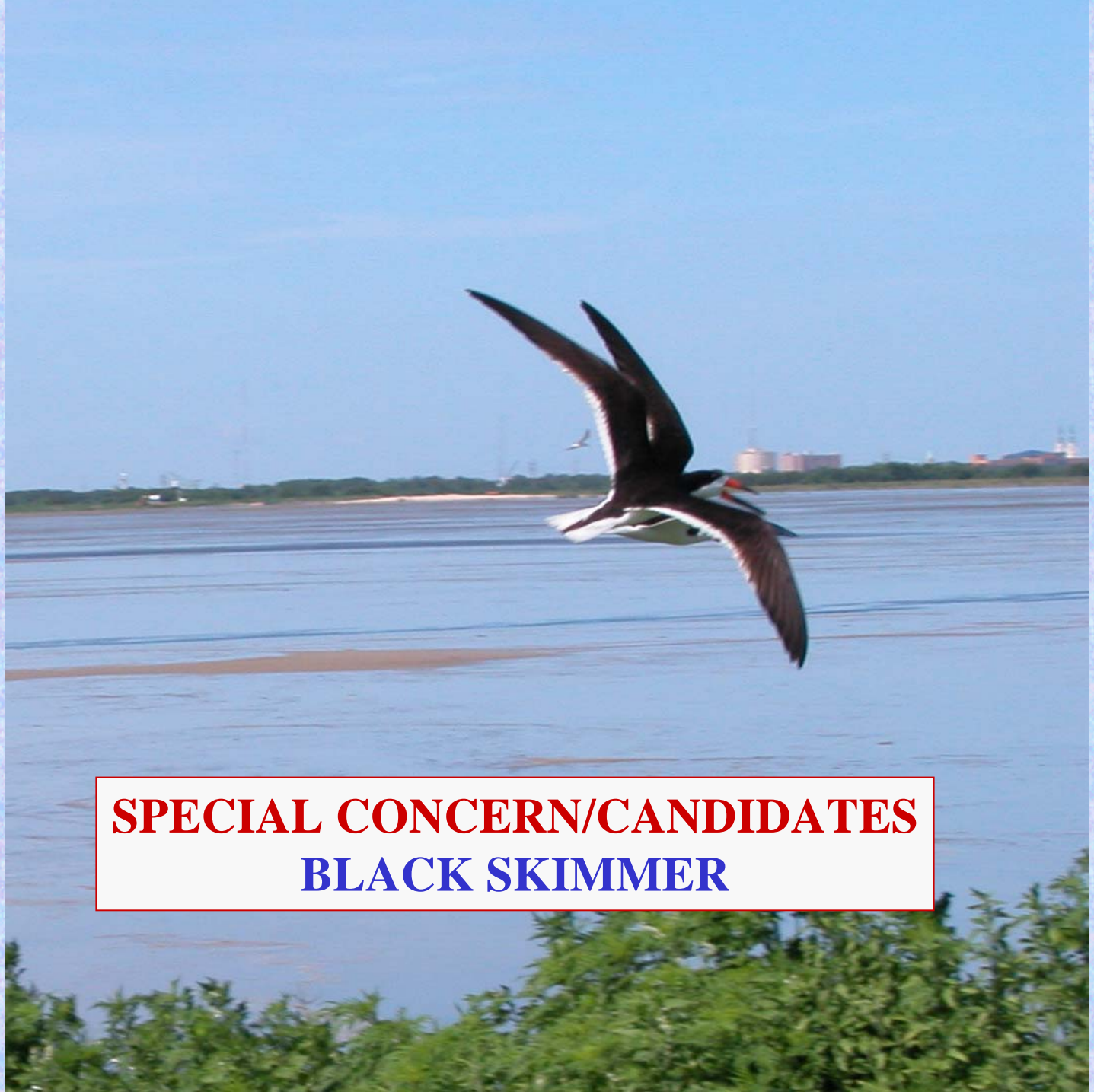


# THREATENED - GROUND DOVE



**SPECIAL CONCERN/CANDIDATES**  
**GULL-BILLED TERN**





**SPECIAL CONCERN/CANDIDATES**  
**BLACK SKIMMER**



**SPECIAL CONCERN/CANDIDATES**  
**LITTLE BLUE HERON**



**SPECIAL CONCERN/CANDIDATES**  
**GLOSSY IBIS**





# STATE LISTED SPECIES

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*Savannah District*

## ◆ Also of Special Concern/Candidates

◆ Bobwhite

◆ Painted Bunting



# BACKGROUND

*Savannah District*

- ◆ **In summary, it is clearly evident that dredged sediments can function beneficially as wildlife habitat.**
- ◆ **Many waterbirds suffer from declining habitat.**



