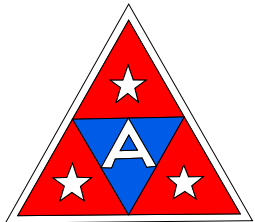


Mosaic Fertilizer's Wellfield: Habitat Restoration, Conservation & Growing the Florida Scrub Jay



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FSJ Background

Legal Status & Threats

- Listed as Threatened by USFWS (ESA) in 1987
- Threatened due to habitat loss from land use conversion, habitat fragmentation, and degraded habitats due to fire exclusion



Florida Scrub Jay Habitat

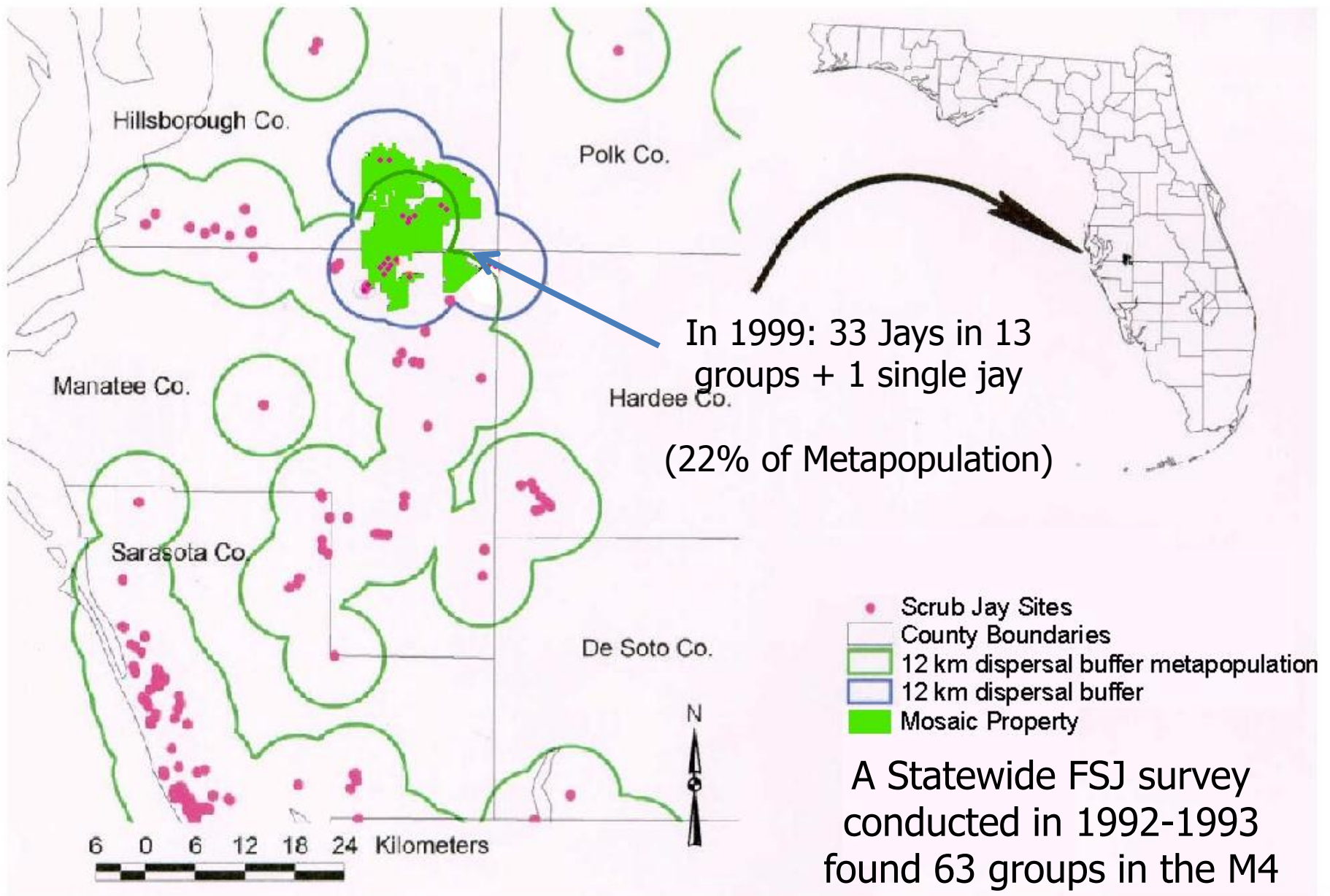
- Dry sandy upland with an open herbaceous stratum
- Dominated by low growing (<10 feet) scrub oak shrubs
- Lacks or has low (<15%) forest canopy
- Vegetation structure maintained with periodic prescribed fire every 5-20+ years.



