Management Approaches and the Importance of Working with Land Managers to Recover Imperiled Species

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- Habitat loss is one of the reasons for the Florida grasshopper sparrow (FGSP) population decline.
- Susceptible to continued loss and degradation of habitat
- Habitat management is one part of a multi-pronged approach to recover the subspecies:
  - USFWS South Florida Multi-Species Recovery Plan
  - Florida Grasshopper Sparrow 5-Year Strategic Vision

Recovery for the Florida Grasshopper Sparrow

Ammodramus savannarum floridanus

Recovery Objective: RECLASSIFY to threatened.

Recovery Criteria

This objective will be achieved when any further loss, fragmentation, and degradation of habitat within the Kissimmee River basin has been prevented; when at least 10 protected and managed sites contain stable, self-sustaining populations of 50 to 100 breeding pairs of Florida grasshopper sparrows within the historic range of the species; and when Florida grasshopper sparrows on each of these sites exhibit a rate of increase (r) equal-to or greater than 0.0, sustained as a 2-year running average over at least 6 years.

This recovery objective is an interim goal because of the limited data on the biology, ecology, and management needs of this species. It may be possible to reclassify the Florida grasshopper sparrow if there is sufficient, restorable habitat that can be recolonized by additional populations; however, the feasibility of such restoration and recolonization is still uncertain. This recovery objective will be reassessed annually based on new research, management, and monitoring information. These criteria will be refined if new information identifies new ways of re-establishing populations of this species or expanding its current range.

Species-level Recovery Actions

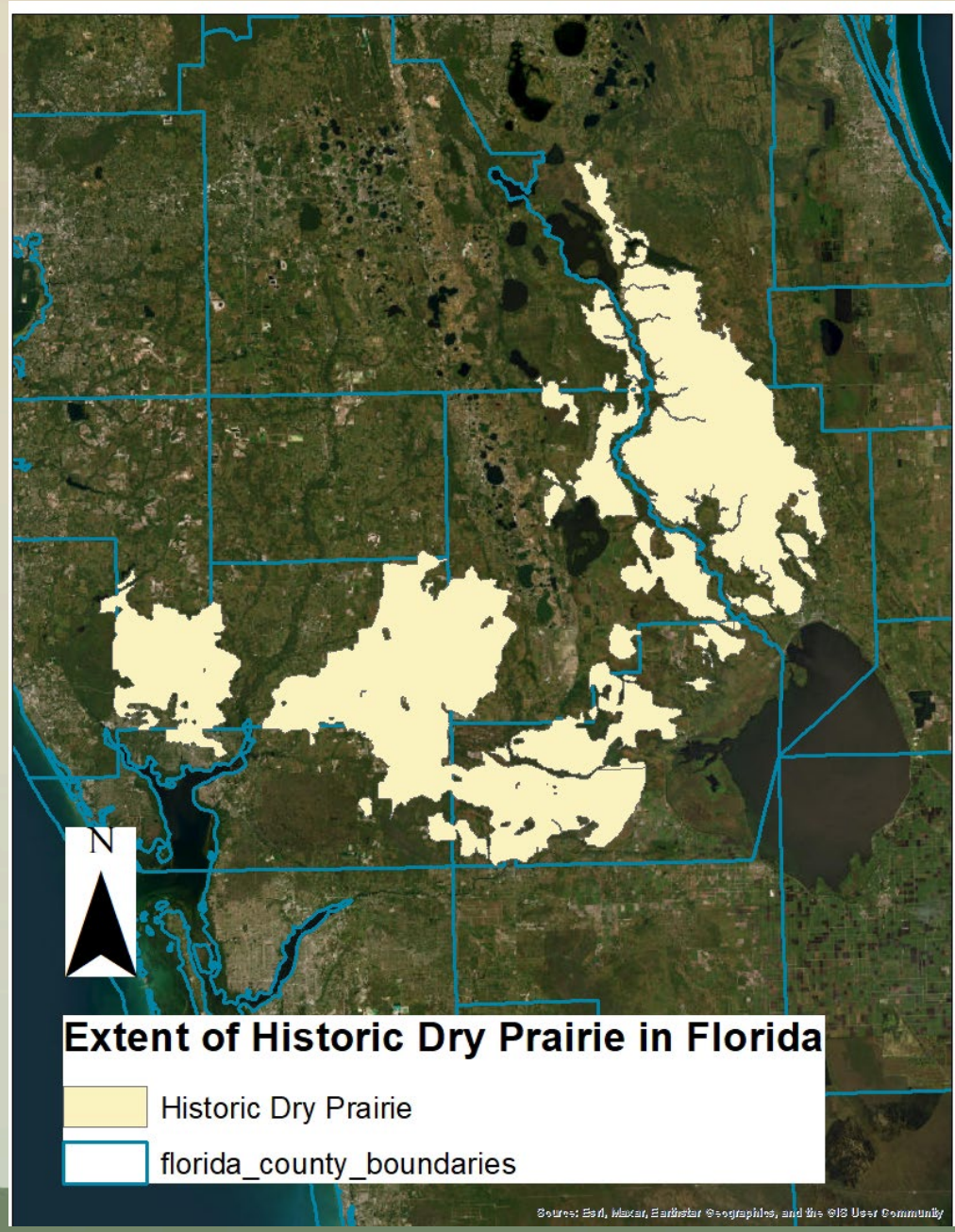
S1. **Determine the distribution and abundance of the Florida grasshopper sparrow.** Additional surveys should be undertaken to more accurately determine current distribution and abundance of the Florida grasshopper sparrow. The locations of remaining dry prairie habitat at Avon Park AFR, Three Lakes WMA, and the Or Sanctuary are provided in Shriver (1996). In addition to thes used to locate potential habitat on private lands which may