**Beach nesting birds are at particular risk**



# PAST MANAGEMENT

*Savannah District*

- ◆ **Compliance with the intent of the Migratory Bird Treaty Act - to protect migratory birds and their nests, eggs, and young**



# PROBLEM

A Red-tailed Tropicbird is shown in profile, facing right, standing on a sandy beach. The bird has a long, dark, straight bill, a dark eye, and a dark cap. Its back and wings are a mix of white and reddish-brown feathers. The background consists of soft, undulating sand dunes under a bright sky.

**Our O&M activities must comply with Federal laws, but it is difficult to justify spending O&M funds to benefit wildlife**



**EO 13186 directs federal agencies to promote conservation of birds, implementing guidance for federal civil works projects not yet established**




*Savannah District*

# NORMAL OPERATIONS





**Dredged material is pumped into an upland confined disposal facility**



**As soon as disposal operations are completed, the site is dried as quickly as possible to allow consolidation of sediments**



**During this process, the area attracts many birds until it dries**



# SANDY AREAS

A wide-angle photograph of a sandy beach. The sand is light-colored and textured. Scattered across the beach are small, green, scrubby plants. In the background, the ocean meets a clear blue sky. The text is overlaid on the top half of the image.

During dredged material disposal, sandy sediments often fall out near the head section and produce good sources of borrow material

Sandy substrate often attract beach nesting birds

If borrowing is planned during the nesting season, we may place stakes and flagging to reduce attraction to nesting birds



**These areas are monitored during the Least Tern nesting season (1 Apr – 31 Aug) and no borrowing occurs if nesters are present**



*Savannah District*

# MOWING

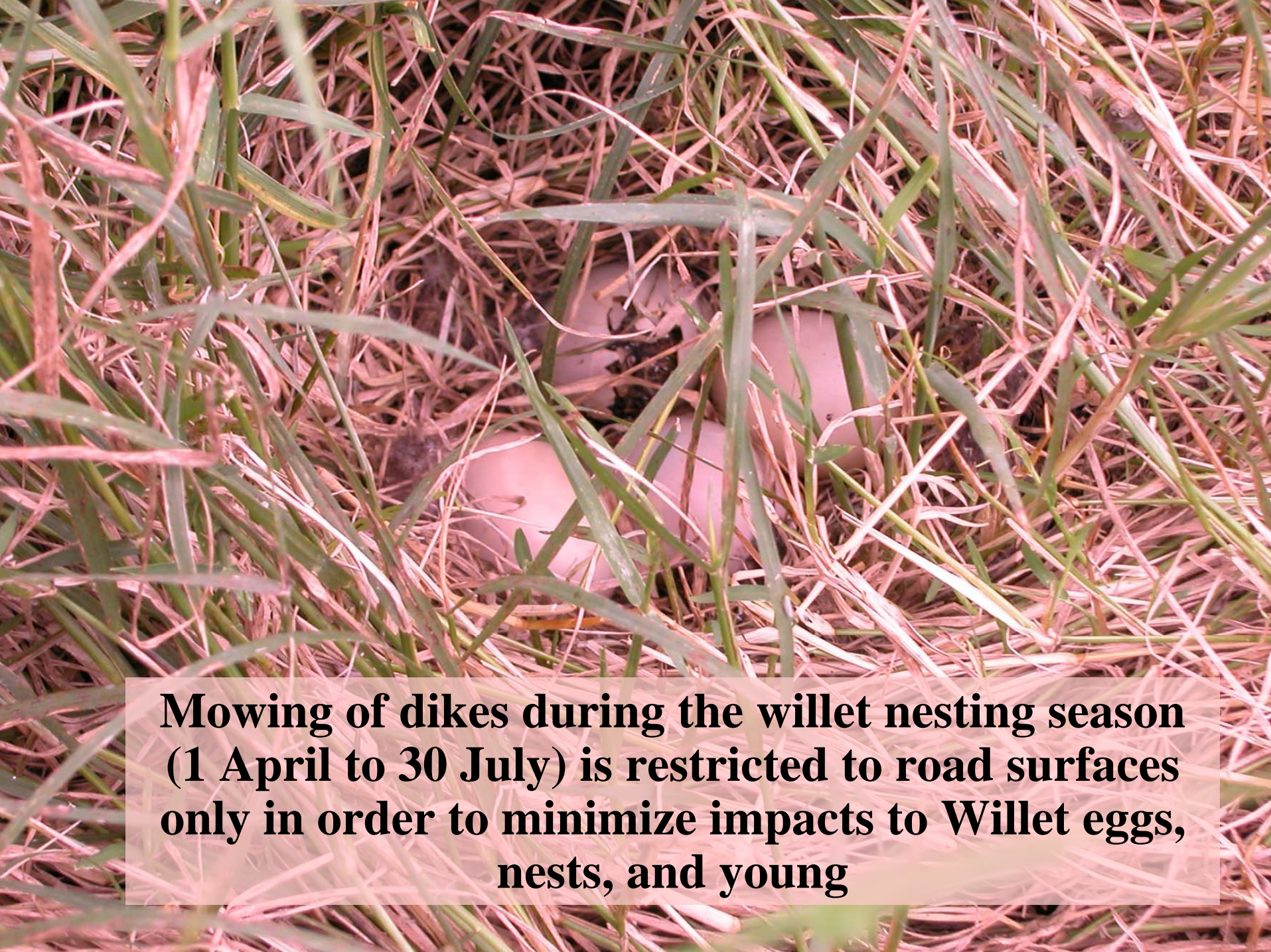
A long, straight dirt path runs along a dike, leading towards a large body of water in the distance. The path is flanked by green grass and some dry, yellowish vegetation. The sky is blue with light clouds. The water is calm and reflects the sky. The dike appears to be a barrier between the land and the water.

