

The 1998 Annual Report

Introduction to the 1998 report, by Stuart L. Pimm

In 1992, the [National Park Service](#) asked that I look at the status of the Federally listed Cape Sable seaside-sparrow, which is found only in [Everglades National Park](#). They had just completed their second range-wide survey, the first being 11 years earlier. Both surveys estimated approximately 6500 birds distributed in several sub-populations west and east of Shark River Slough. The first report was a few pages long.

In 1993, it became clear that the western population had nearly disappeared. First, we thought Hurricane Andrew was the cause, later we realised it was unnaturally high water levels. The 1994 report was thicker and had a few colour figures. In the subsequent years, ever growing concerns about the fate of the sparrow and the Everglades ecosystem on which it depends, led to more research and progressively larger reports. That for 1997 occupied a 10 cm binder, the 20 copies we distributed were both expensive and inadequate for the number of people who wanted them. Given the outstanding computational skills of the talented men and women who work with me on this project, a web page was long overdue. Here it is.

First time readers

The report contains a series of chapters, some of which are being modified. The basic story about the sparrow, its decline, and the causes of these changes are outlined in the first three chapters. These chapters are all papers published in the last year. Chapter 4 is the text of a paper under review, but not yet accepted. You should read these four papers in the order in which they appear.

The remaining chapters are additional material intended for those already familiar with the project.

Advanced readers

Chapters 1 through 4 have appeared in print. Chapter 5 is a set of eight images supplied by Jon Moulding of the Army Corps of Engineers. They are the sparrow surveys in each year, plus a wealth of supplemental information that is not the same in each image.

Chapters 6 through 8 are DRAFTS: expect them to [change](#) on a weekly basis. They should not be quoted and we reserve the right to modify them as our analyses develop. Questions and suggestions about them are welcome. In all cases, they represent work that is being prepared for publication and we hope to include them in next year's report in their final form.

Chapter 9 is a series of working images that takes fire and survey data and overlays them on satellite images. This chapter is also preliminary.

Chapter 10 is a list of the databases that underpin our analyses. Enquiries about access to these data should be made through Sonny Bass, Everglades National Park (sonny_bass@nps.gov). We have produced this list because we expect that interested parties will want to examine our data from time to time. While we are making every effort to make the data accessible, we hope those requesting the data will understand how difficult this task can be. Final versions of all our data are not available at the present time, so requests for access should be as specific as possible.

Technical details

Most chapters are available entire as a file in .pdf format, which can be downloaded for viewing or printing. To do so, you will need the free Adobe Acrobat Reader, which you will probably already have if you are using Netscape Navigator 3 or greater, or Internet Explorer 3 or greater. If you don't have the reader, you can [get it from Adobe](#).

Each chapter has a summary paragraph or (in the case of published papers) an abstract, and for some of the chapters various key figures have been extracted and placed separately.

I thank Dr. Gareth Russell for his leading role in assembling this web page.

Stuart L. Pimm, August 18th, 1998.

The Chapters

Chapter 1: Life History of the Endangered Cape Sable Seaside Sparrow (*Ammodramus maritimus mirabilis*)

Published as: J. L. Lockwood, K. H. Fenn, J. L. Curnutt, D. Rosenthal, K. L. Balent and A. L. Mayer (1997) Life history of the endangered Cape Sable seaside sparrow. *Wilson Bulletin* 109(4): 720-731.

This publication provides baseline information on nesting behavior, nestling diet and annual productivity. Includes data collected from 1995-96.

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Chapter 2: Population Dynamics of the Endangered Cape Sable Seaside

Sparrow

Published as: Curnutt, J. L., A. L. Mayer, T. M. Brooks, L. Manne, O. L. Bass, D. M. Fleming, M. P. Nott and S. L. Pimm (1998) Population dynamics of the endangered Cape Sable Seaside Sparrow. *Animal Conservation* 1: 11-21.

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[Read the abstract](#)

Chapter 3: Water Levels, Rapid Vegetational Changes, and the Endangered Cape Sable Seaside Sparrow

Published as: Nott, M. P., O. L. Bass Jr., D. M. Fleming, S. E. Killeffer, N. Fraley, L. Manne, J. L. Curnutt, T. M. Brooks, R. Powell and S. L. Pimm (1988) Water levels, rapid vegetational changes, and the endangered Cape Sable seaside sparrow. *Animal Conservation* 1: 23-32.

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Chapter 4. Wet-Season Ecology of the Cape Sable Seaside Sparrow

By Balent, K. L., K. H. Fenn and J. L. Lockwood.

This draft manuscript provides baseline information on 1996-97 wet-season distribution and behavior.

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[Read the abstract](#)

Chapter 5. Pictorial Summary of the CSSS Extensive Survey

These are a series of images documenting the distribution of the Cape Sable Seaside Sparrow in the years 1981 and 1992-1998. They were supplied on paper by Jon Moulding of the Army Corps of Engineers, and scanned by us. Click on a date to view the distribution in that year.

