

STATUS OF THE SPARROW

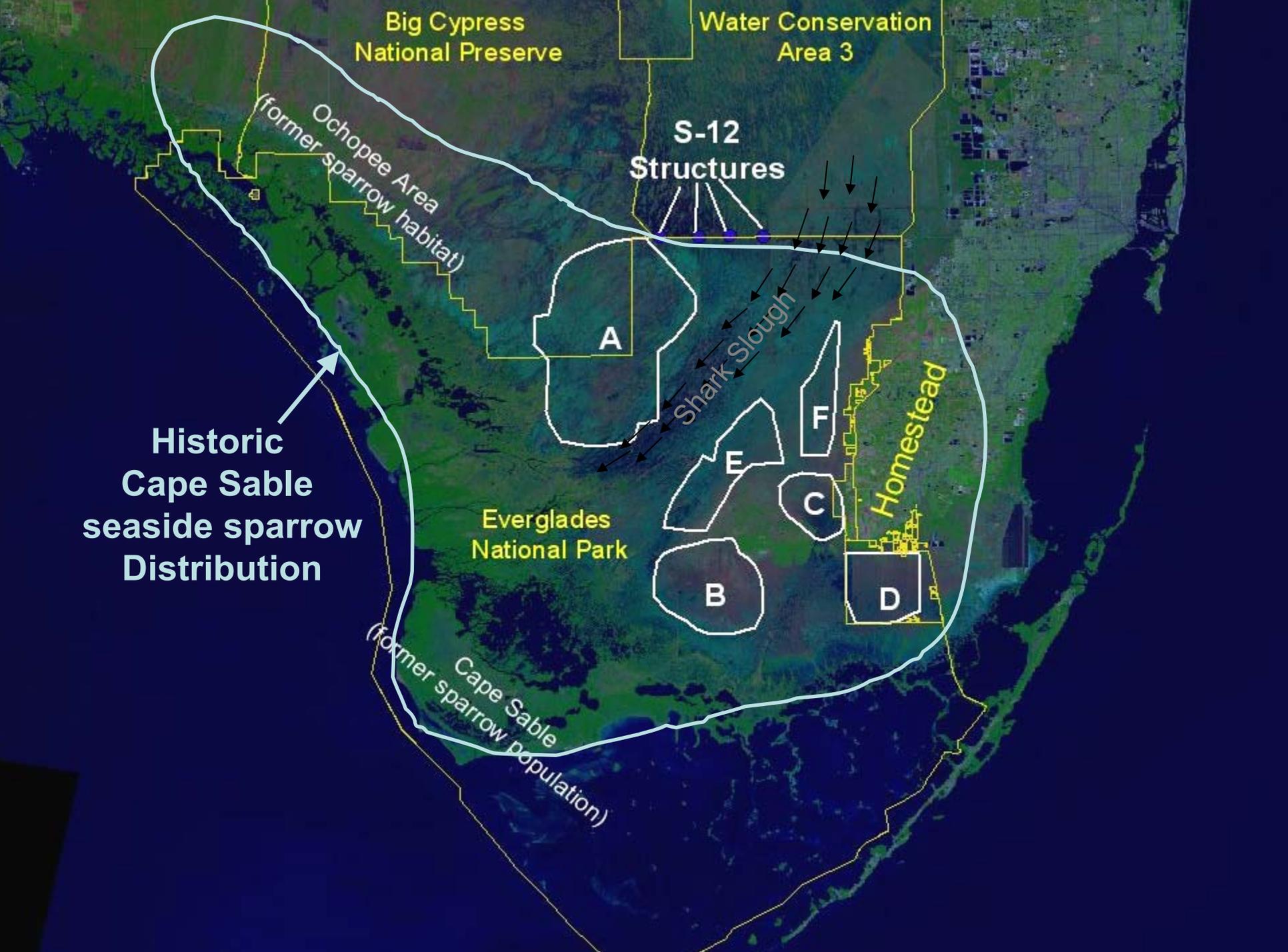
2004



Cape Sable seaside sparrow

(Ammodramus maritimus mirabilis)

- Listed as ENDANGERED on August 11, 1967 under the Endangered Species Preservation Act.
 - Protection continued under the Endangered Species Act
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- A photograph of a Cape Sable seaside sparrow perched on a thin, brown grass stem. The bird is facing left, with its head slightly turned towards the viewer. It has a brownish-grey back, a white breast, and a dark cap. The background is a dense thicket of tall, thin grasses, some green and some brown, creating a textured, natural setting.
- One of nine subspecies of seaside sparrows in the U.S.
 - Thought to have been extirpated in the 1930s
 - Possibly its closest relative, the Dusky seaside sparrow, was considered extinct in 1990



Big Cypress National Preserve

Water Conservation Area 3

Ochopee Area
(former sparrow habitat)

S-12 Structures

A

Shark Slough

F

E

C

Homestead

Everglades National Park

B

D

Cape Sable
(former sparrow population)

