

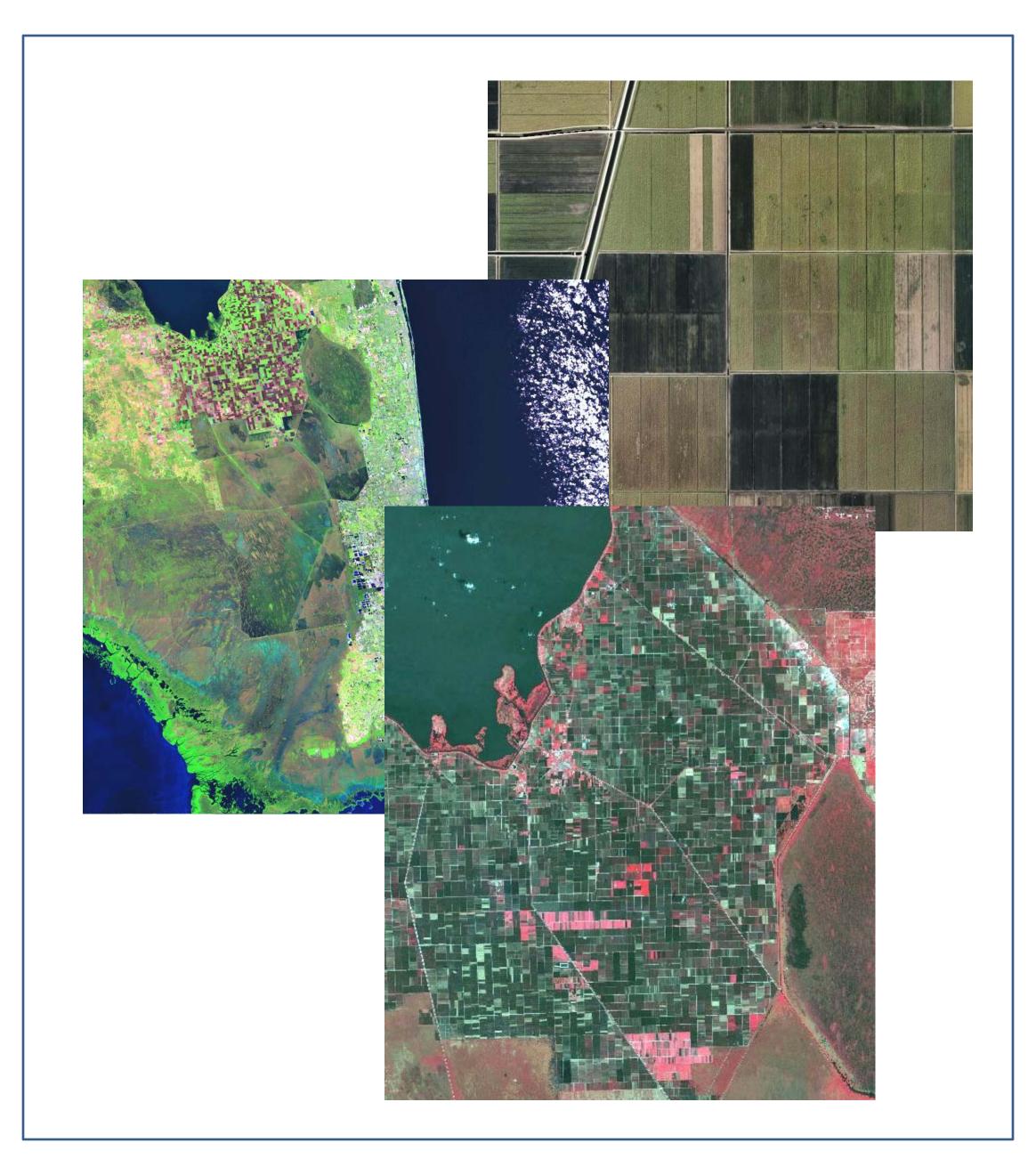
## A Conceptual Ecological Model for the Everglades Agricultural Area

