# Savannah Harbor Navigation Project

## Management To Benefit Birds

Presented by:
Steve Calver, Biologist
February, 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

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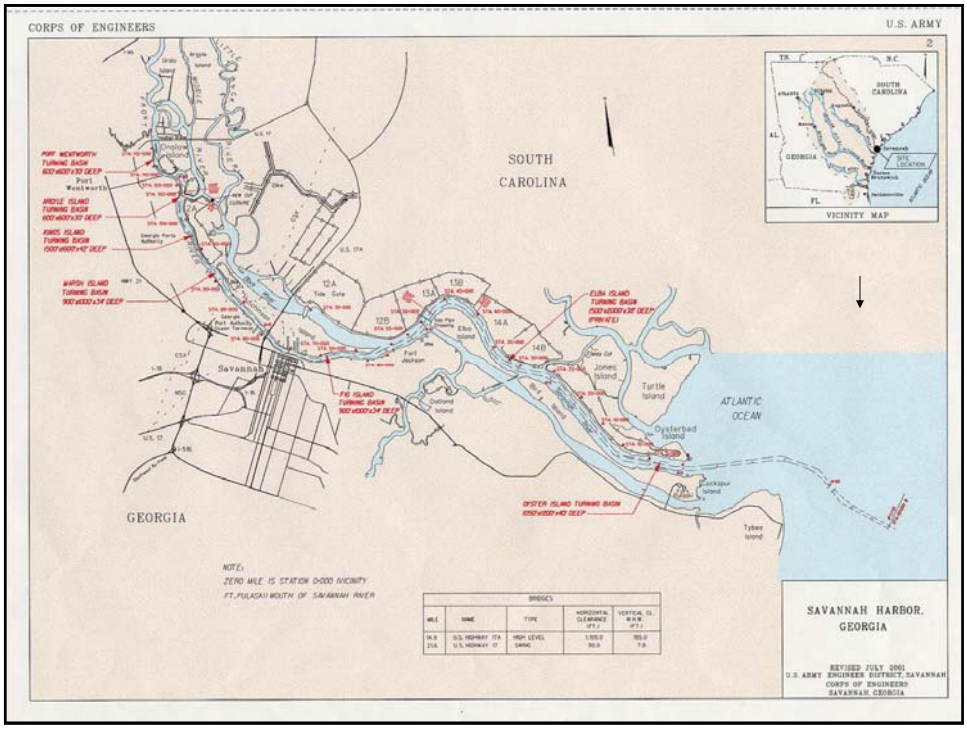