Florida Scrub Jay Ecology

- Habitat Specific
- Monogamous family groups
- Defend territories year round
- Juveniles become helpers and aid the family group with territory defense and feeding
- Helpers typically form pair bonds at 2-4 years



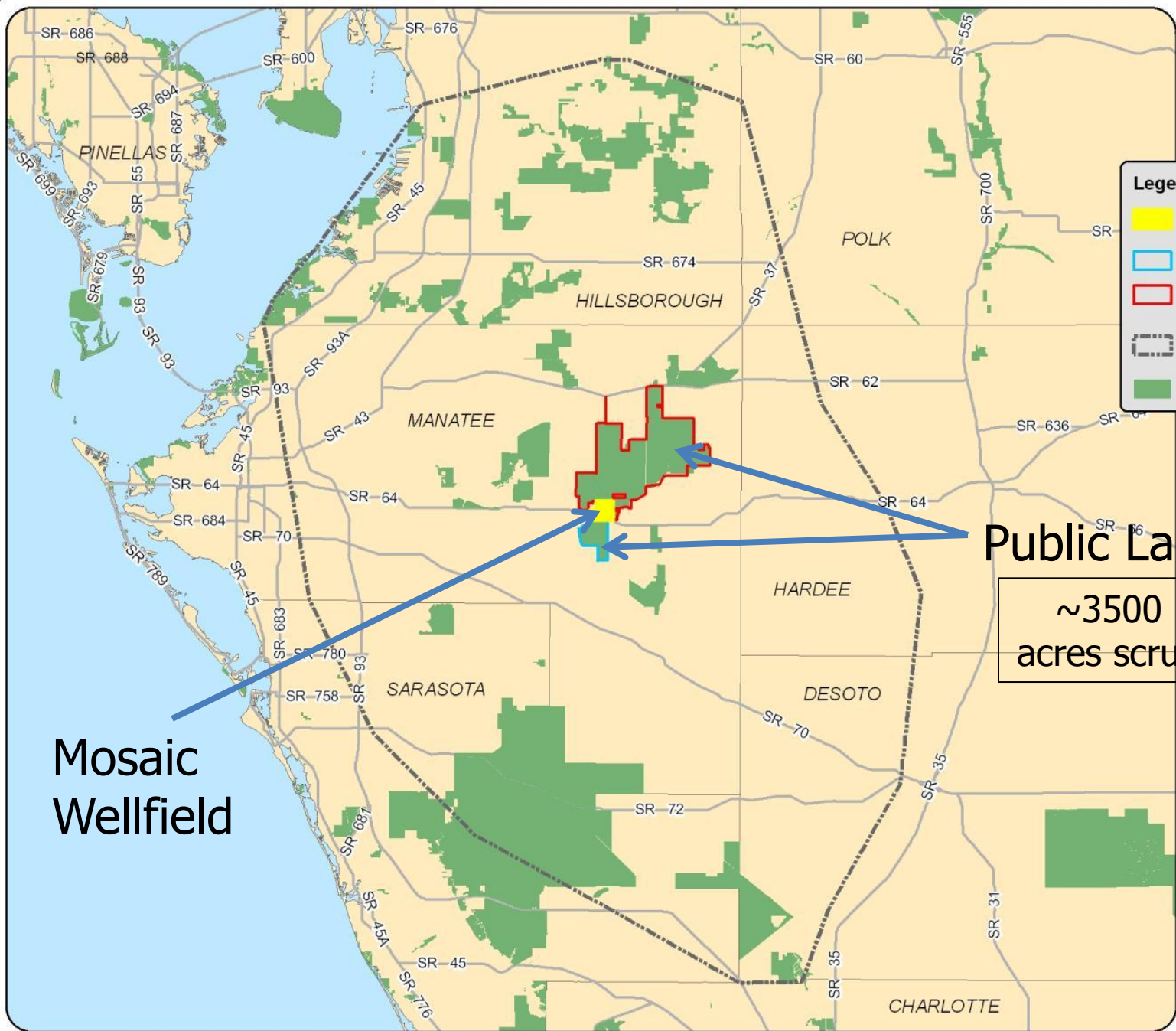


Distribution of Florida Scrub Jays - West Central Florida

Duette Preserve, Mosaic Wellfield, and Other Public Managed Lands

Legend

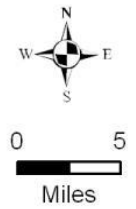
- Mosaic Wellfield
- SWFWMD Coker Prairie Tract
- Duette Preserve
- Hillsborough/Manatee Scrub-Jay Metapopulation Boundary
- Hillsborough/Manatee Scrub-Jay Metapopulation Boundary
- Public Lands