Historic Cape Sable seaside sparrow Distribution

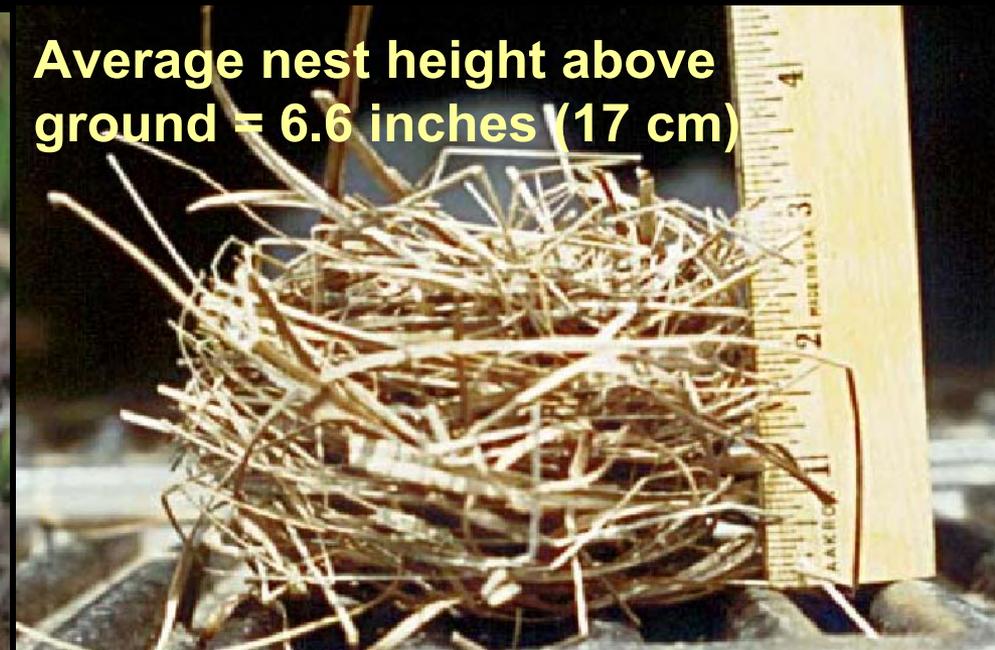
Sparrow habitat

- CSSS have only occurred within the prairies of the southern Everglades, primarily in marl prairies and *Spartina*-dominated coastal prairies.
- Today, all sparrow populations occur within the remaining marl prairies.
- There are no known large areas of potentially suitable habitat that have not been recently occupied by CSSS

Characteristics of occupied CSSS habitat

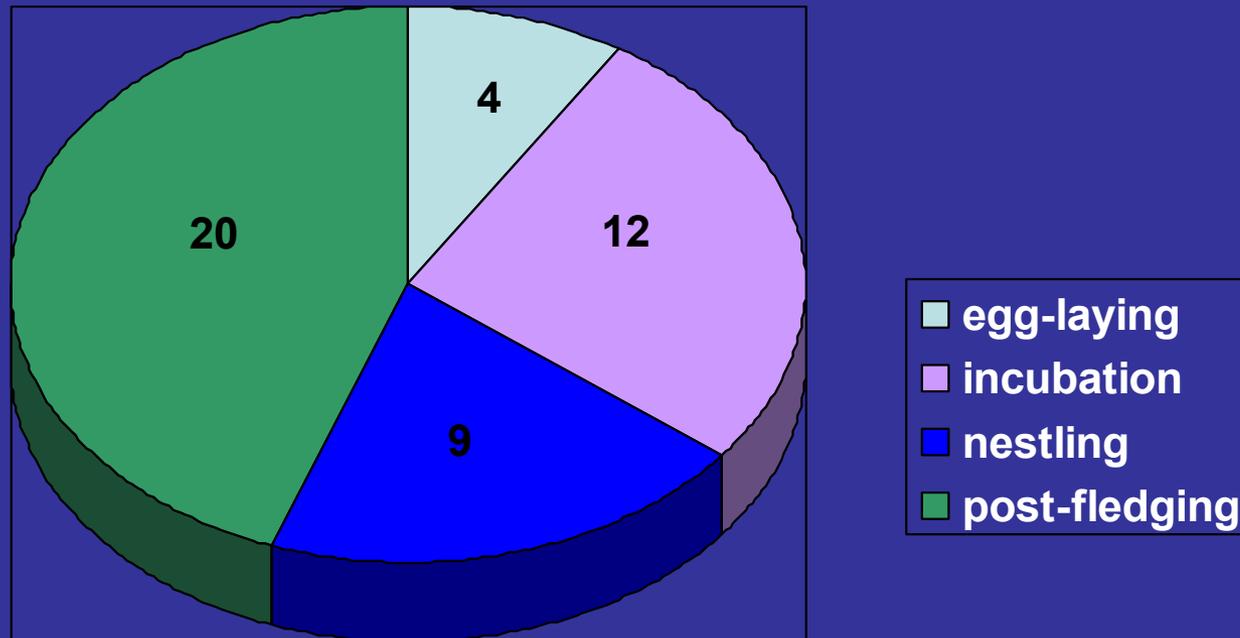
- Treeless and expansive prairies
- Structurally diverse prairie vegetation
- Relatively short hydroperiod (2-7 months)
- Not recently burned (> 2 years since fire)

