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Welcome to the Walt Dineen Society

A forum for communicating about South Florida Ecosystems

Who is Walt Dineen?

J. "Walt" Dineen (1937-1990) was, for close to three decades, a highly respected biologist/ecologist in South Florida. He was Everglades Project Leader for the Florida Game and Fresh Water Fish Commission, and Director of Environmental Sciences at the South Florida Water Management District. Walt was one of the first to develop a broad regional perspective for the Everglades ecosystem, and to use that understanding to influence and improve management practices. Perhaps his most valuable contribution to the Everglades was his strong, personal demonstration of the importance of having well-informed scientists participate in the management and policy debates. For his early role in this process, we honor his name.

Mission

The Walt Dineen Society is an informal, non-affiliated forum, dedicated to the task of substantially improving the communication of technical information on the ecosystems of South Florida, among the natural, physical, and social scientists and the management and policy leaders who work in this region. The Society considers that frequent exchanges of research results, and multi-disciplinary discussions designed to integrate new information with the old, are essential steps leading to improved understandings of the natural components and ecological processes of the South Florida systems. It is these intellectual processes that will assure that our understanding of both the natural and managed systems continue to mature (i.e., "the whole [of our understanding] is greater than the sum of its parts"). By supporting a communications process that is organized from the perspective of systems, in contrast to an issues or project-driven perspective, we believe that science will be in the strongest position to make substantial contributions to the important management and policy questions raised by the restoration programs.

Walt Dineen Society Conferences

To achieve these goals, the Society sponsors conferences pertaining to the ecosystems of South Florida. The main priority of these conference is to encourage everyone who is conducting studies in the natural and physical sciences in South Florida to report on their on-going and completed work. These conferences differ from other technical conferences in the region in that:

- 1 they are systems-focused;
- 2 we encourage participation by all researchers and students of the natural systems of South Florida; and
- 3 the conference is organized to maximize the opportunities for the integration of new information from a broad array of disciplines.

For more information about upcoming or current conferences, please refer to our [Conference Page](#). Program information and abstracts from the first Walt Dineen Conference are available at the [Conference Archive](#).

For further information

To learn more about the Walt Dineen Society or Conference, contact:

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 West Palm Beach, FL 33416
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FIRST CONFERENCE

May 22-24, 1997

[1997 Conference Program](#)

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For More Information

Please direct any questions concerning the Walt Dineen Society or Conference to: Dan Childers [Phone: 305/ 348-3101 FAX: 305/ 348-4096]

For general information about the Society, please visit the [Dineen Walt Dineen Home Page](#).

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Walt Dineen Society Annual Conference '97

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- 15:00 - 16:15 [Session II: Environmental Management](#)
- 17:00 - 19:30 [Session III: Posters](#)

Friday, May 23, 1997

- 9:00 - 10:15 [Session IV: Wetlands](#)
- 10:45 - 11:45 [Session IV: Wetlands - cont.](#)
- 12:45 - 14:15 [Session V: Bird Studies](#)
- 15:00 - 16:30 [Session VI: Bird & Other Animal Studies](#)

Saturday, May 24, 1997

- 9:00 - 10:15 [Session VII: Marine Ecology](#)
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Daily Schedule of Sessions - Thursday, May 22

SESSION VI: BIRD & ANIMAL STUDIES

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15:00- 15:15	Dreitz et al.	97601	Sources of variation in annual count data used to estimate the number of snail kites in Florida
15:15- 15:30	Browder et al.	97602	Water bird usage of Florida Bay
15:30 - 15:45	Eklund et al.	97603	Population biology of the riverine grass shrimp, <i>Palaemonetes paludosus</i> and its response to water-level change in Everglades marshes
15:45 - 16:00	Mumford and Fry	97604	Food web structure in Lake Okeechobee
16:00 - 16:15	Morrison and Bean	97605	Benthic macrophyte seasonality in the Everglades-Florida Bay ecotone: Influence of freshwater inflow
16:15 - 16:30	Comiskey et al.	97606	SIMPDEL: A spatially explicit individual-based simulation model for Florida panther and white-tailed deer in the Everglades and Big Cypress landscapes