# REPUTATION FOR BIRDS

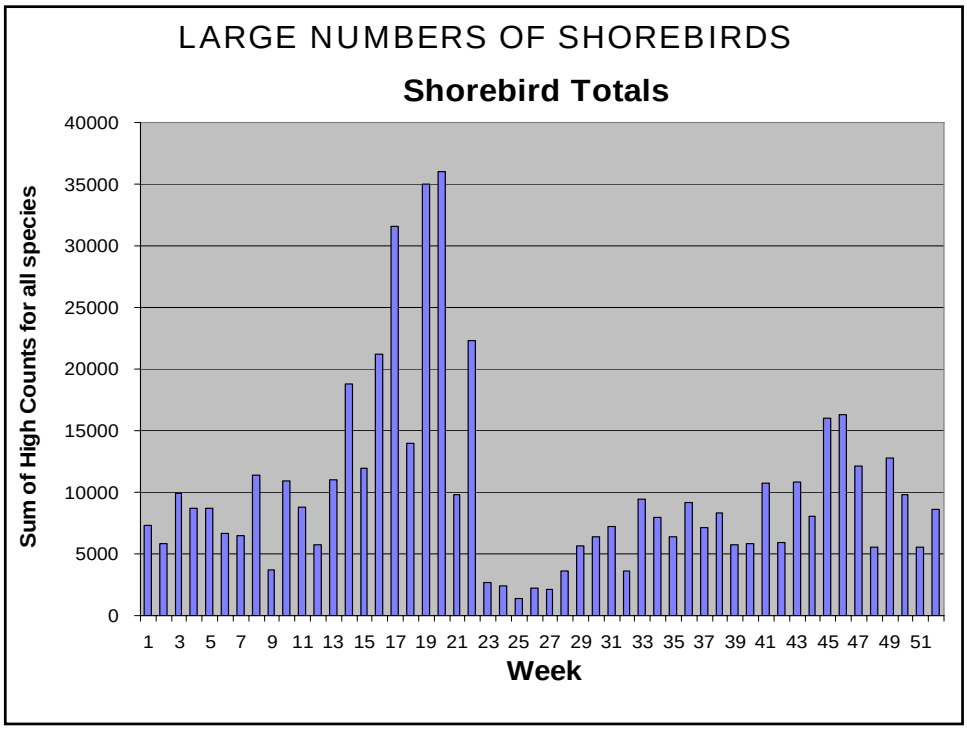
***Savannah District***

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

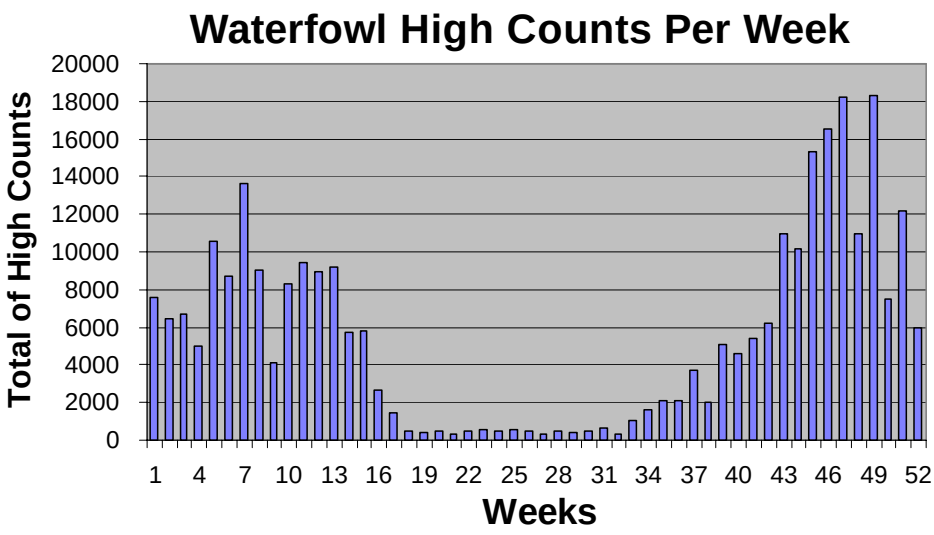

Photo by Steve Calver


Photo by Steve Calver


Photo by Steve Calver
Photo by Steve Calver


LARGE NUMBERS OF SHOREBIRDS
Shorebird Totals
Sum of High Counts for all species
40000
35000
30000
25000
20000
15000
10000
5000
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week

LARGE NUMBERS OF WATERFOWL




# STATE LISTED SPECIES

*Savannah District*

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

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THREATENED - LEAST TERN
Photo by Steve Calver

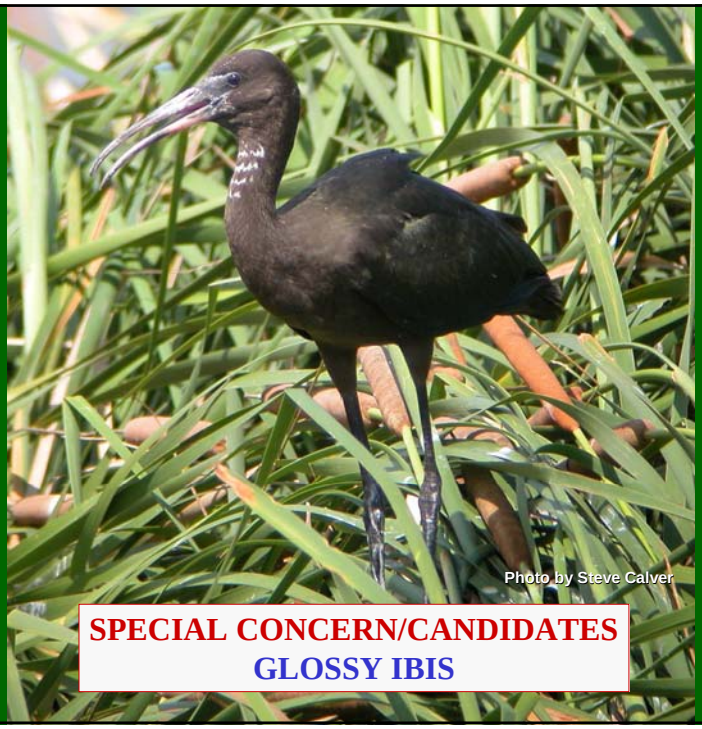

THREATENED - WILSON'S PLOVER
Photo by Steve Calver


THREATENED - GROUND DOVE
Photo by Steve Calver


SPECIAL CONCERN/CANDIDATES
GULL-BILLED TERN
Photo by Steve Calver


SPECIAL CONCERN/CANDIDATES
BLACK SKIMMER
Photo by Steve Calver


Photo by Steve Calver
SPECIAL CONCERN/CANDIDATES
LITTLE BLUE HERON




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

## STATE LISTED SPECIES

*Savannah District*

- Also of Special Concern/Candidates
  - Bobwhite
  - painted bunting

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# BACKGROUND

*Savannah District*

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

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**Beach nesting birds are at particular risk**