- CSSS are largely sedentary
- They occupy the prairie habitats year-round
- **Completely dependent on the condition of the prairies**
- Relatively low survival rates and short life expectancy
 - average annual survival rate – 66 percent
- Therefore, CSSS populations are vulnerable to habitat impacts
 - flooding
 - fire



Successful reproduction is key to maintaining sparrow populations

Days in each stage of the CSSS breeding cycle
55 days total



- Breeding season duration – March to late July
- Up to 3 successful clutches per season under favorable conditions

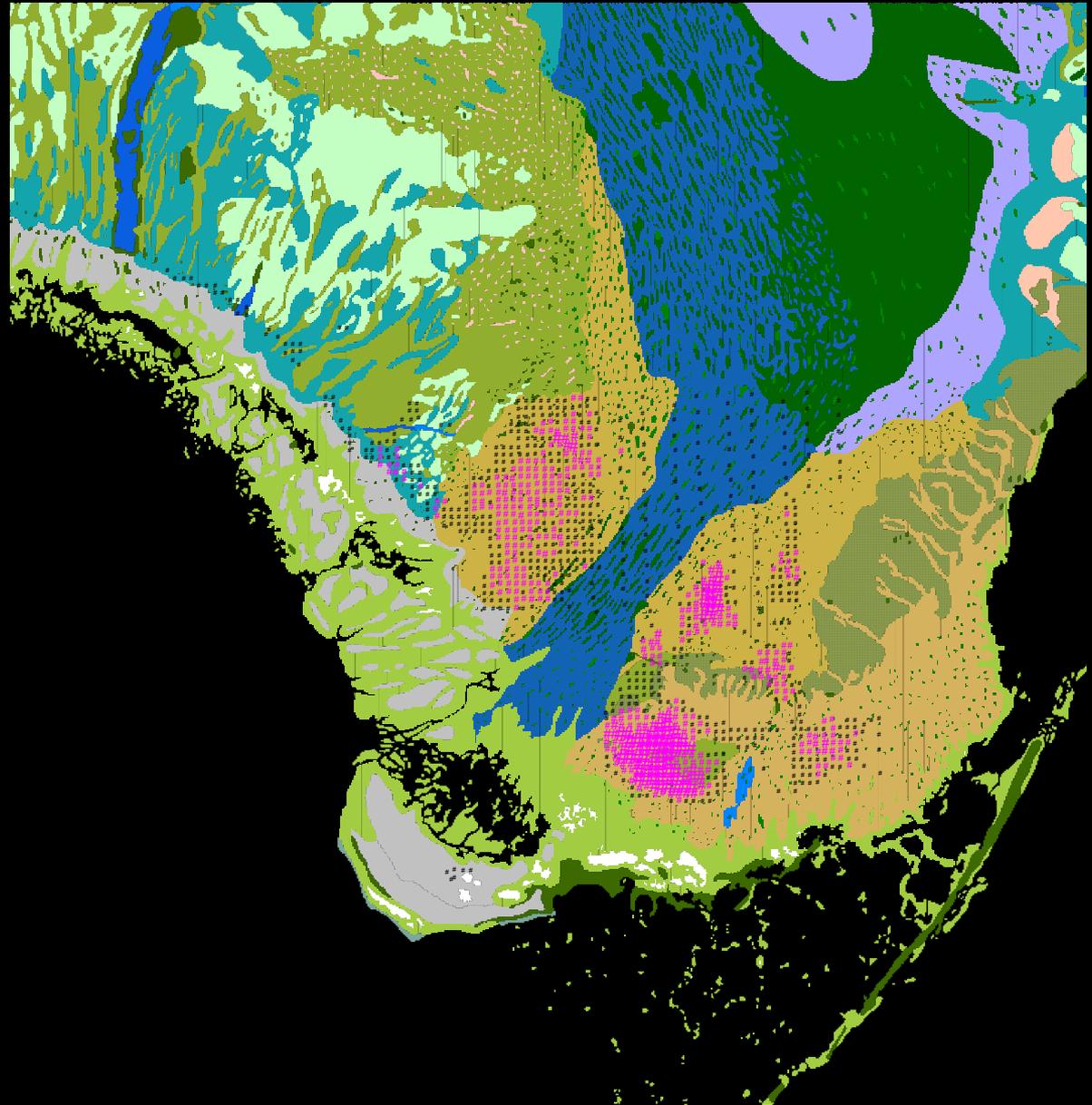
History and status of the CSSS population

- Sub-population on Cape Sable disappeared
 - Result of hurricane-related habitat change
- Sub-population in Ochopee area disappeared
 - result of habitat change
- Loss of former habitat to agriculture and development
- CSSS Sub-populations within remaining habitat have declined
 - **Since 1981, the estimated total CSSS population has declined by nearly 50 percent**
 - Hydrologic impacts to habitat
 - Fire-related impacts to habitat
 - Other?