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Session VI: Bird & Animal Studies

Abstract #: 97601



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SOURCES OF VARIATION IN ANNUAL COUNT DATA USED TO ESTIMATE THE NUMBER OF SNAIL KITES IN FLORIDA

Victoria J. Dreitz, Robert E. Bennetts, and Wiley M. Kitchens
 Dept. Biol., Univ. of Miami, Coral Gables, FL; Coop. Fish and Wild. Res. Unit, Gainesville, FL; & U.S. Geological Service, Coop. Fish and Wild. Res. Unit, Gainesville, FL

ABSTRACT

Since 1969 the number of Snail Kites (*Rostrhamus sociabilis*) in Florida has been monitored via a quasi-systematic annual count. Numerous biological interpretations have been derived from these counts assuming that the counts represent complete censuses. Often the interpretations have little or no regard for the inherent sources of variation in these data that could influence the validity of subsequent interpretations. Here we examine several sources of variation inherent in the annual count and present data showing how several systematic sources of variation can greatly influence the probability of detecting individuals on any given count. We suggest that capture-recapture (mark-resighting) techniques offer a reasonable alternative for estimating populations size. This approach enables explicit estimation of the probability of detecting individuals. We present preliminary results using this technique to estimate population size of Snail Kites in Florida.

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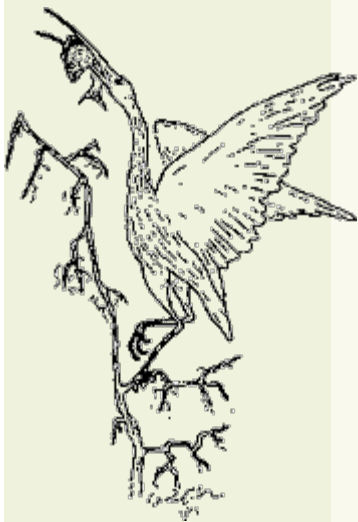

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Session VI: Bird & Animal Studies

Abstract #: 97602



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WATER BIRD USAGE OF FLORIDA BAY

Joan Browder, Oron Bass, Jennifer Gebelein, and Haolon Huang
 NOAA/National Marine Fisheries Service, Miami, & NPS/Everglades
 National Park, Walt Dineen Homestead

ABSTRACT

An aerial census of Florida Bay conducted from an HH65 Dolphin helicopter (courtesy U.S. Coast Guard, Miami Air Station) provides the first comprehensive multi-species, baywide view of wading bird abundance, spatial distribution, and habitat use. More than two complete years' of monthly observations reveal seasonal patterns.

Objectives are to (1) determine usage of various types of bay habitat, (2) determine overall abundances, (3) compare present to past abundances for a few species that have been counted previously, and (4) compare abundances and seasonal usage of the bay to that in mangrove and freshwater areas of Everglades National Park. During the first 9 mo, we flew regularly spaced north-south transects and diverted from the flight path to circle islands within one-half mile distance. Beginning month 10, we adopted a more efficient strategy that focused on islands and nearly exposed banks. White Ibis were the most abundant wading bird species the first winter, followed by Great and Snowy Egrets. The Great White Heron was the wader that most fully used the Bay. It was consistently the most widely distributed species across Florida Bay in all months. The Great Blue Heron was less numerous than the Great White Heron, more seasonal in its occurrence, and more restricted in its distribution (mainly the western and southwestern bay). During the winter, Great and Snowy Egrets were more numerous than Great White Herons. The spatial distribution of Great Egrets was similar to that of Great White Herons. One surprise was the large number of small wading bird species using the bay. Little Blue Herons, Snowy Egrets, and Tri-colored Herons extended deeply into the bay, not just along the northern fringe.