S2. **Protect and enhance existing populations of Florida gra**

S2.1. **Encourage natural colonization of restored h**

Florida grasshopper sparrows…

- Occupy dry prairie and pasture habitat found within the historical footprint of the Kissimmee dry prairie
- Require early successional habitat maintained by fire, mechanical treatments, and/or grazing.
- Require large expanses of open dry prairie habitat that is frequently burned.
- Avoid areas where tree density is >1 tree/acre
- Dry prairie habitat has declined in extent by over 80%
- With significant loss of dry prairie habitat throughout their range, important to consider all land use types, including working lands/private lands in conservation planning.



- The availability of suitable habitat is critical for the recovery of a species throughout its range:
  - The availability of well-managed habitat is vital for release sites for the conservation breeding program
  - Important for intrinsic growth of the wild population
- Therefore, management objectives for FGSP recovery includes:
  - ➢ Maintain suitable, occupied habitat.
  - ➢ Restore and manage habitat for intrinsic growth.
  - ➢ Create suitable habitat for conservation breeding release sites.
- Management planning at the landscape level is imperative when recovering an imperiled species
- Management should be applied at the population level

- Since habitat management is one of the objectives listed in the Recovery Plan, it is imperative for land managers to be part of the planning and implementation of FGSP recovery.
  - 5-Year Strategic Vision-development and implementation
  - Florida Grasshopper Sparrow Working Group