**Our dikes require mowing to allow safe travel and permit easy inspection**



A photograph of a Willet bird standing on a sandy beach. The bird is facing right, with its long, straight beak pointing towards the right edge of the frame. It has mottled brown and white feathers on its back and wings, and a lighter, speckled pattern on its chest and belly. Its legs are long and thin. The ground is a mix of sand and small pebbles, with some dried twigs scattered around. In the background, the calm water of a dike or canal meets the shore. The overall scene is a natural, undisturbed habitat for the bird.

**Our dikes also present attractive  
nesting habitat for Willets**

A close-up photograph of a Willet egg hidden in tall grass. The egg is a light, pinkish-brown color and is partially obscured by the blades of green and brown grass. The background is a dense thicket of similar grasses.

**Mowing of dikes during the willet nesting season (1 April to 30 July) is restricted to road surfaces only in order to minimize impacts to Willet eggs, nests, and young**





# THE PROGRAM

*Savannah District*

- ◆ **We have developed a program to conduct our O&M dredged material disposal operations in a way that benefits birds at a relatively small cost**
- ◆ **This program includes our past restrictions to ensure compliance with the Migratory Bird Treaty Act and adds requirements based on a wetland mitigation plan**



# LTMS

*Savannah District*

- ◆ **This program was included in a Long Term Management Strategy (LTMS) for the navigation project**
- ◆ **The LTMS was finished in 1996 and identified a need for additional dredged material disposal capacity**

 **An undiked area previously used for disposal operations was selected for use**

 **The area contained over 300 acres of wetlands**





# MITIGATION PLAN

*Savannah District*

- ◆ **No practicable mitigation sites could be located**
- ◆ **The primary functions of the wetlands to be impacted were identified**
- ◆ **We decided to address the primary wetland functions and values of the proposed area with separate mitigation actions**



# MITIGATION PLAN

*Savannah District*

- ◆ **Two primary functions were identified: fisheries habitat and wildlife habitat (especially bird feeding and nesting habitat)**
- ◆ **Separate actions were developed to address fisheries impacts**
- ◆ **Bird feeding habitat value would be replaced by conducting disposal operations through a rotation plan that created extra feeding habitat for birds**
- ◆ **Bird nesting habitat value would be replaced by building bird nesting islands**





# ROTATION PLAN

*Savannah District*

- ◆ A rotation plan was developed where areas are paired and one area is used for 3 years for dredged material disposal while the other one dries
- ◆ During the use time, water levels would be managed to maximize wildlife habitat benefit while ensuring minimal impacts to the disposal operation