Public Land

~3500
acres scrub

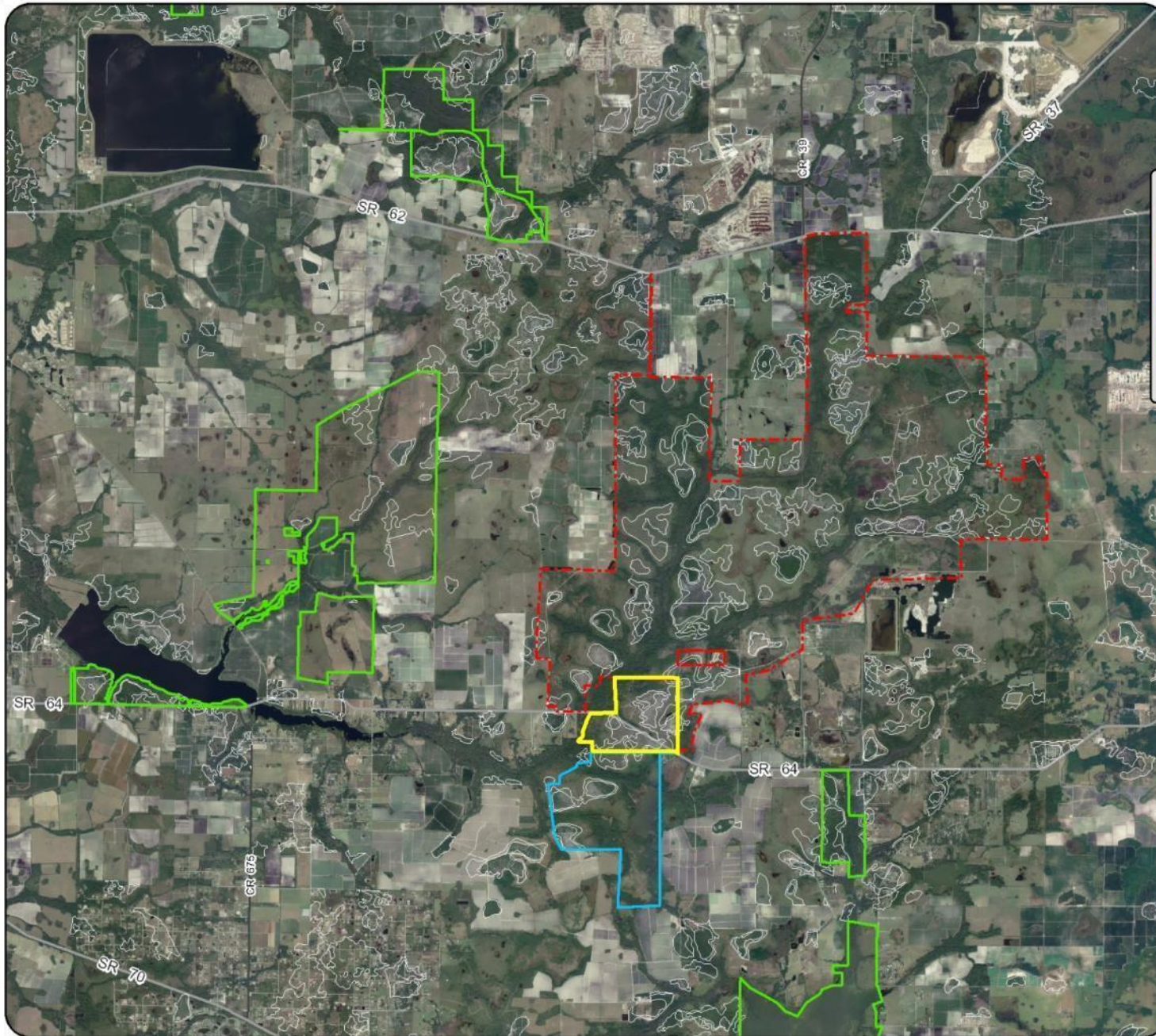
Mosaic Wellfield



QUEST
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Duette Preserve, Mosaic Wellfield, and Other Public Managed Lands