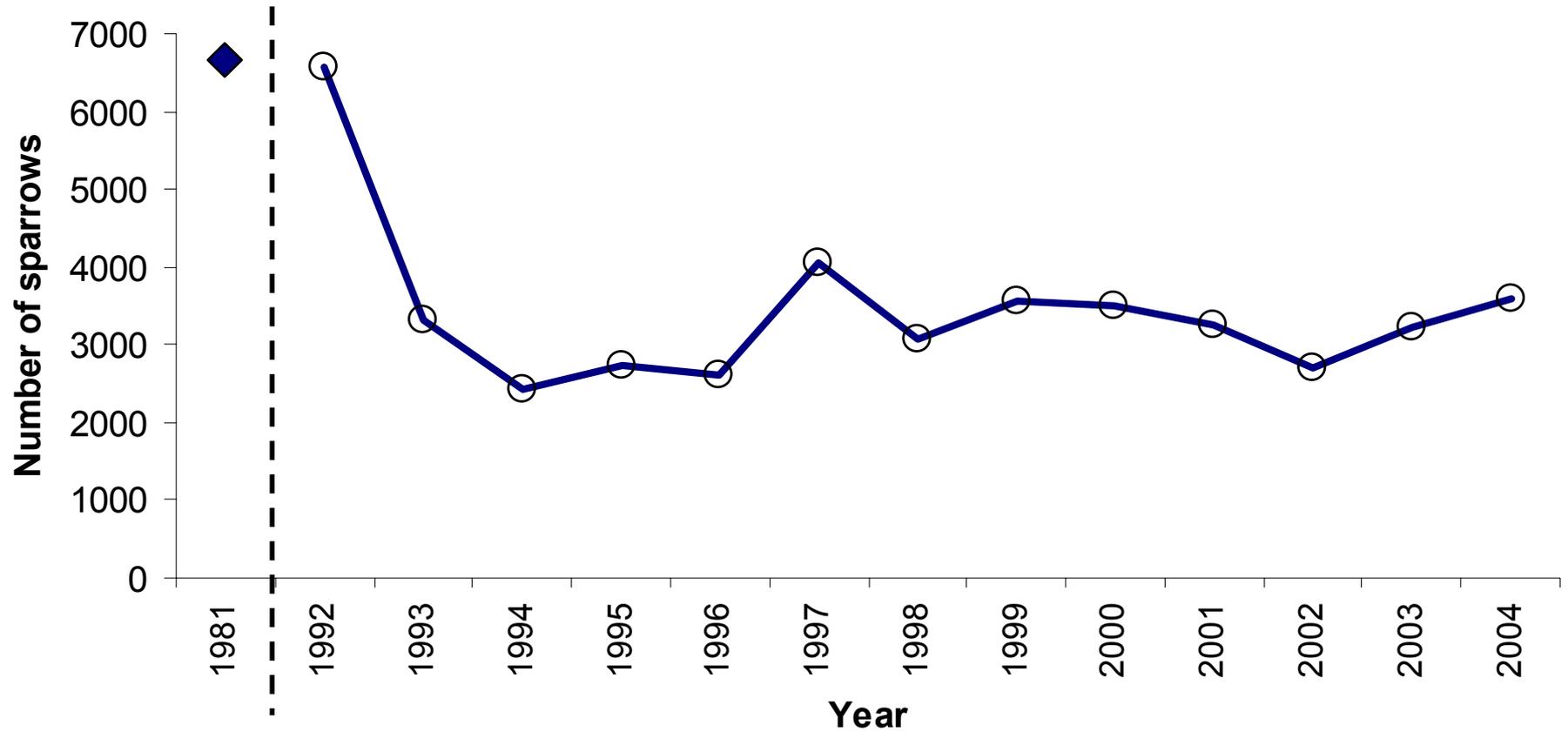


Photo by David LaPuma

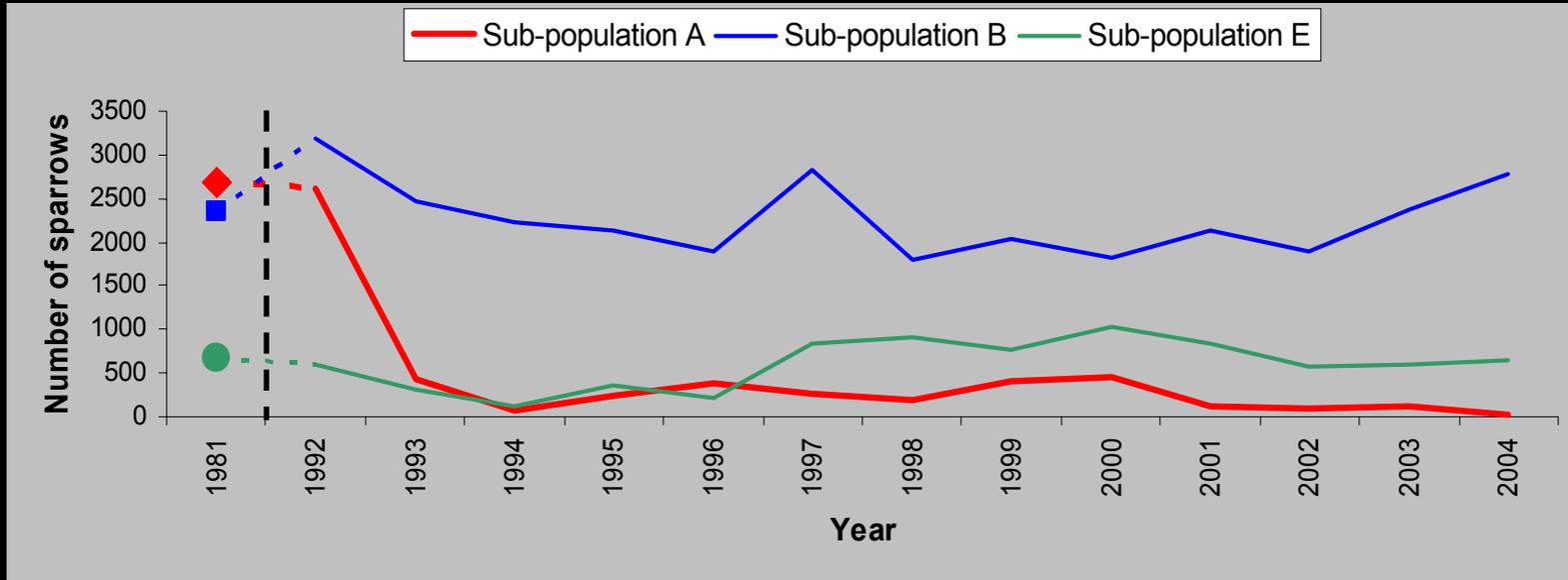
CSSS occurrence and historic vegetation