Photo credit: F. Baeza

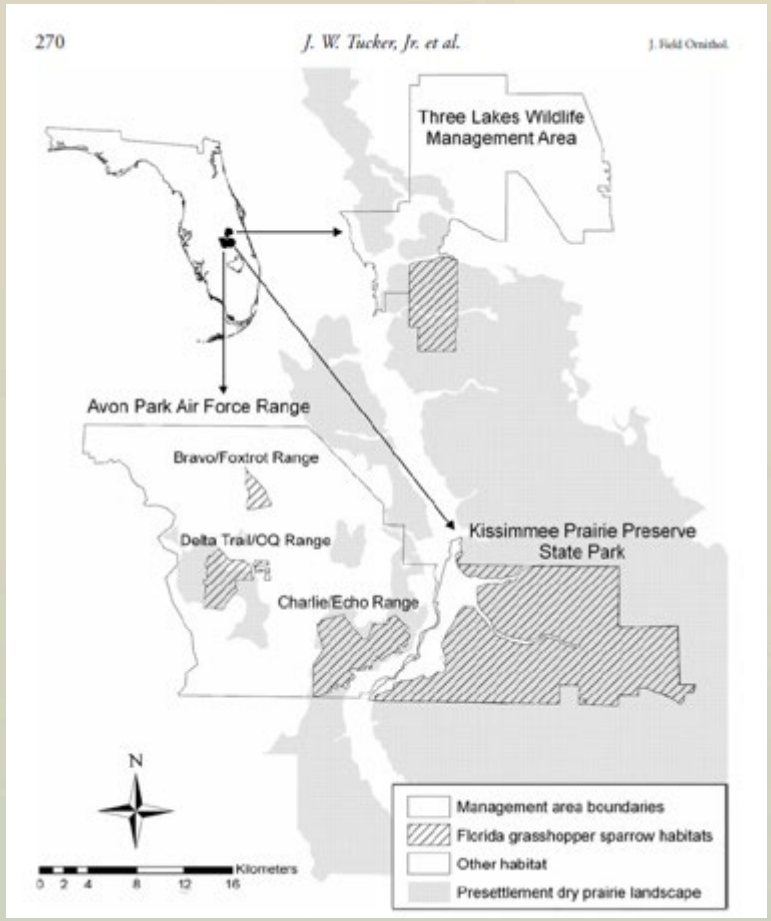


Photo credit: F. Baeza

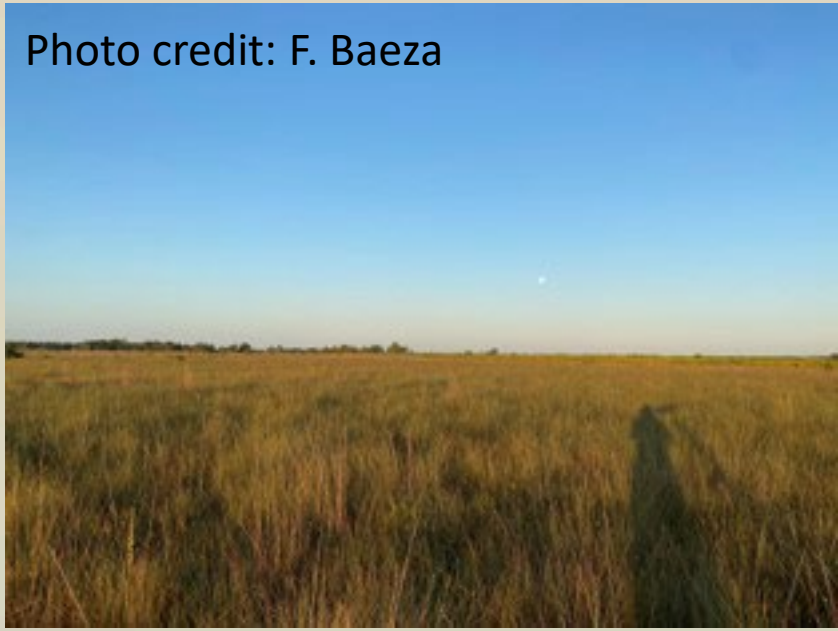


Photo credit: F. Baeza

- Collaboration with private landowners is important when only a small portion of dry prairie remains.
- Connectivity between conservation lands/breeding aggregations.
- Landowners can be stewards of the land and champions for imperiled species.

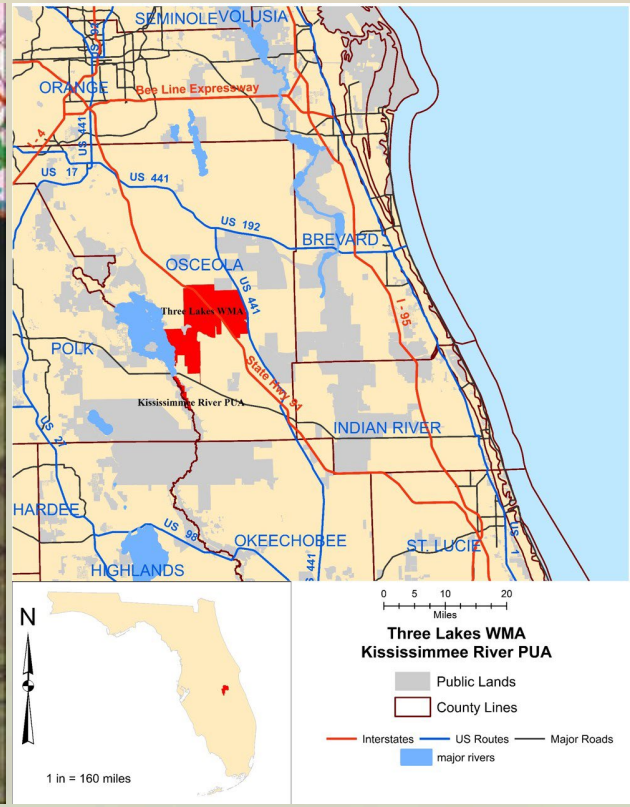
Benefits:

- Altered hydrology, habitat protection

Challenges:

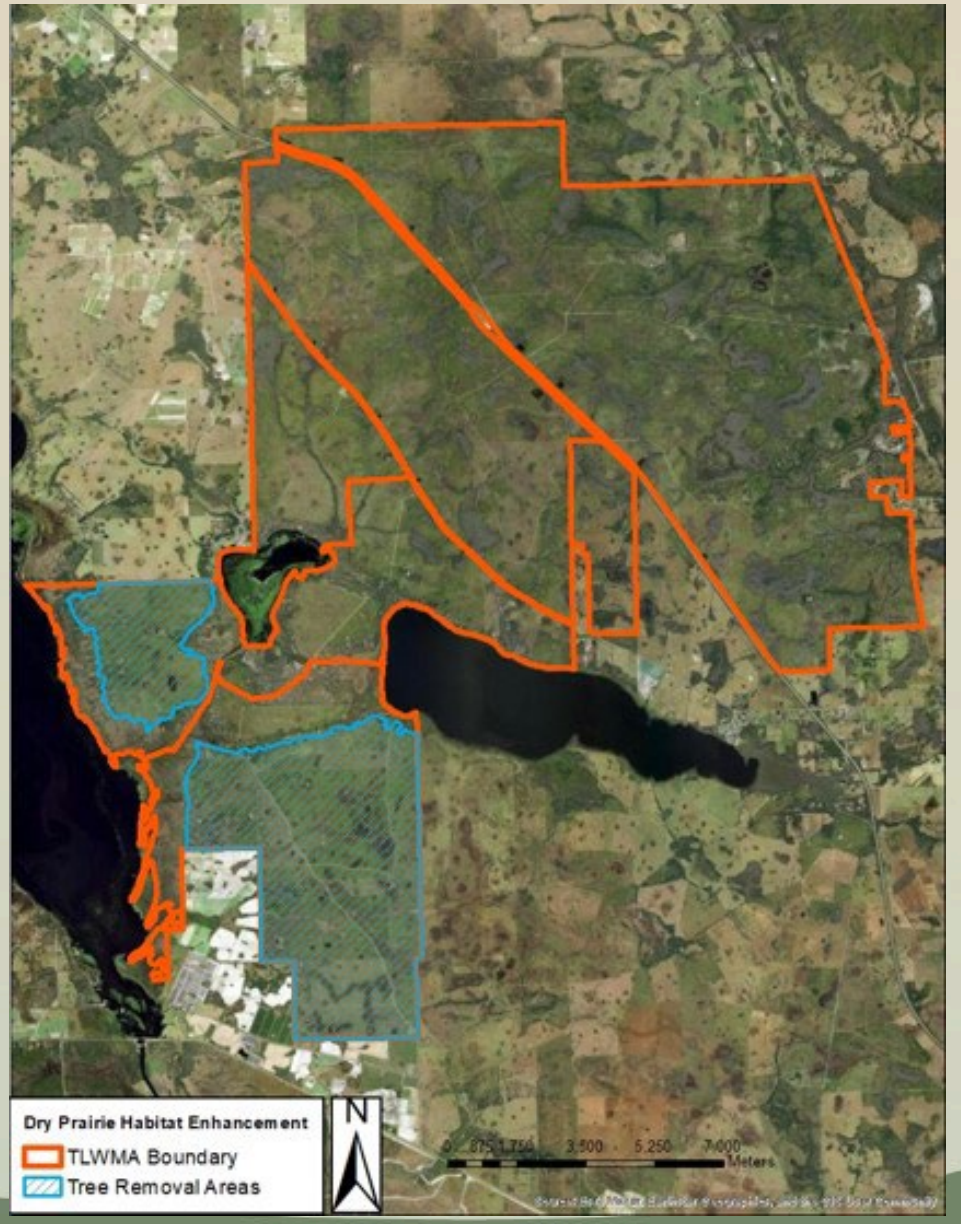
- Resource limitations, funding limitations, RIFA
- Importance of incentives/cost-share to assist with management

- Three Lakes WMA (TLWMA) has been identified as a priority site for FGSP conservation:
  - Comprised of over 65,000 acres and managed by the Florida Fish and Wildlife Conservation Commission (FWC)
  - Contains over 16,000 acres of dry prairie habitat.
  - 10, 500 acres of dry prairie habitat found in the historical Kissimmee dry prairie footprint.
  - Home to largest known remnant FGSP breeding aggregation.
  - In 2019, TLWMA became the first release site for the conservation breeding program



- Prior to the release of conservation-bred FGSPs, FWC conducted dry prairie enhancement on TLWMA to expand suitable FGSP habitat.
- Goal: Identify, maintain, and enhance dry prairie habitat critical for the survival of the FGSP on TLWMA.
- Identified historic dry prairie on the area including occupied dry prairie habitat on the verge of becoming unsuitable and unoccupied dry prairie with the potential to support FGSP.
- Past fire suppression and changes in hydrology caused hardwood and canopy tree encroachment
- Since research indicates FGSPs are less likely to occupy habitat within 400 meters from habitat edges, restoration included canopy tree removal.