Legend

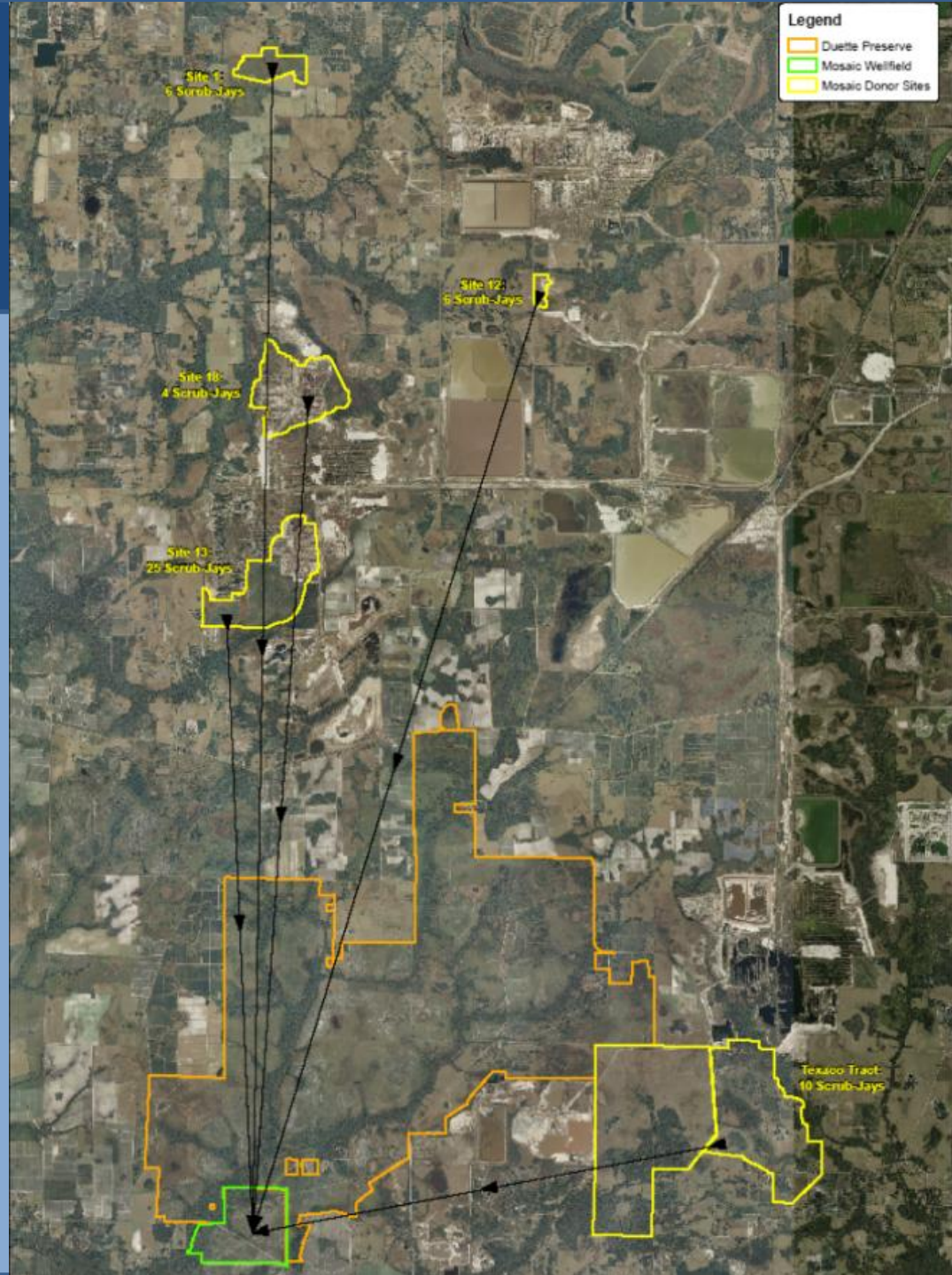
- Mosaic Wellfield
- Duette Preserve
- SWFWMD Coker Prairie Tract
- SWFWMD and FDEP Managed Lands
- Scrub Soils