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Walt Dineen Society Annual Conference '97

Session VI: Bird & Animal Studies

Abstract #: 97603



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**POPULATION BIOLOGY OF THE RIVERINE GRASS SHRIMP,
PALAEMONETES PALUDOSUS AND ITS RESPONSE TO WATER-LEVEL
CHANGE IN EVERGLADES MARSHES**

Anne-Marie Eklund

NMFS, 75 Virginia Beach Dr., Miami, FL 33149

William F. Loftus

USGS-Biological Resources Division, Everglades National Park Field
Station, 40001 State Rd. 9336, Walt Dineen Homestead, FL 33034**ABSTRACT**

Palaemonetes paludosus is abundant in Everglades marshes and serves as an important link in the marsh food web. Only one other study has investigated the life history and ecology of this species in Everglades marsh habitats, but the conclusions of that study are questionable because of an inherent bias in the pull-trap sampling gear used. We used an improved sampling gear, the throw trap, to examine the responses of riverine grass shrimp to hydrological patterns in the Shark River Slough marshes of Everglades National Park, during a six year period. We analyzed shrimp density, biomass, fecundity, reproductive seasonality, and size of maturity in long-hydroperiod marshes and in hydrologically challenged, short-hydroperiod areas. Prawn density and biomass were significantly lower in areas subjected to frequent dry-downs than they were in areas with sustained flooding. Although previously published pull-trap data indicated that shrimp abundance declined during an extended high-water period, data from our study show instead that the density of *P. paludosus* increased during a period of prolonged high-water. Based on the results from the more accurate throw-trap gear, we conclude that frequent dry-downs will produce degraded marshes with reduced standing stocks of aquatic animals.

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Abstract #: 97604



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[Conferences](#)[Programs](#)[Index to Authors](#)[Walt Dineen Home](#)**FOOD WEB STRUCTURE IN LAKE OKEECHOBEE**

Patricia L. Mumford and Brian Fry

Biology Department, Florida International University, University Park,
Miami, FL 33199**ABSTRACT**

Food web structures in lakes are often complex and poorly understood. We used stable isotopes to describe the food web linkages and functional similarity of fish communities at 5 sites across Lake Okeechobee. Stable isotopes provide a natural tag that allowed us to find different feeding patterns of fish subgroups within the lake. When averages for the entire fish communities were taken, the five sites sampled showed distinctive patterns of $\Delta^{13}\text{C}$ and $\Delta^{15}\text{N}$ isotopic compositions. The marsh site (MH24,000) had distinctly lower $\Delta^{13}\text{C}$ and $\Delta^{15}\text{N}$ values than the other sites, the offshore site (LZ-40) had high $\Delta^{13}\text{C}$ and $\Delta^{15}\text{N}$ values, and the other 3 sites that were close to the marsh-open water interface had intermediate isotope values. The $\Delta^{13}\text{C}$ isotope data were most useful for distinguishing which fish species feed offshore, which species use the marsh, and which species migrate between the two habitats. All sizes of black crappie were found to have similar $\Delta^{13}\text{C}$ values, indicating offshore feeding throughout their lives. In contrast, largemouth bass showed strong changes in $\Delta^{13}\text{C}$ with size, consistent with a migration from marsh to offshore areas as fish grow. The $\Delta^{15}\text{N}$ values are a trophic level indicator, with N isotope values increasing with increasing trophic level. The progression of $\Delta^{15}\text{N}$ across sites generally followed the size of the fish collected, with smaller fish from the MH site having lower values and larger fish from the other sites with higher $\Delta^{15}\text{N}$ values. Underlying these broad patterns, there was evidence for a finer-grained distribution of isotope labels, beyond the simple marsh vs. offshore contrast. The non-uniform distribution of isotope labels at the marsh site, indicated that small fish differ strongly in their foraging habits.