Photo by Steve Calver

# PAST MANAGEMENT

*Savannah District*

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

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*Savannah District*

# PROBLEM

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


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

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# NORMAL OPERATIONS

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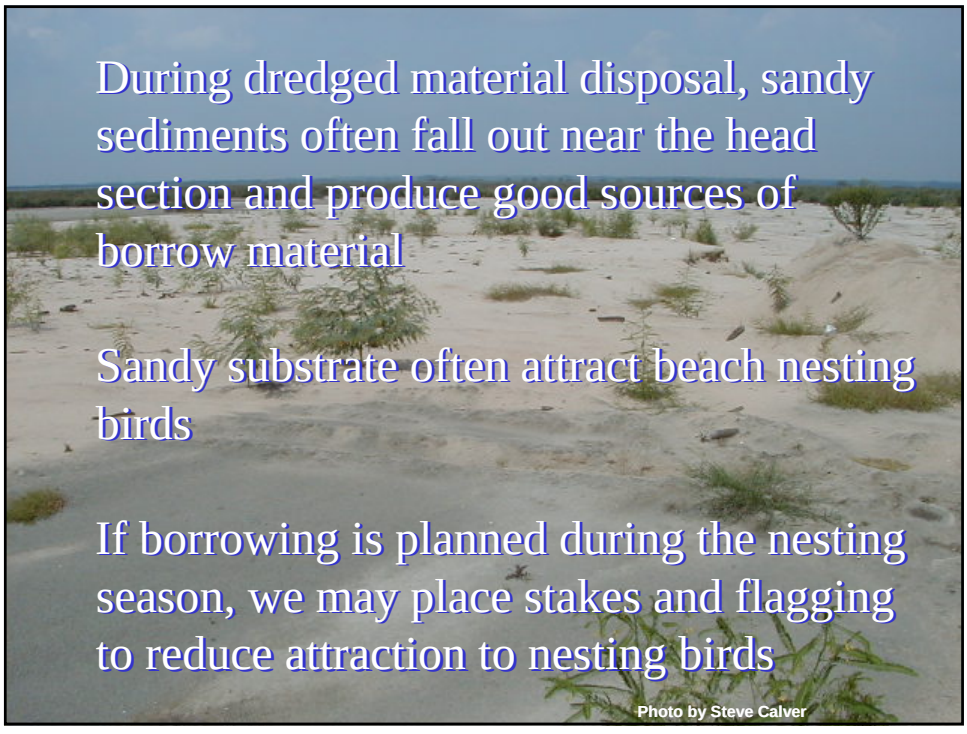
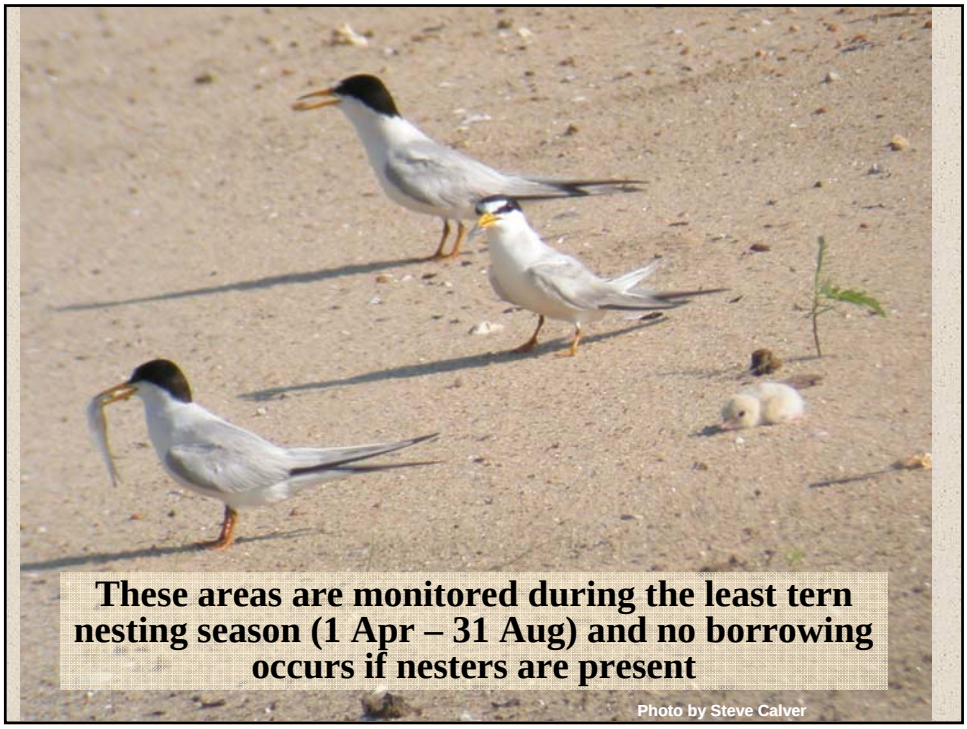
As soon as disposal operations are completed, the site is dried as quickly as possible to allow consolidation of sediments
Photo by Steve Calver


During this process, the area attracts many birds until it dries
Photo by Steve Calver

# SANDY AREAS




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
Photo by Steve Calver



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

Photo by Steve Calver

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# MOWING

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Our dikes require mowing to allow safe travel and permit easy inspection
Photo by Steve Calver


Our dikes also present attractive nesting habitat for willets
Photo by Steve Calver