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Mosaic Donor & Recipient Sites





Why Translocation?



- Source population (14 FLSJ families in 6 subpopulations) on Mosaic land permitted for take under ESA
- Population Modeling indicated a high extinction probability of jays due to fragmentation, and habitat degradation in existing locations.
- Restoration, preservation, and successful translocation of FLSJs to a recipient site in the core of the metapopulation (Mosaic Wellfield) had the greatest chance to reduce the effect on the extinction risk of the entire FLSJ metapopulation.

Development of Mosaic's Florida Scrub Jay Habitat Management Plan

(Southern Hillsborough and Manatee Counties)

OBJECTIVES

1. Identify/quantify the baseline FSJ population condition
2. Determine which jay families at immediate risk of extinction
3. Provide mitigation for proposed impacts
4. Coordinate with adjacent land owners to conduct management of FSJ habitat in M-4
6. Implement experimental translocations of at risk, isolated Florida Scrub Jays (Translocations 2003 -2013)

Mosaic's scrub-jay banding program



Scrub Jays banded between 1999 – 2001
Jays are banded as needed since 2001

Mosaic Wellfield Scrub Habitat Management Units



QUEST
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Mosaic Wellfield
Manatee County, Florida

Figure 1
Management Units



0 850
Feet

Mosaic Wellfield Scrub Habitat Management Pre-Restoration



Mosaic Wellfield Scrub Habitat Management Pre-Restoration



Mosaic Wellfield Scrub Habitat Management Roller Chop/Mull



Mosaic Wellfield Scrub Habitat Management Prescribed Burning



Mosaic Wellfield Scrub Habitat Management Other Management Photos



October 2002



January 2003

Mosaic Wellfield Scrub Habitat Management Other Management Photos



Translocation Methodology - Based on Mumme and Below (1999)



- Move jays in February prior to breeding season
- Move non-breeders and excess helpers
- Move birds into habitat with large (>10 families) carrying capacity, and
- Remain in hacking cages for 5 days prior to release
- Added radio-transmitters on all jays