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Walt Dineen Society Annual Conference '97

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Abstract #: 97605



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[Conferences](#)[Programs](#)[Index to Authors](#)[Walt Dineen Home](#)**BENTHIC MACROPHYTE SEASONALITY IN THE EVERGLADES-FLORIDA BAY ECOTONE: INFLUENCE OF FRESHWATER INFLOW**

Morrison, D., Bean, D., Wise, M., and Sorrentino, D.

National Audubon Society, 115 Indian Mound Trail; Tavernier, FL 33070

ABSTRACT

Water management practices have altered the natural freshwater flow patterns into the mangrove ecotone zone along the north shore of Florida Bay. This study characterizes seasonal patterns of submerged macrophytes in the estuarine waterbodies in this zone. We evaluate the influence of freshwater inflow on macrophyte dynamics. This project provides information for developing and evaluating management strategies to restore more natural freshwater inflow patterns.

Two sampling regimes were used to assess benthic macrophyte seasonal abundance, distribution, and community structure: 1) at the end of wet and dry seasons on a waterbody wide scale measuring percent cover, and 2) on a smaller spatial scale, but with greater frequency (every two months, measuring biomass). Eight waterbodies, oriented along freshwater flow paths (hence, salinity gradient) from inland to Florida Bay, were surveyed. Project duration was October 1995 to December 1996 (two wet and one dry season surveys).

Submerged macrophyte abundance and distribution varied seasonally. Benthic macrophyte seasonality was related to seasonal patterns in salinity and light penetration or water clarity. However, these biological and physical patterns differed spatially and temporally. Macrophyte seasonal patterns differed among waterbodies, and even within some waterbodies. Seasonal patterns differed in the same waterbody from year (1995 wet season) to year (1996 wet season). These differences in macrophyte seasonal patterns are likely due to the relative importance of different physicochemical factors, primarily salinity and light, affecting plant growth over spatial (among waterbodies) and temporal (interannual) scales. Salinity and benthic light availability are affected by freshwater inflow patterns. Chara was the dominant species in waterbodies with median salinity < 15 ppt. Halodule was abundant in waterbodies with median salinity > 18 ppt.

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Walt Dineen Society Annual Conference '97

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Abstract #: 97606



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SIMPDEL: A SPATIALLY EXPLICIT INDIVIDUAL-BASED SIMULATION MODEL FOR FLORIDA PANTHER AND WHITE-TAILED DEER IN THE EVERGLADES AND BIG CYPRESS LANDSCAPES

E. J. Comiskey, L. J. Gross and M. A. Huston

The Institute for Environmental Modeling University of Tennessee, Knoxville, TN 37996-1610

ABSTRACT

A model has been constructed with the primary objective of assessing the relative impacts of alternative hydrologic scenarios over the next several decades on the spatial and temporal distribution of panther and deer across South Florida. This includes the capability to produce relative comparisons of mortality, reproduction, individual movement patterns and territory size across the landscape for both species. The modeling approach is individual-based, in which detailed physiological and behavioral information on deer and panther are utilized to construct rules which allow the simulation of over 30,000 individual animals across the landscape, keeping track of individual characteristics such as weight, sex, mating status, and health. The behavioral rules are coupled to a dynamic spatially-explicit hydrologic model, a vegetation model, and a variety of GIS-type inputs for roads, landuse, and feral hog density. The model operates on a daily time step, although within this time step, deer and panther movements are simulated, taking account of local water conditions, forage and prey availability. Spatially, the model makes use of vegetation data to calculate forage availability on a 100 m scale, but tracks deer and panther locations on the daily time step at 500 m scale. Validation involves detailed comparisons of deer distributions with historical data, comparison of aggregated variables such as age-dependent mortality, age-structure, body weight distribution and birth rates with available data, and comparison of model individual-movement patterns with radio collar data. A visualization program has been written to allow easy access to the radio collar information available, and provide a means to readily compare this to model output.

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