communities in southern Florida



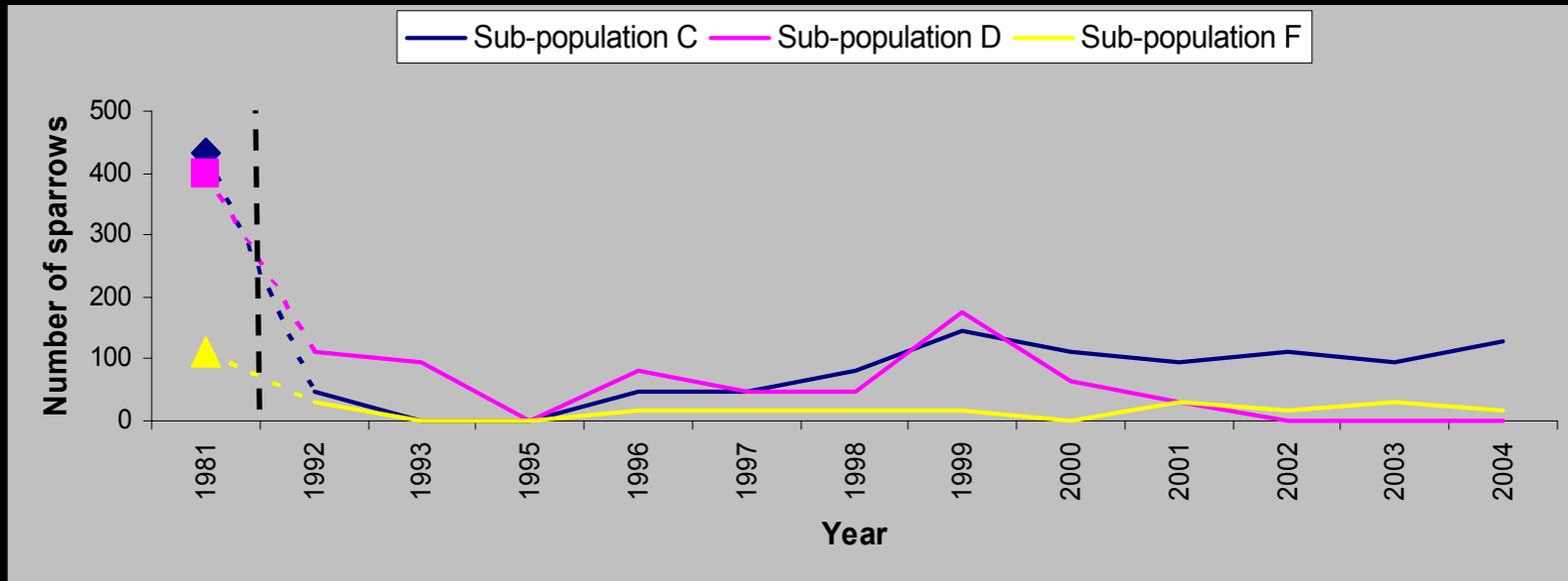
Total estimated Cape Sable seaside sparrow population size over time