- Tree removal occurred throughout 3,800 acres of dry prairie
- Canopy trees (primarily oaks and cabbage palms) were mulched
- Frequent prescribed fire (1 to 3-year FRI), mechanical treatments, and herbicide treatment of non-native vegetation to maintain enhanced habitat



Tree Removal Project

Before

After

If you build it, they will come…not always.


FGSP Nests (2023)
A
B
C
D
E
F
G
H
MMM
NNN
I
J
K
OOO
L
M
N
O
PPP
P
Q
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S
T
U
V
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Y
X
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FF
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HH
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OO
PP
QQ
RR
SS
TT
UU
VV
WW
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AAA
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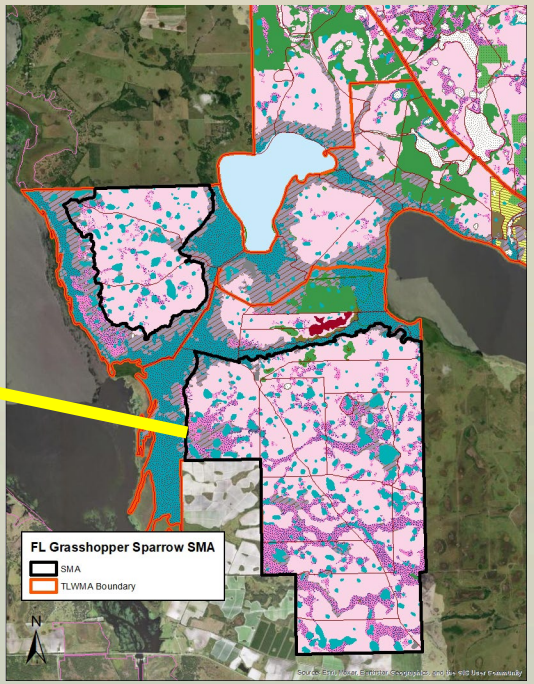
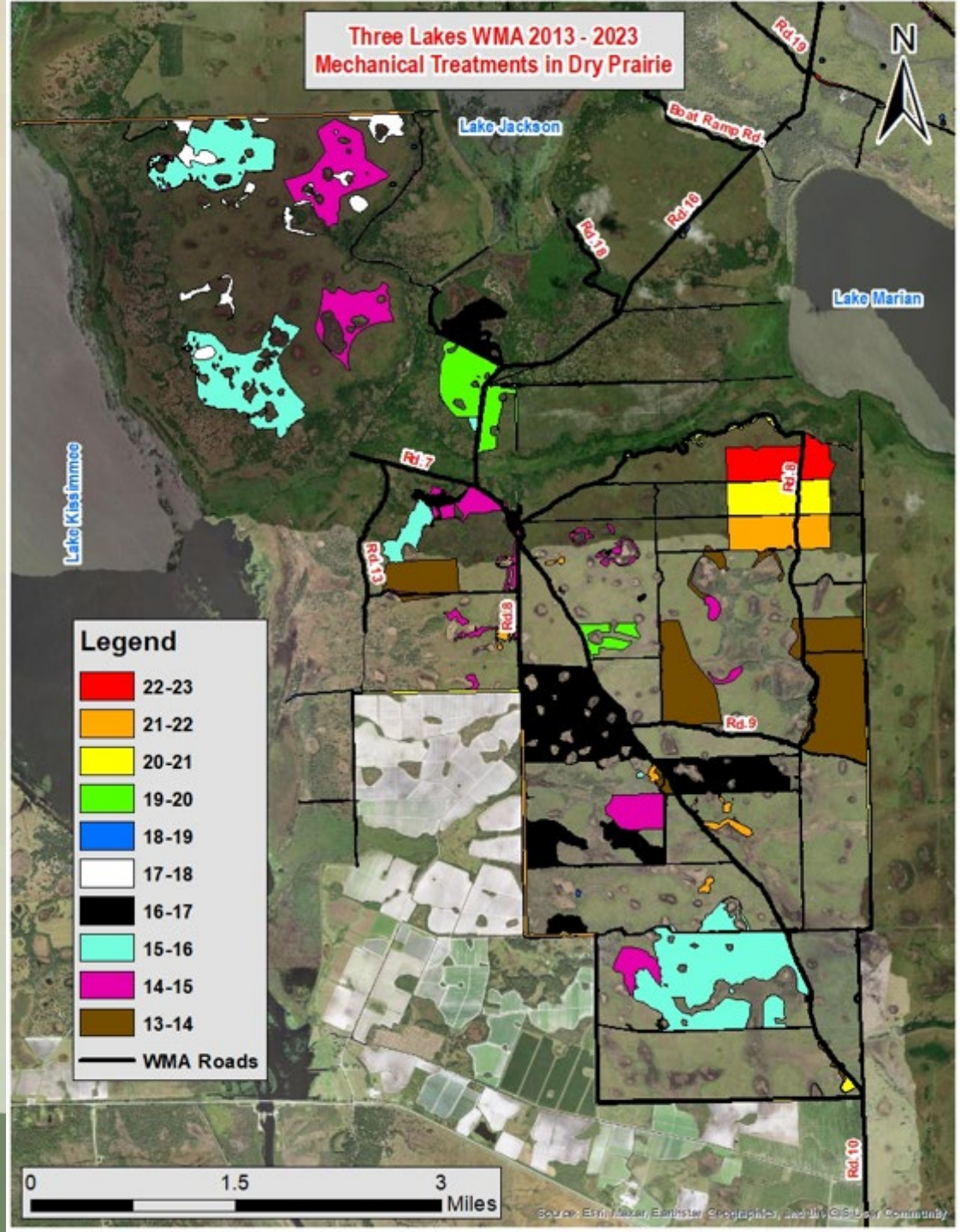
FFF
GGG
HHH
III
JJJ
KKK
LLL
ock Fish Camp & Airboat Rides