Translocation Methods: Acclimation & Trapping



Dummy Traps



Real Traps



Translocation Methods: Band, Data Collection & Transmitter



Translocation Methods: Transport, Feed & Release



Acclimate



Recapture & Final Release

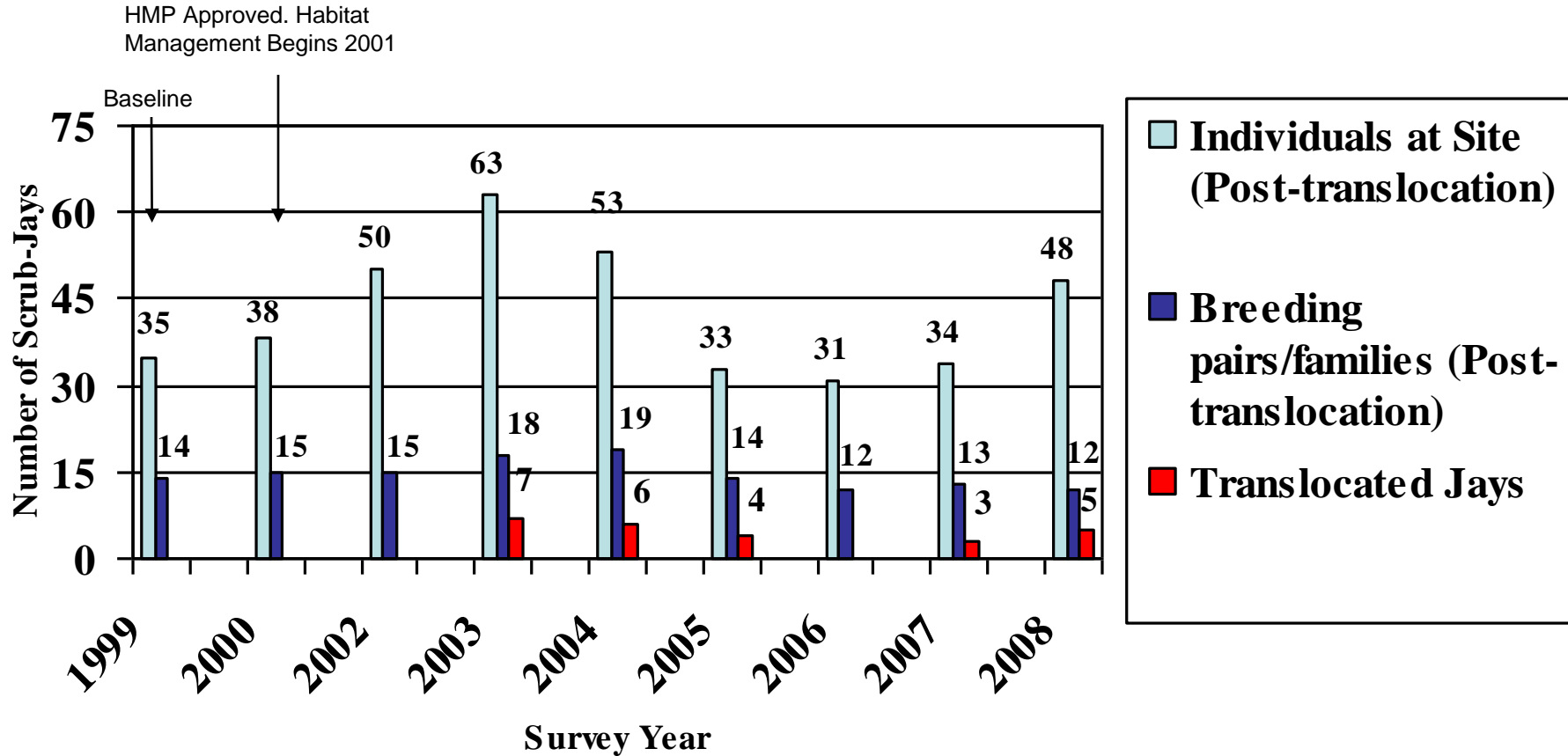


Radio Telemetry Tracking Begins



Scrub-Jay Population

Summary Totals



Total yearly number of Florida scrub-jays, breeding pairs/families, and translocated jays in July between 1999 and 2008.