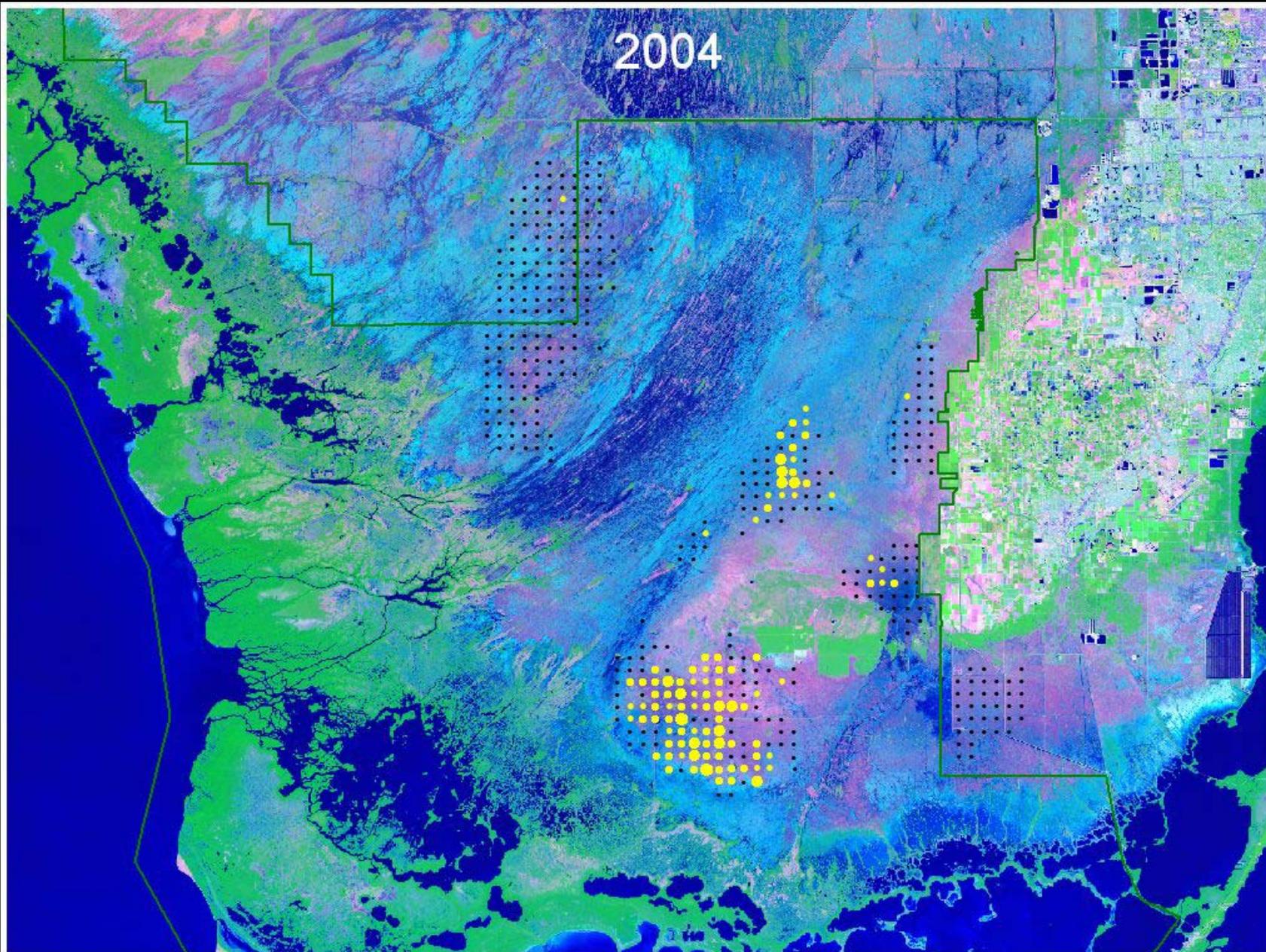
Population trend in three large sparrow sub-populations



Population trend in three small sparrow sub-populations



2004



1999

- The Service determined that the Experimental Program would jeopardize the continued existence of the CSSS
- Primary effects:
 - flooding in sub-population A
 - Over-drying in eastern ENP, leading to frequent fires