# BENEFITS OF ROTATION PLAN

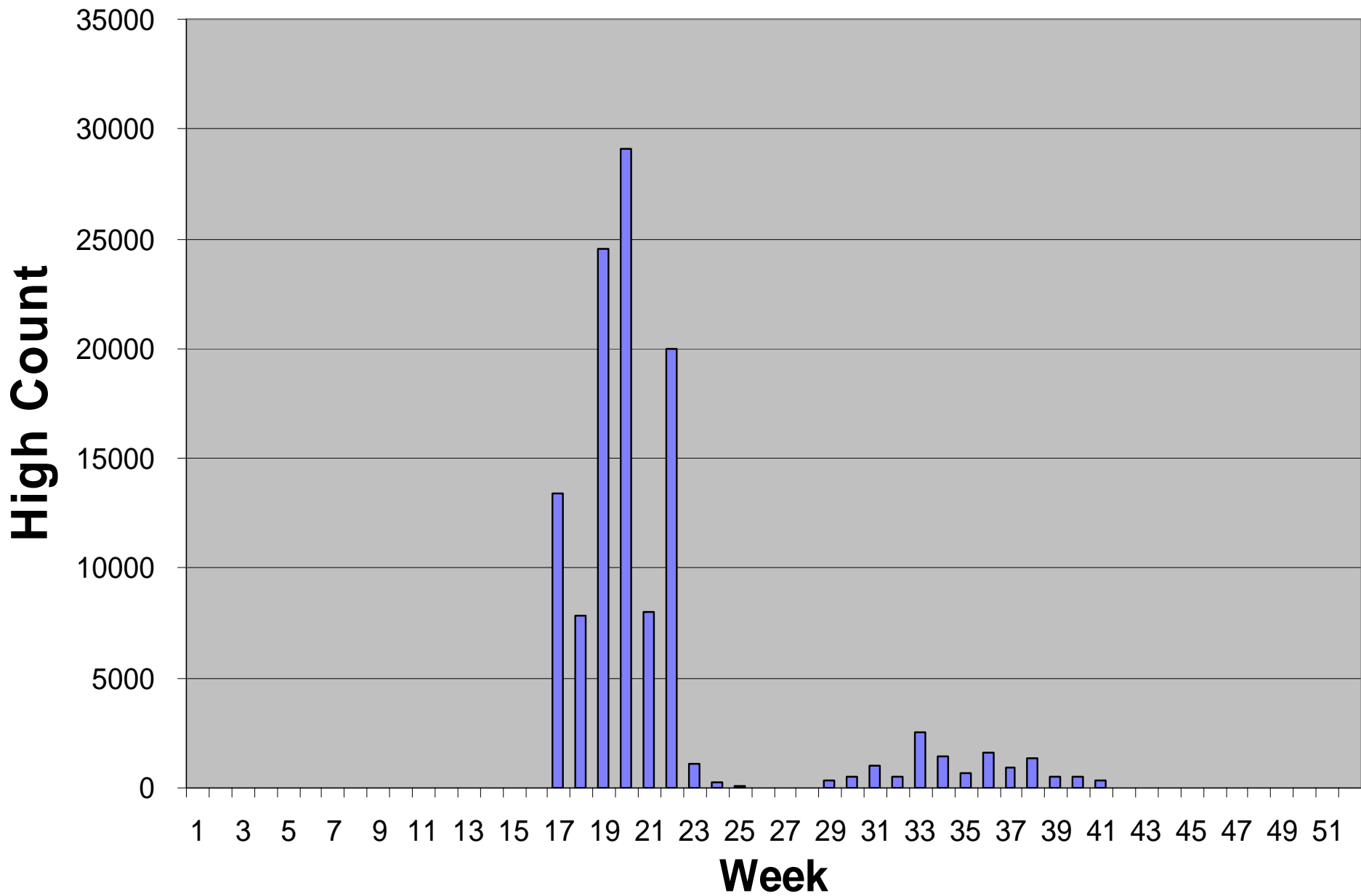


# SHOREBIRD FEEDING AND RESTING HABITAT

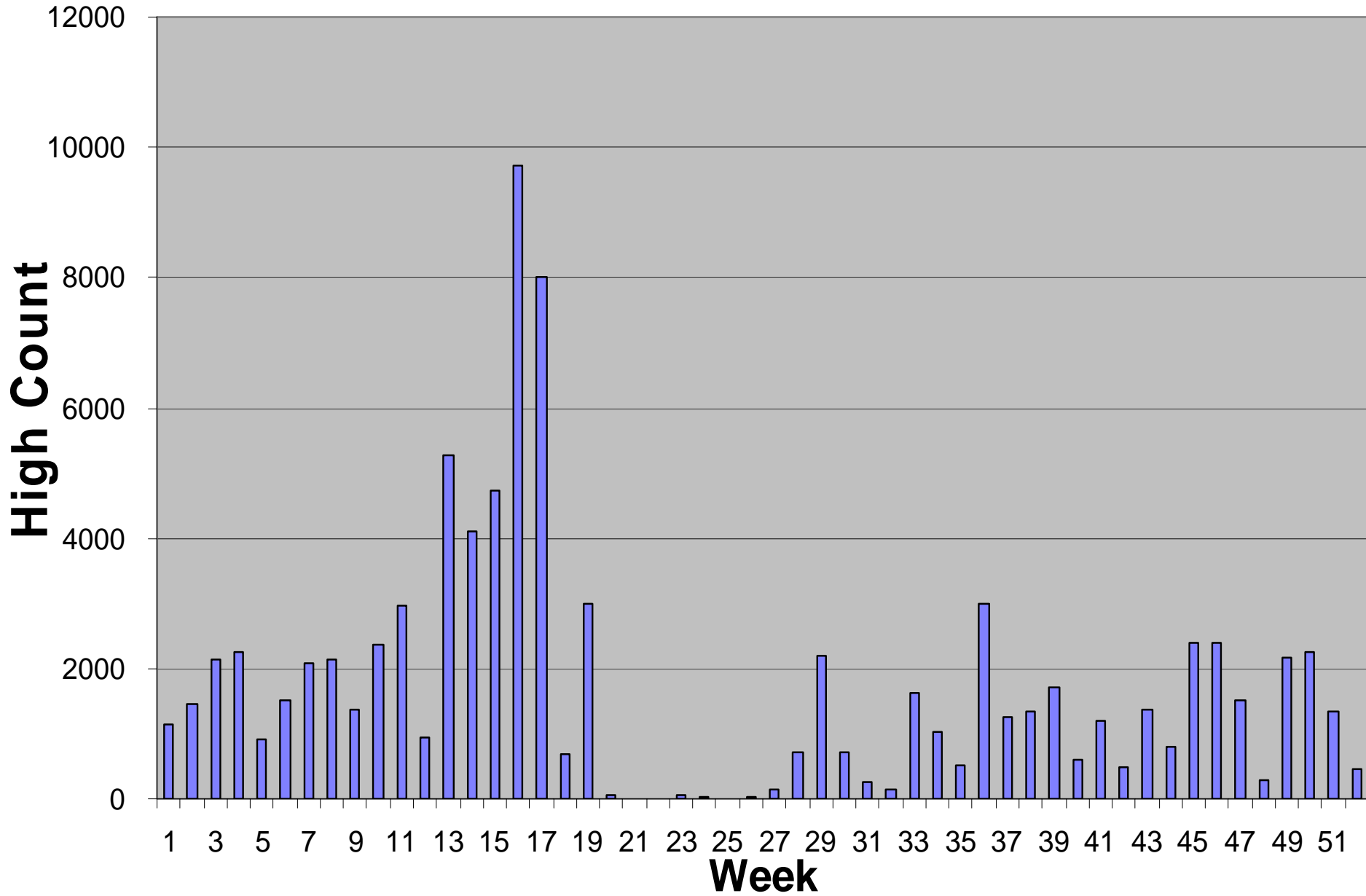




# Semipalmated Sandpiper



# Least Sandpiper





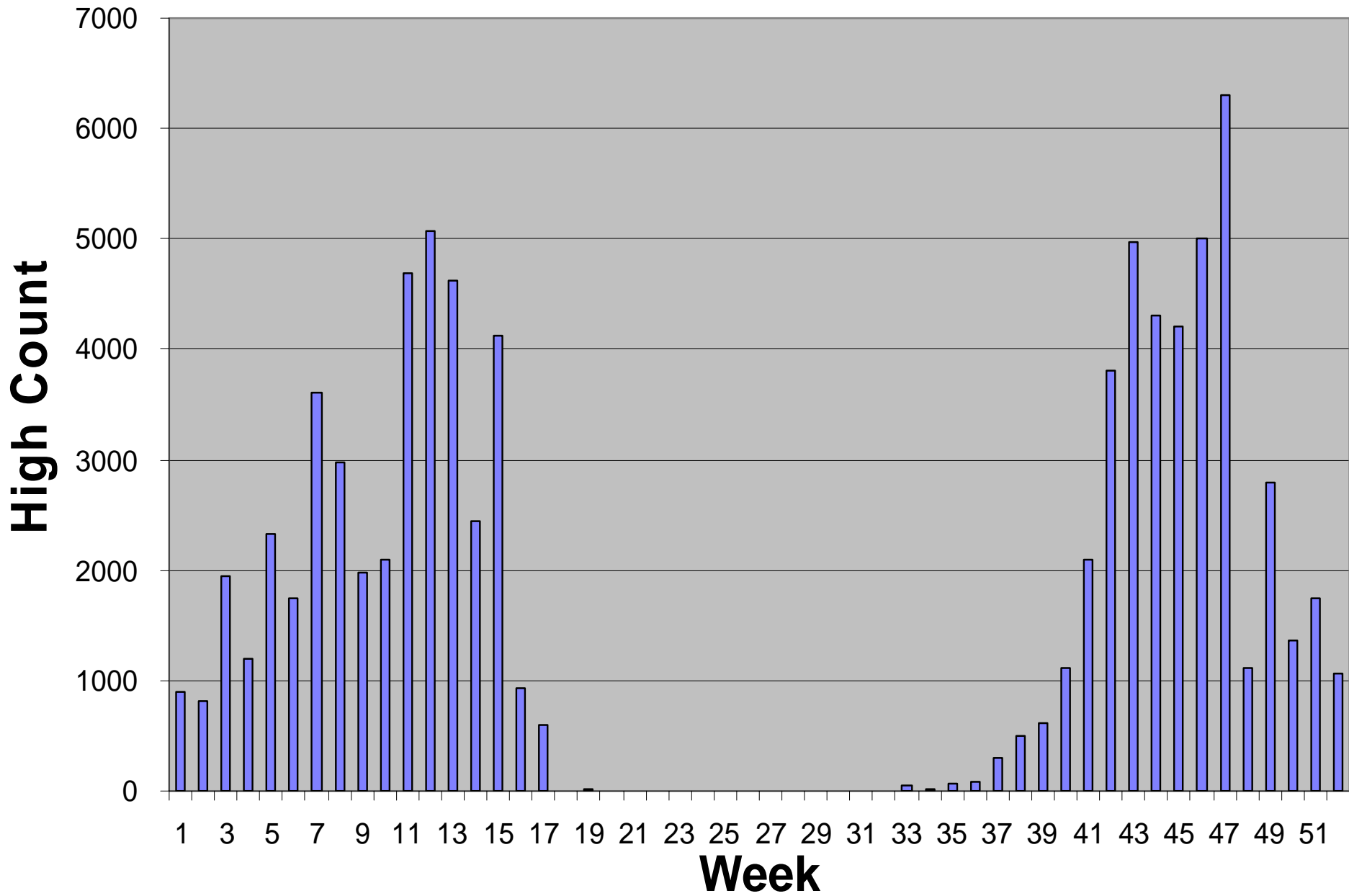




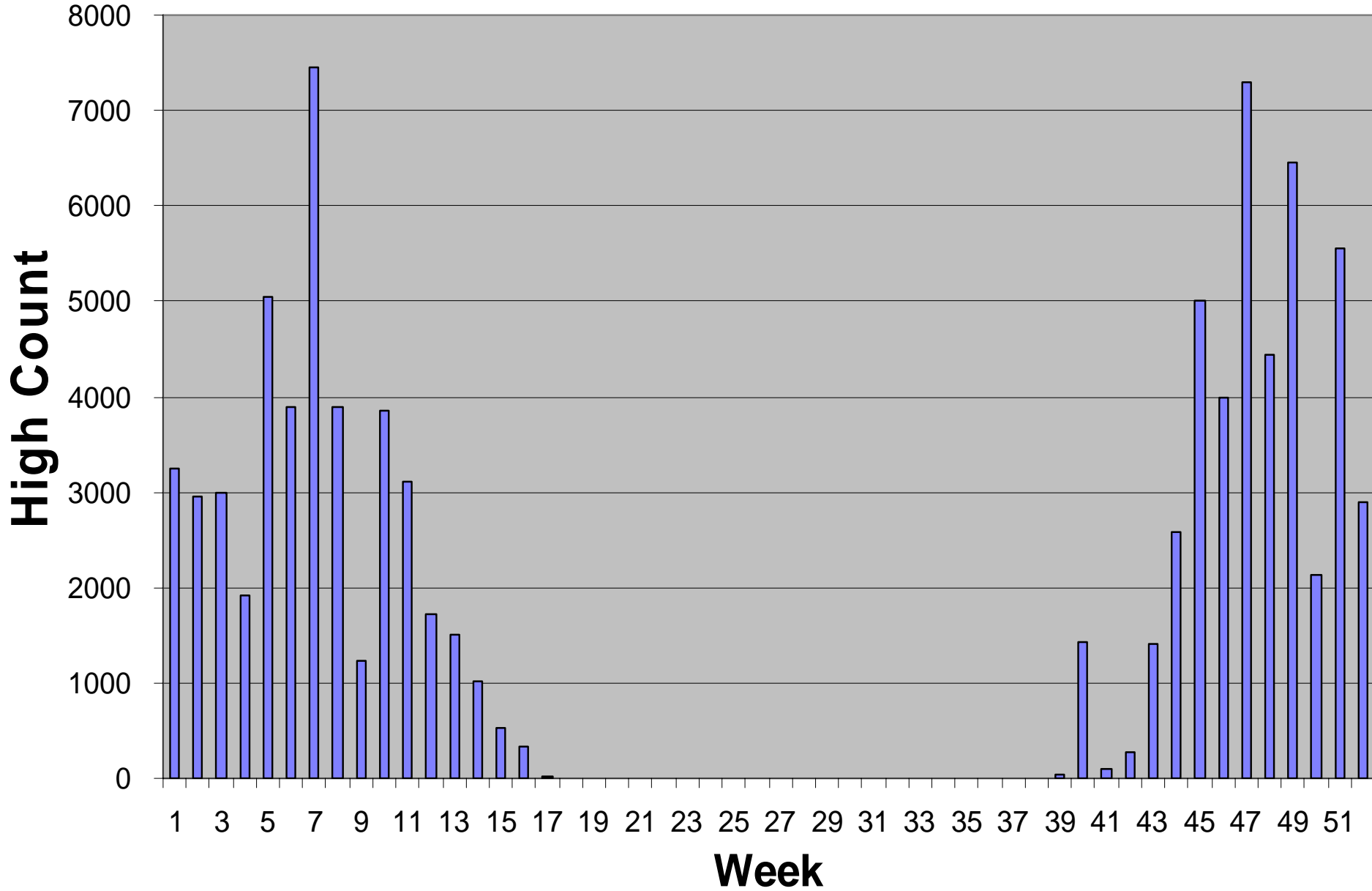
*Savannah District*

# WATERFOWL FEEDING AND RESTING HABITAT

# Northern Shoveler



# Green-winged Teal







# IMPROVED BIRD NESTING HABITAT

**Provides