FL Grasshopper Sparrow SMA
SMA
TLWMA Boundary
N

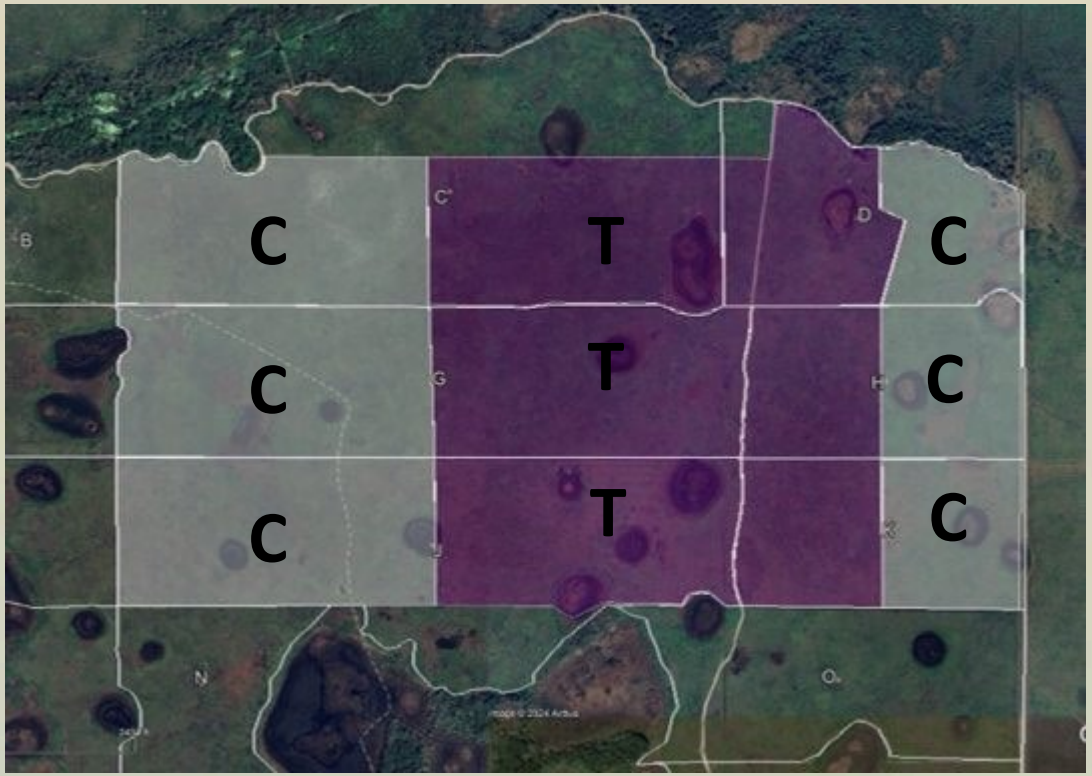
- These efforts increased available open dry prairie habitat for the release of conservation-bred FGSPs and intrinsic growth
- Habitat monitoring occurs on TLWMA to ensure conditions are suitable for FGSPs and other prairie inhabitants
- FGSP monitoring indicates FGSPs are responding positively to management and are occupying enhanced habitat.