1999 RPA

- The S-12 structures would remain closed from February 1 through July 15
 - Measure would provide opportunity for most CSSS to complete 1-2 clutches in most years
- More water would be introduced into ENP east of the L-67 extension
 - Would rehydrate excessively dry muhly prairies and reduce likelihood of fire
 - Flood protection in the 8.5 square mile area prevented implementing this measure as intended

Since 1999

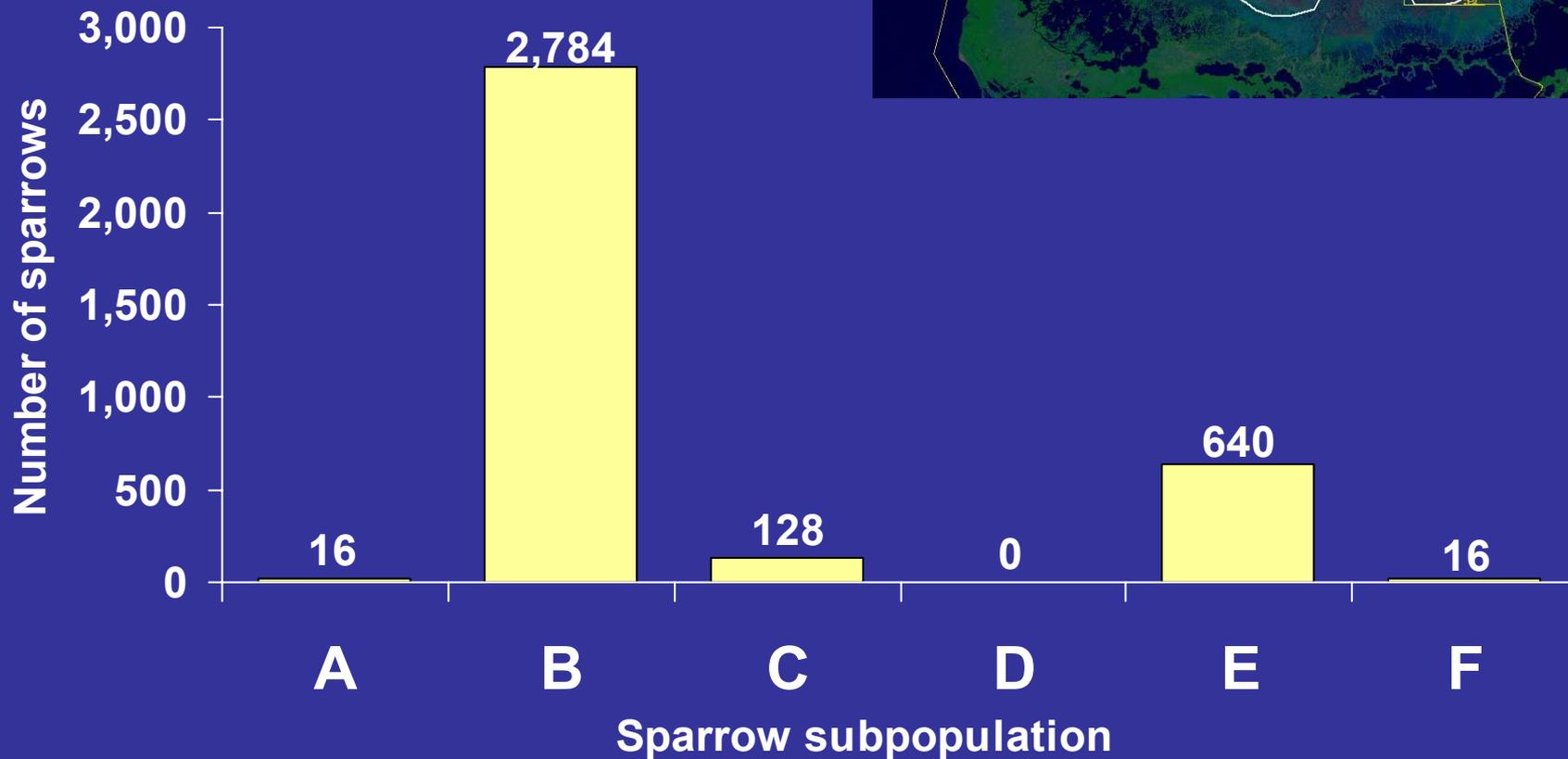
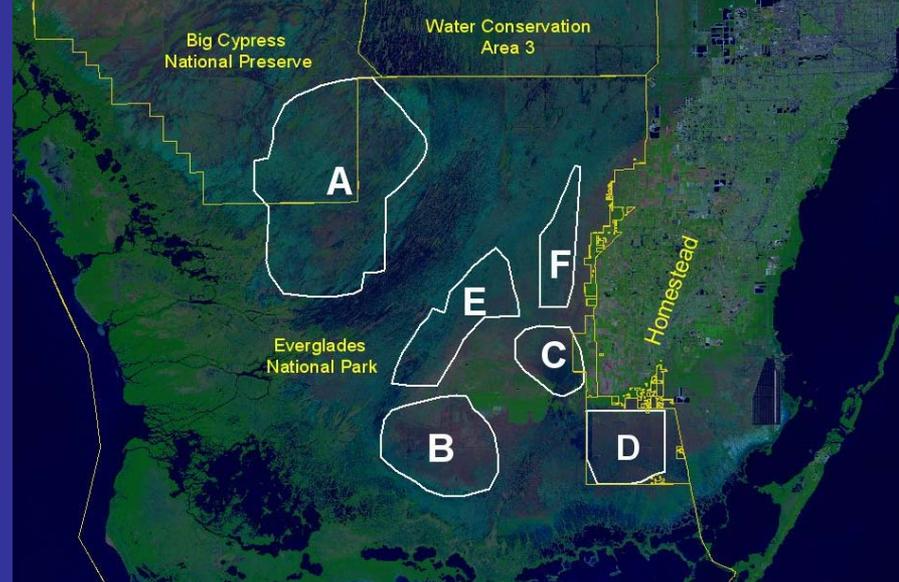
- Accomplishments
 - Reduction in flooding during sparrow nesting in sub-population A
 - Improved fire protection in eastern sub-populations
 - Control of encroaching exotic woody vegetation in eastern ENP
 - Prescribed burning in Southern glades WEA achieved
 - Continued sparrow monitoring and research
 - Response of sparrow subpopulation E to the Lopez fire
 - Comprehensive vegetation study
 - Continued annual helicopter survey
 - Continued banding on study plots
 - Improved coordination among management agencies