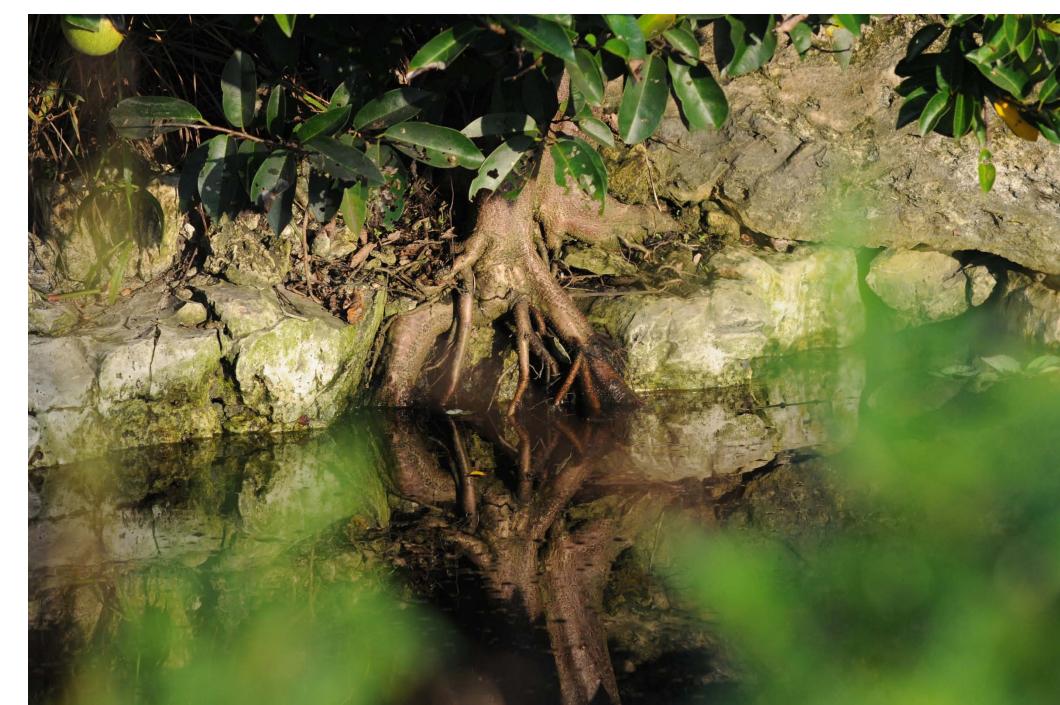
Elise V. Pearlstine<sup>1</sup> and Frank J. Mazzotti<sup>2</sup>





For the EAA to be a functioning agroecosystem, it should be sustainable, contribute to Everglades restoration and support local communities and wildlife





The Everglades Agricultural Area (EAA) is a 700,000 acre agricultural area on former marsh habitat in southern Florida located south and east of Lake Okeechobee, north of Everglades remnant natural habitat and west of the large metropolitan area of Palm Beach County. Sugarcane is the primary crop and is rotated with rice. Vegetables and sod are also grown in the area. Wildlife is diverse and abundant in the agricultural fields, edges and associated habitat. The EAA has been identified as an important component of Everglades restoration beginning with the Everglades Forever act that established water quality standards in the area and more recently with the proposed purchase of 73,000 acres for water treatment, water storage and habitat restoration. This landscape is heavily managed for economic benefit and provides income for local communities and residents. It is also a large acreage agroecosystem with unique attributes and wildlife communities.

> LEGEND: Drivers

Stressors

Linkages

Attributes

Management

From natural to agriculture,

loss of habitat,

seasons reflect harvest

and planting not natural wet

and dry,

limited access,

•low traffic

Low road

mortality and

collecting

Restored to natural

Converted to urban

Sustained as

agroecosystem

Combination

Land Use

Flooded fields,

canals and

ditches

Summer

sugarcane, winter

vegetables

Possible Outcomes

 pesticide, harvest, air quality, water quality, altered hydrology, BMPs

Low input and high input crops

Contamination, air pollution

Altered animal community

Soil and Climate

Change

Biofuels

and/or gain

Upland habitat

for native

species

- Ecotourism
- Healthy rural
- communities
- High intensity crops

Flooded areas Recreational activities such as fishing, hunting,

Habitat gain or loss

birding Loss or discouragement •Carbon sequestration Input alteration

 Water storage and cleansing ability

Wildlife community

Habitat

seasonality, connectivity, spatial extent varies with crop type and management, protected from pet trade Yearly harvest

Wetland to upland

non-native edges and canal vegetation

Pest animal

control

Habitat loss

Wildlife



UF UNIVERSITY of FLORIDA IFAS

**Economics** 

Drain. irrigate storage, release,

remove phosphorus

•flooding, •storms, soil maintained through Climate change

drought,

Natural Cycles

flooding and high water table

Subsidence and erosion

Water and Chemical Use

Agroecosystem

- Changes
- Recreation
- Rock pits

of wildlife