for more successful nesting**

# SHOREBIRDS



# SHOREBIRDS



**WATERFOWL**



**WATERFOWL**

# WADERS







# BIRD ISLAND NESTING HABITAT

*Savannah District*

- ◆ Bird nesting islands were built that provided undisturbed and predator free “beach” nesting habitat
- ◆ Two 1-acre nesting islands were built inside each approximately 1 square mile area.
- ◆ One 4-acre offshore bird island built





# SC STATE-LISTED <sup>\*1</sup> BEACH-NESTING BIRDS FOUND IN THE DISPOSAL AREAS

	1998	1999	2000	2001	2002	2003	2004	State Total <sup>*2</sup>
<b>Wilson's Plover High<sup>*3</sup></b>	24	33	13	7	16	16	39	
<b>Least Tern nesting pairs</b>	46	223	288	176	124	140	181	867 roof 500 beach 163 artificial (2003)
<b>Gull-billed Tern nests</b>	0	22	164	204	2	106	77	284 (2004)
<b>Black Skimmer nests or incubating</b>	0	21	70	141 <sup>*4</sup>	0	63	11	991 (2004)

\*1 Threatened or Species of Special Concern

\*2 From Tom Murphy, 10 Jan 05

\*3 High count for year, may include young

\*4 Apparently incubating adults







A large bird, possibly a frigatebird, is captured in flight over a beach. The bird's wings are spread wide, showing dark upper surfaces and lighter underparts. The background features a sandy beach, the ocean, and a clear blue sky. The text "The End" is overlaid in a large, bold, yellow font with a red outline.

**The End**