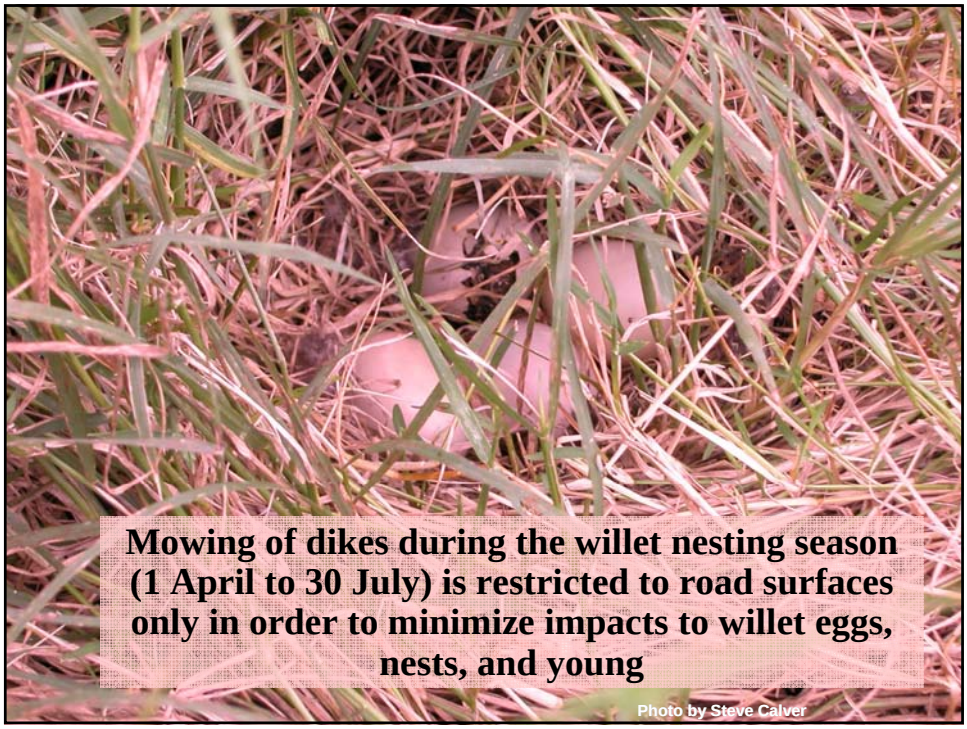
Mowing of dikes during the willet nesting season (1 April to 30 July) is restricted to road surfaces only in order to minimize impacts to willet eggs, nests, and young
Photo by Steve Calver


Photo by Steve Calver

# 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

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# 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

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- 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

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# 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

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# 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

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# BENEFITS OF ROTATION PLAN

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# SHOREBIRD FEEDING AND RESTING HABITAT