- A potential explanation for the continued decline of FGSP on public lands is a decrease in habitat quality, such as through encroachment of saw palmetto in the existing Florida dry prairie
- Roller-chopping in combination with fire has proven to be effective at restoring dry prairie habitat by reducing saw palmetto height and density
- TLWMA staff treated multiple units with roller-chopping followed by prescribed fire to improve habitat for FGSPs.
- Sparrow occupancy increased in treated units.



Collaborative study…

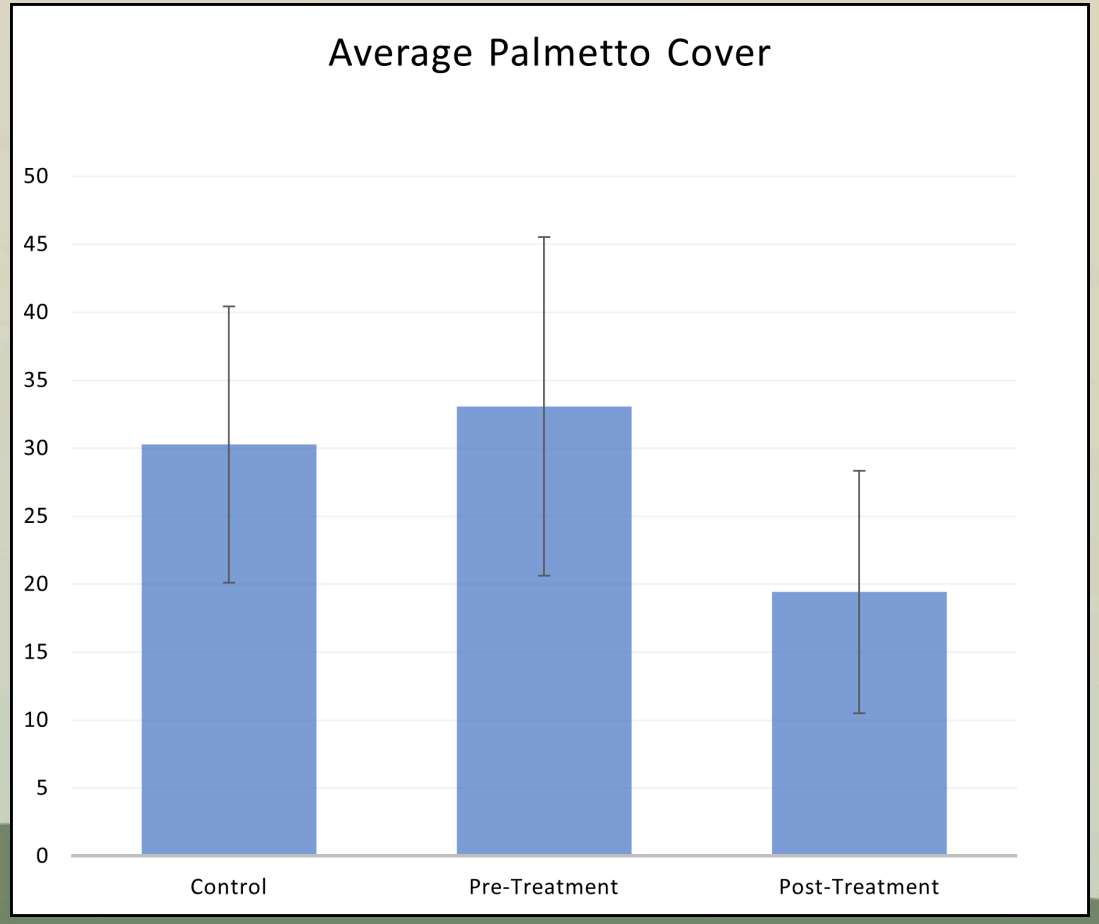
- Determine if roller chopping combined with burning decrease the height and density of saw palmetto.
- Determine if roller chopping combined with burning increase occupancy and abundance of FGSP.
- Determine if nest predation rates of ground nesting birds in Florida dry prairie differ between roller chopped and non-roller chopped areas.