- [1981](#)
- [1992](#)
- [1993](#)

- [1994](#)
- [1995](#)
- [1996](#)
- [1997](#)
- [1998](#)

Chapter 6. The 1998 Breeding Season

Part 1: Overview

By Julie L. Lockwood and Katherine H. Fenn

The first part of this chapter is an overview of the breeding information gathered in 1998, including this year's productivity estimates, breeding phenology, and nestling diets. It also includes a summary of nest site fidelity and site fidelity that includes data collected from 1994-98.

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Part 2: Defining microhabitat characteristics and preferences of the Cape Sable seaside-sparrow to aid in recovery

By J. L. Lockwood, K. H. Fenn, T. Warren, A. Fargue and A. Van Holt.

This draft manuscript describes nest-site microhabitat differences between sub-populations A, B, and E, and details microhabitat preferences for nest-site selection. It includes information collected from 1997-98.

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Chapter 7: Hydrological changes and Cape Sable Seaside-Sparrow (*Ammodramus maritimus mirabilis*) habitat

By Audrey L. Mayer.

Abstract: The endangered Cape Sable Seaside-Sparrow (*Ammodramus maritimus mirabilis*) is restricted to freshwater prairies within Everglades National Park. Although first discovered in *Spartina* marshes, this subspecies now inhabits *Muhlenbergia* prairies most frequently, and the distribution of *Spartina* marsh is greatly reduced. Water management structures have greatly altered the hydrologic patterns within the Park, and have affected the sparrow's habitat. We collected vegetation data from three distinct subpopulations of the sparrow, each with different sparrow densities and water levels. We demonstrate that a few structural and floristic characteristics can be used to assess the suitability of habitat for sparrows. These vegetation characteristics also serve as

indicators of habitat degradation caused by changes in the hydrologic regime.

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Three figures as separate, viewable images

- [Figure 2. Sparrow habitat 1992-1996](#)

Chapter 8: Identifying Cape Sable Seaside-Sparrow habitat from satellite images

By Audrey L. Mayer, Robert Powell, Clinton Jenkins, Julie L. Lockwood, Katherine H. Fenn, and Stuart L. Pimm.

Summary: The Endangered Cape Sable Seaside-Sparrow (*Ammodramus maritimus mirabilis*) inhabits the freshwater marl prairies in the interior of Everglades National Park. Since 1850, hydrologic projects have affected the vegetation of South Florida, including the Cape Sable sparrow's habitat. Sparrow numbers have declined by over 50% in the past five years, when high water levels flooded one of the two core populations. Using nest locations, we produced a conservative classification scheme, and determined how much suitable habitat was available to the sparrow from 1992 to 1996. We then used vegetation data from ground surveys to identify specific vegetation characteristics that were correlated with our satellite classification. These characteristics may indicate satellite-visible habitat features. We measured the total area of suitable habitat available to sparrows in each year, and discuss implications of our study for conservation of the species.

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Three figures as separate, viewable images

Note: to avoid unnecessarily large file sizes, these are not incorporated in the .pdf document itself.

- [Figure 2. Sparrow habitat 1992-1996](#)
- [Figure 3. Sparrow habitat 1992-1996 with fire information overlaid](#)
- [Figure 4. Sparrow habitat 1992-1996 with extensive survey overlaid](#)

Chapter 9: Satellite images

By Robert Powell and Clinton Jenkins

Summary: This chapter consists of satellite images, some of which are used in Chapters 7 and 8. They are provided in two resolutions. The 'low-resolution' images are 800 pixels

wide, suitable for viewing on most monitors. The 'high-resolution' images are based on the original resolution of the satellite imagery, and can be very large both in physical size and file size. They do, of course, have more detail. If you think you may want to look at them repeatedly, we suggest you download them to your computer first. To do so, right-click on the link (or click and hold on a Macintosh) and select "Save this Link as...".

Satellite images of Everglades National Park, with

- Estimated sparrow habitat
- The distribution of fires
- The results of the extensive survey

Year	Low resolution			High resolution		
	Estimated Sparrow habitat	With fire data	With extensive survey	Estimated Sparrow habitat	With fire data	With extensive survey
1992	View	View	View	Download	Download	Download
1993	View	View	View	Download	Download	Download
1994	View	View	View	Download	Download	Download
1995	View	View	View	Download	Download	Download
1996	View	View	View	Download	Download	Download
1992-1996	View	View	View	Download	Download	Download

Nest locations for 1996-1998

- [Low resolution](#)
- [High resolution](#)

Fire frequency maps

- [Low resolution](#)
- [High resolution](#)

Chapter 10. Breeding season data files from 1994-98

This is a table of contents for all breeding season data collected from 1994-1998. The table corresponds to a master disc held at the University of Tennessee in the care of S. L. Pimm. The table of contents is divided into several sub-sections concerning banding, behavior, nesting, water level, vegetation, and elevation. Folder and file names are indicated and a brief summary of the contents of each file is included.

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