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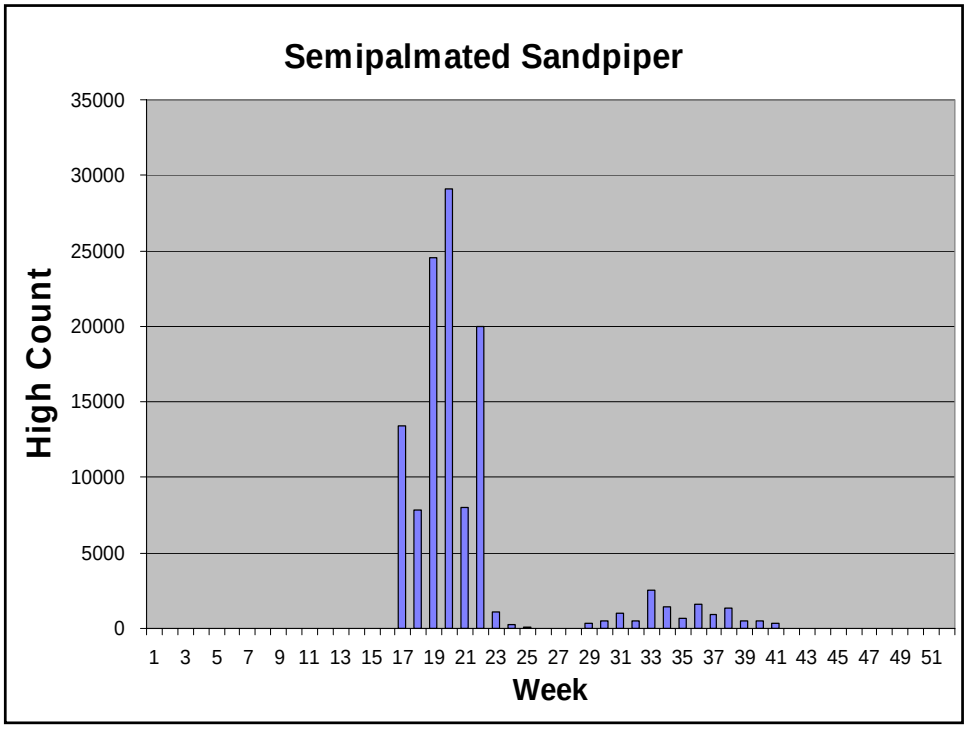
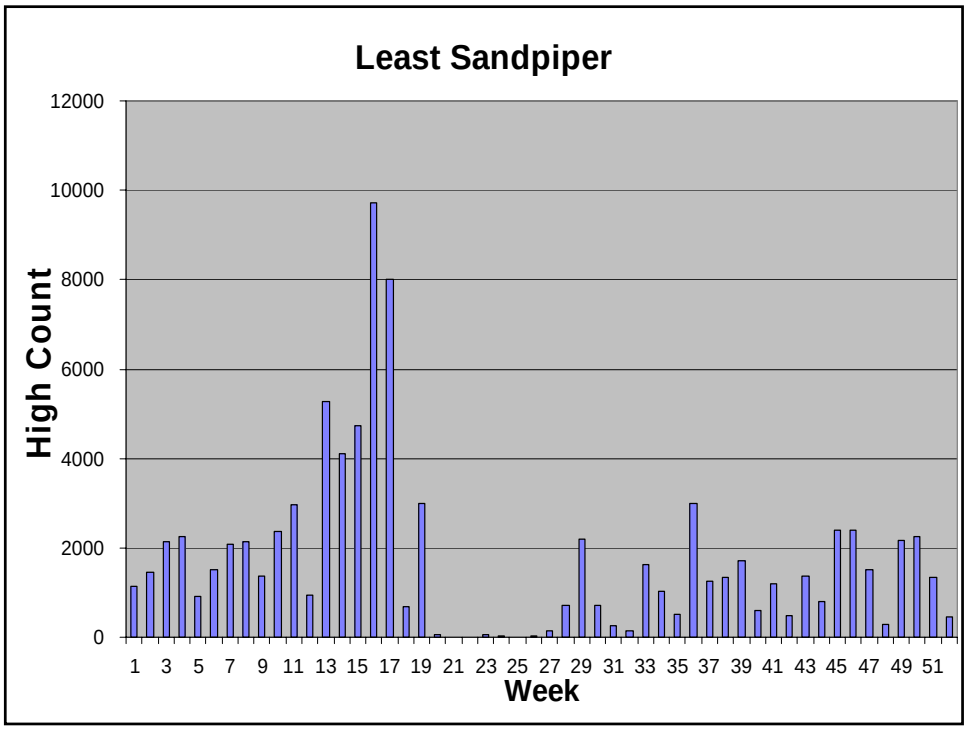
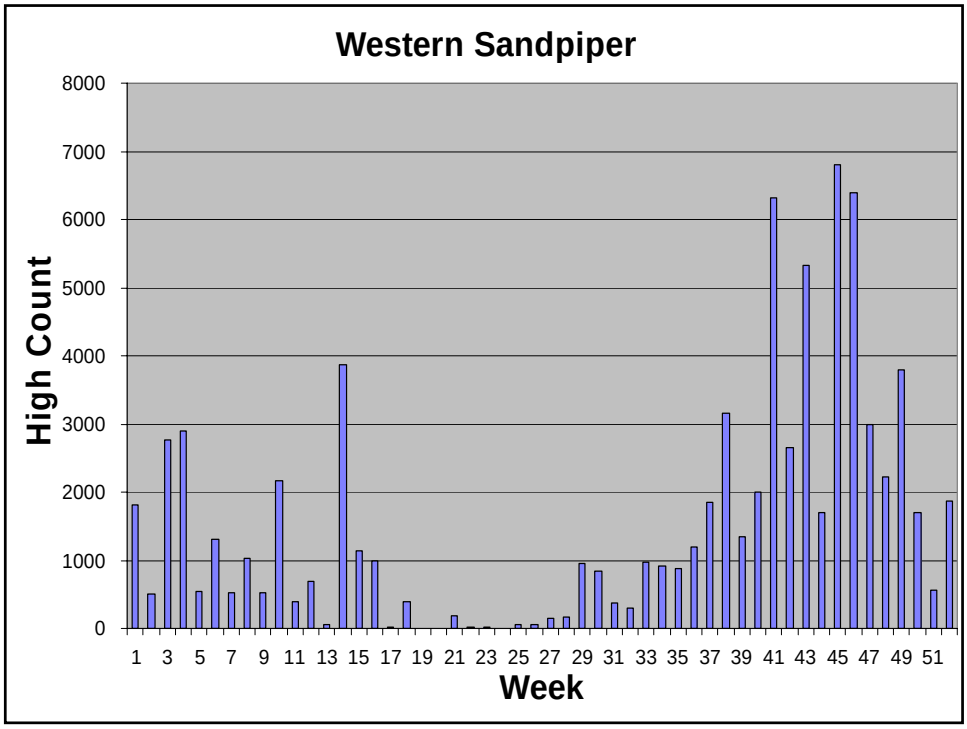
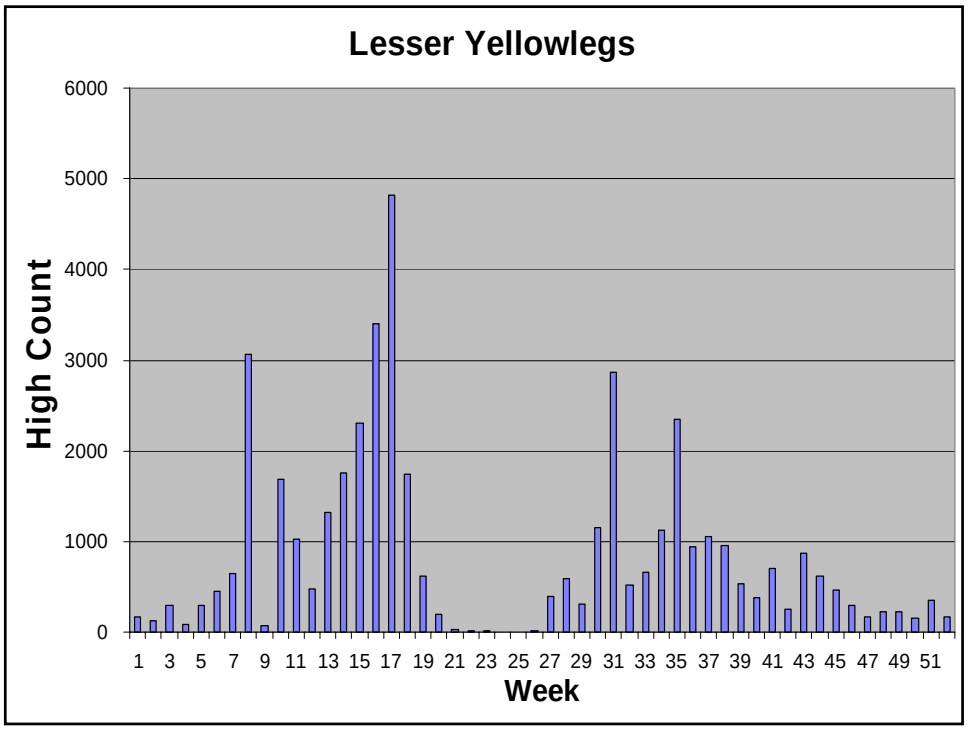
Photo by Steve Calver