Since 1999

- Sparrow sub-population A has not rebounded
- Sparrow habitat in sub-population A still has not recovered from hydrologic impacts
- Sparrow sub-population D appears to have been extirpated
- Other sub-populations remain relatively constant
- Threats
 - **Flooding** – reduced risk, but still a threat
 - **Fire** – risk in eastern sub-populations reduced, but still a threat
 - **Encroaching wood vegetation** – significantly reduced, but still a threat

2004 CSSS subpopulation levels

Total population – 3,584



In 2004

- Population estimate for sub-population A was 16 individuals
 - This estimate was confirmed on the ground through intensive searches
 - Observers reported no evidence of breeding activity in sub-population A
 - 2 banded sparrows were observed within sub-population A that immigrated from other sub-populations
- This all suggests that sub-population A may not be holding its own.
 - Other factors?

Effects of S-12 flow on CSSS sub-population A

- Discharge water directly into CSSS habitat
- Can lead to rapid increases in water levels
 - water “stacks up” in sparrow habitat
 - lengthens hydroperiods
 - causes deeper water levels
 - aggravates effects of rainfall

RESULTS:

- 1) floods sparrow nests
- 2) increases predation risk
- 3) reduces the length of the dry period
(the nesting window)
- 4) increases hydroperiod leading to
vegetation changes



Photo by David LaPuma

Effects of S-12 flow on WCA-3A

- Relatively small impacts on WCA-3A stage
- During the wet season, outflow from the S-12s rarely match inflows...
 - this doesn't include rainfall
- During the wet season, on average, with all S-12 structures open (assuming 2,500 cfs flow rate), it would take over 8 days to reduce the stage (depth) of water in WCA-3A by one inch
- **Assuming no rainfall and no inflows to WCA-3A occur**

Effects of S-12 flow on WCA-3A

- Through hydrologic changes in ISOP/IOP, (“the Duke-around”), the Corps said that they were able to compensate completely for the reduced use of the S-12 structures
- ENP reports in the draft IOP report that the combination of zone E1 regulation schedule and the releases of water into the SDCS under ISOP/IOP have overcompensated for the S-12 closures, and have kept water levels lower than they were during the Experimental Program.

Vegetation changes

- Vegetation does not appear to have recovered in sub-population A
 - The first thorough, quantitative assessment of muhly prairies is currently under way
(M. Ross et al., Florida International University)
 - Preliminary results:
 - within the *Muhlenbergia* wet prairie vegetation association in sub-population A, *Muhlenbergia* was present in low abundance
 - This difference is likely a result of hydrologic impacts

Next Steps

- Service is funding several projects to specifically address the needs of CSSS
 - Determine whether reproduction is occurring within sub-population A
 - Identify methods to expedite vegetation restoration (fire?)
 - Improve ability to predict and avoid potential impacts (modeling)
 - Develop translocation methods
 - Translocate sparrows back to sub-population A once habitat has recovered
 - Investigate other options

Recovering CSSS – Options

- Restore formerly occupied habitats
 - Sub-population A
 - Sub-population D
 - Ochopee area?
- Move sparrows to other areas
 - Where?
 - There are currently no other known areas of potentially suitable habitat
- Investigate all other management options