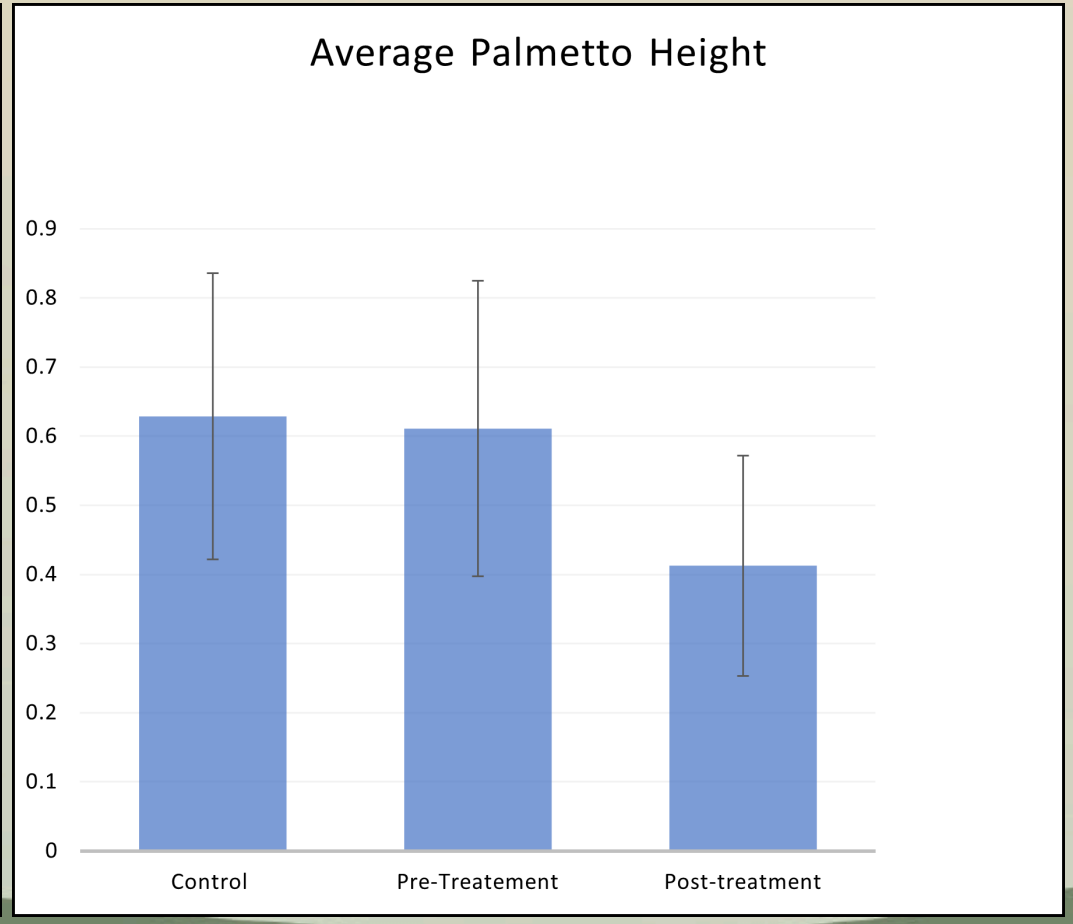


~300 to 400 acres roller chopped between 2021-2023


Treatment
Control
Six burn units with the same fire history

Preliminary results…sparrows seem to be responding positively to treatments!





- Recovery of imperiled species requires protection and management of suitable habitat at the landscape level, and therefore, different land use types should be considered in the context of conservation.
- Habitat restoration and management varies depending on land use practices and objectives so land managers from multiple sectors should be included in conservation planning.
- Communication between land managers and biologists monitoring the population can improve effectiveness of management.
- Important to have a long-term Management Plan in place to guide management, identify resource needs, identify funding needs.
- Important to assess habitat conditions and monitor FGSP response to habitat management treatments periodically to guide management
- Since loss of native habitat is one of the reasons for the decline of many imperiled species, habitat restoration and management is integral to the recovery and should take an adaptive approach guided by ongoing research.

Thank you!

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