Photo by Steve Calver


Semipalmated Sandpiper
High Count
35000
30000
25000
20000
15000
10000
5000
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week


Least Sandpiper
High Count
12000
10000
8000
6000
4000
2000
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week


Western Sandpiper
High Count
8000
7000
6000
5000
4000
3000
2000
1000
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week


Lesser Yellowlegs
High Count
6000
5000
4000
3000
2000
1000
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week

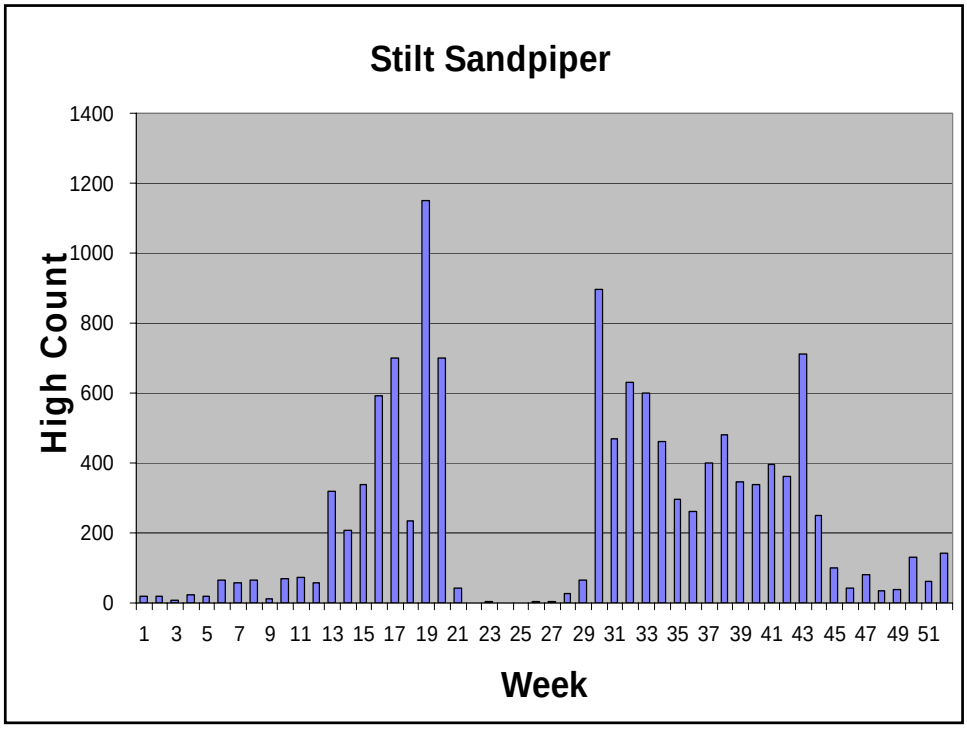

Stilt Sandpiper
High Count
1400
1200
1000
800
600
400
200
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week


Photo by Steve Calver

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# WATERFOWL FEEDING AND RESTING HABITAT

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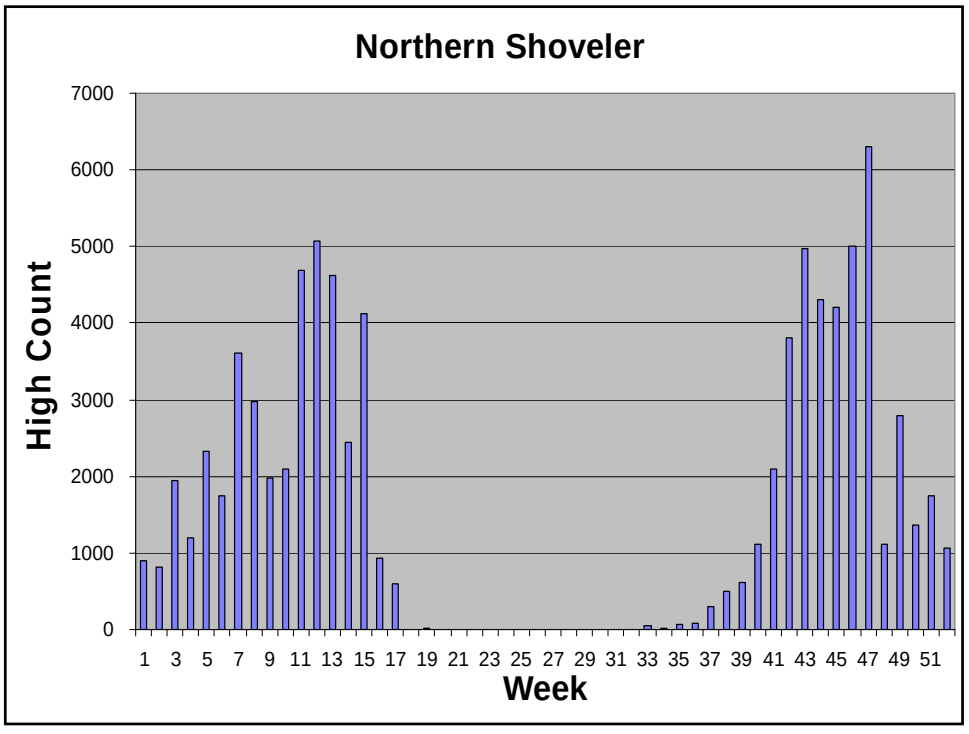
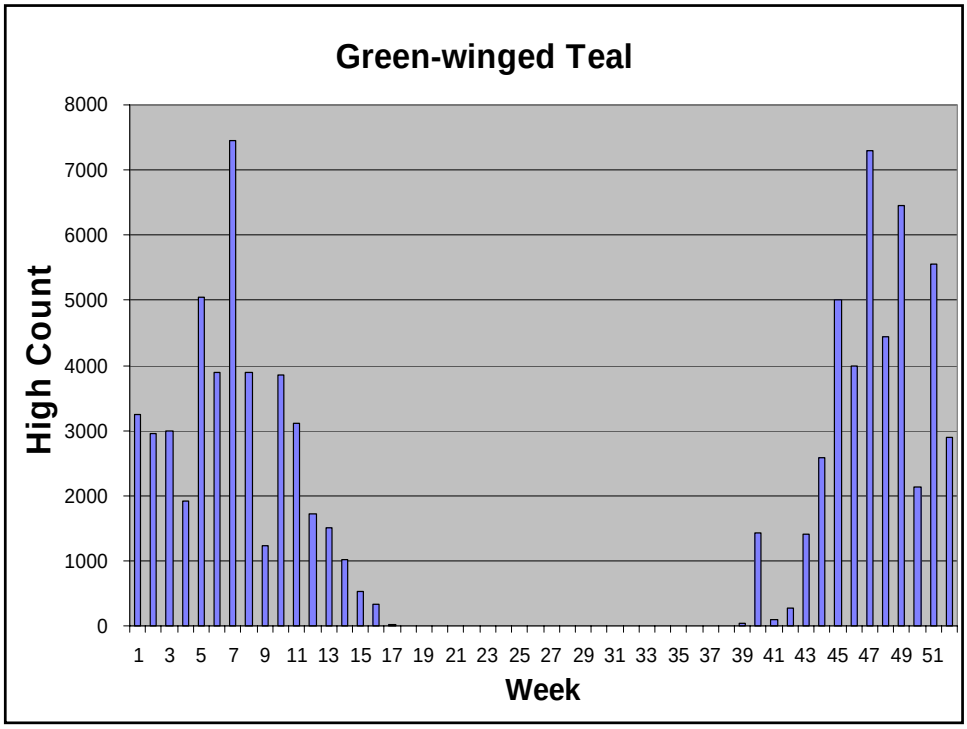
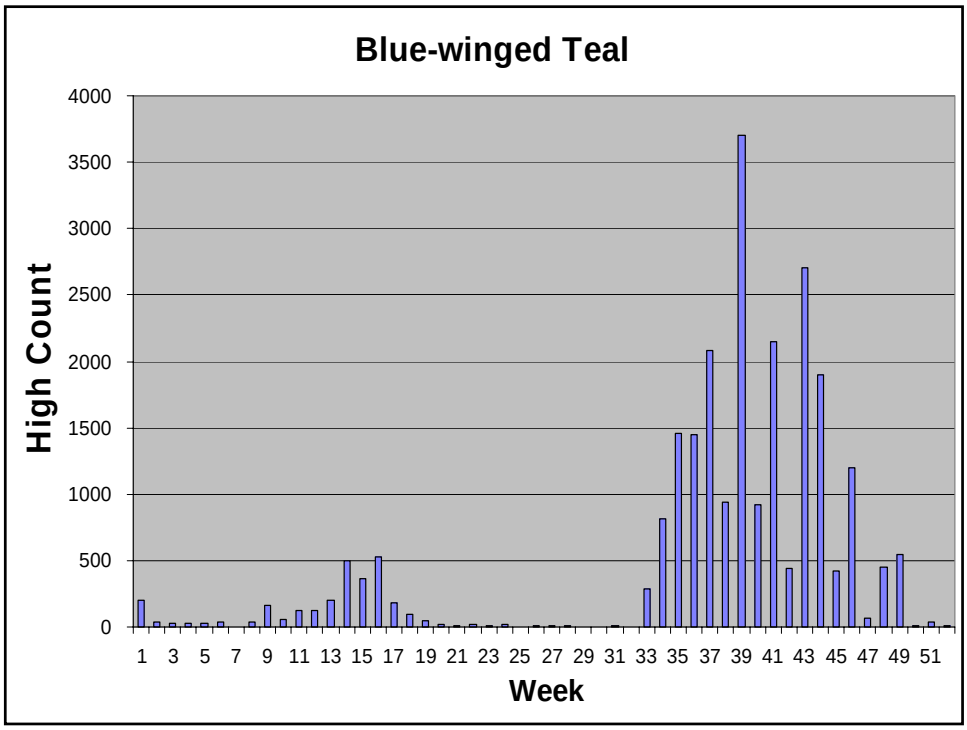
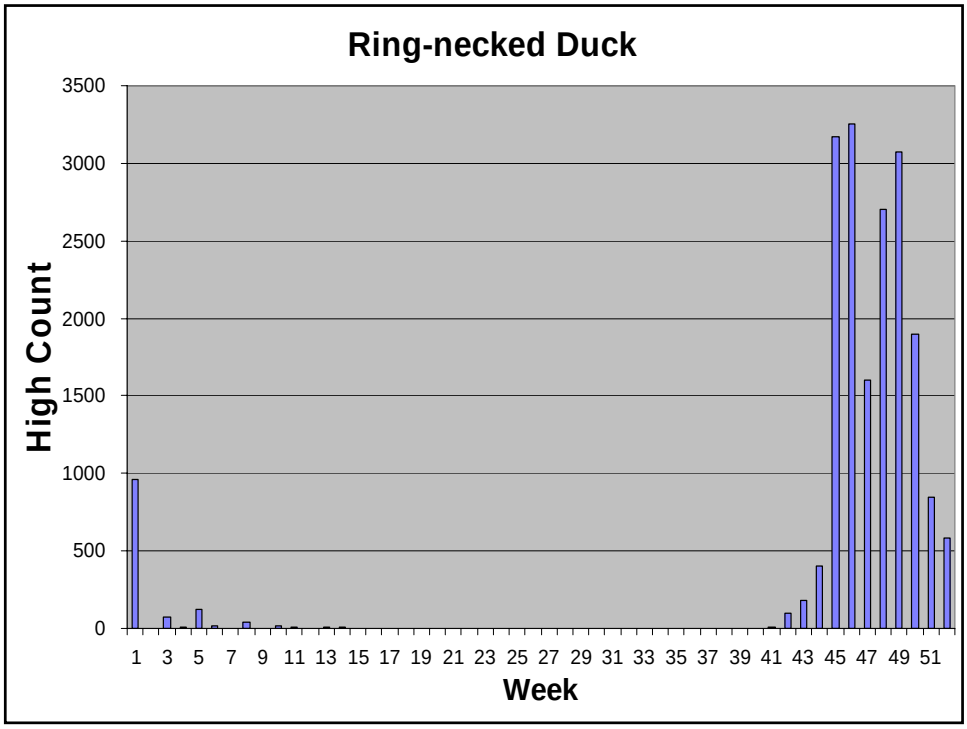



Green-winged Teal
High Count
8000
7000
6000
5000
4000
3000
2000
1000
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week


Blue-winged Teal
High Count
4000
3500
3000
2500
2000
1500
1000
500
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week


Ring-necked Duck
High Count
3500
3000
2500
2000
1500
1000
500
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week

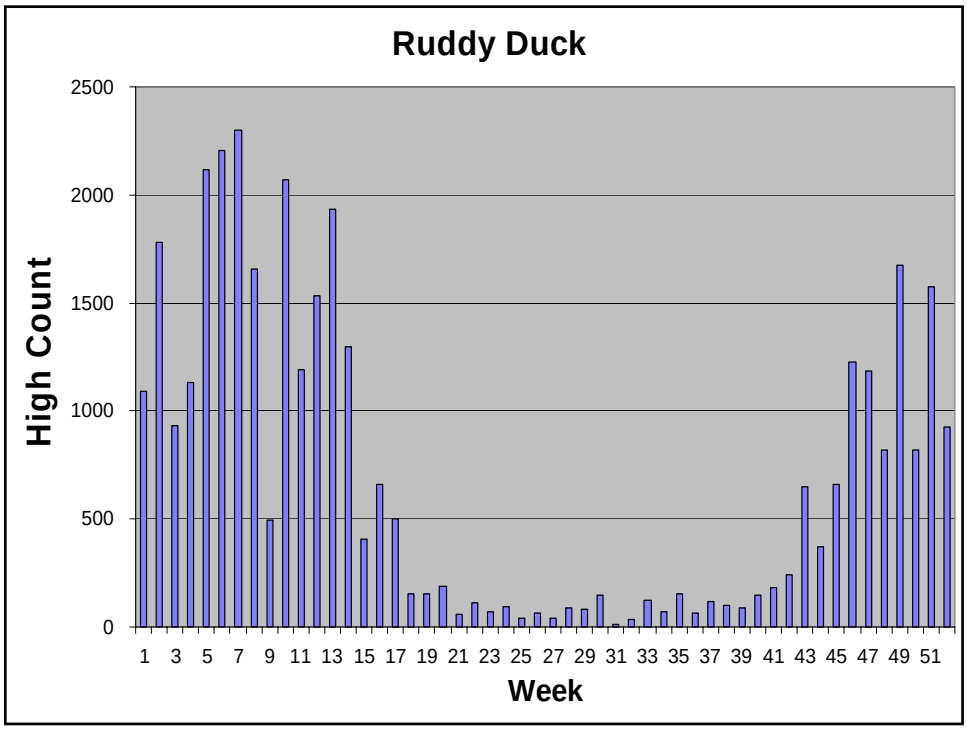

Ruddy Duck
High Count
2500
2000
1500
1000
500
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
Week


Photo by Steve Calver


Photo by Steve Calver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# IMPROVED BIRD NESTING HABITAT

**Provides for more successful nesting**

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## SHOREBIRDS



SHOREBIRDS

## WATERFOWL



WATERFOWL


## 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

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Photo by Steve Calver


Photo by Tom Murphy, SCDNR


## SC STATE-LISTED[*1] BEACH-NESTING BIRDS FOUND IN THE DISPOSAL AREAS

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


Photo by Steve Calver


Photo by Steve Calver


Photo by Steve Calver


Photo by Steve Calver


Photo by Tom Murphy, SCDNR


Photo by Steve Calver


Photo by Steve Calver


Photo by Steve Calver


Photo by Steve Calver


The End
Photo by Steve Calver