Method Changes

- Timing – Despotic behavior at minimum in Dec; Feb exhibits peak in territory behavior
- Reduce hacking duration – reduce stress
- Candidate Jays – move whole family groups vs. helpers



Photo Credit: Lauren
Deaner

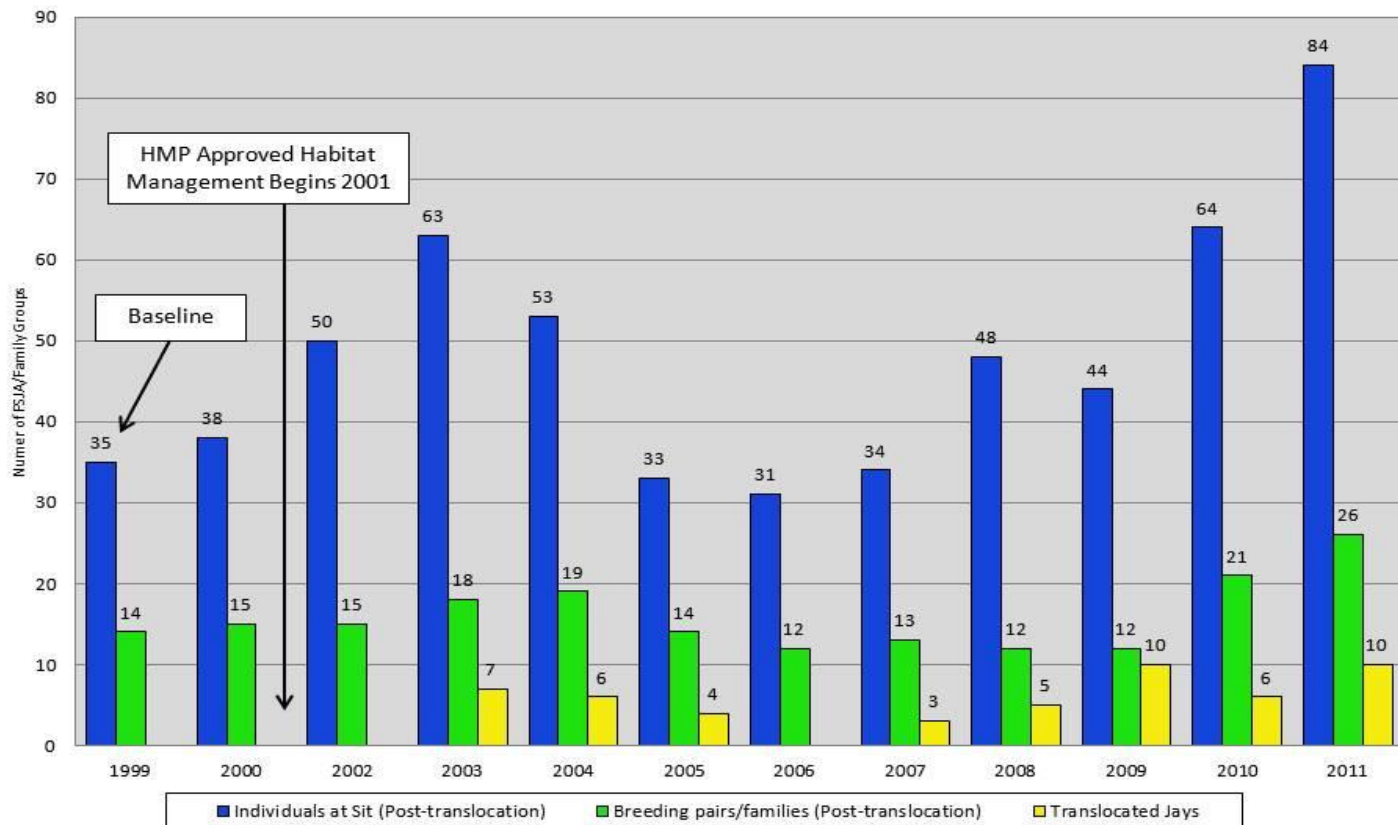
Method Changes – 2008/2009



- 2008: Moved jays in November - January instead of late February;
 - Duration of hacking periods reduced from 5 to 1-2 days
- 2009: First family group translocated; moved in December

Translocation Summary

Graph 8: Summary Totals



Territory Establishment Results

	2003	2004	2005	2007	2008	2009	2010	2011
# of Jays Translocated	7	6	4	3	5	10	6	10
No. of Jays that Est. or became part of an Est. Territory	2	3	1	1	4	7	5	9
Percentage of Jays	29%	50%	25%	33%	80%	70%	83%	90%



35%

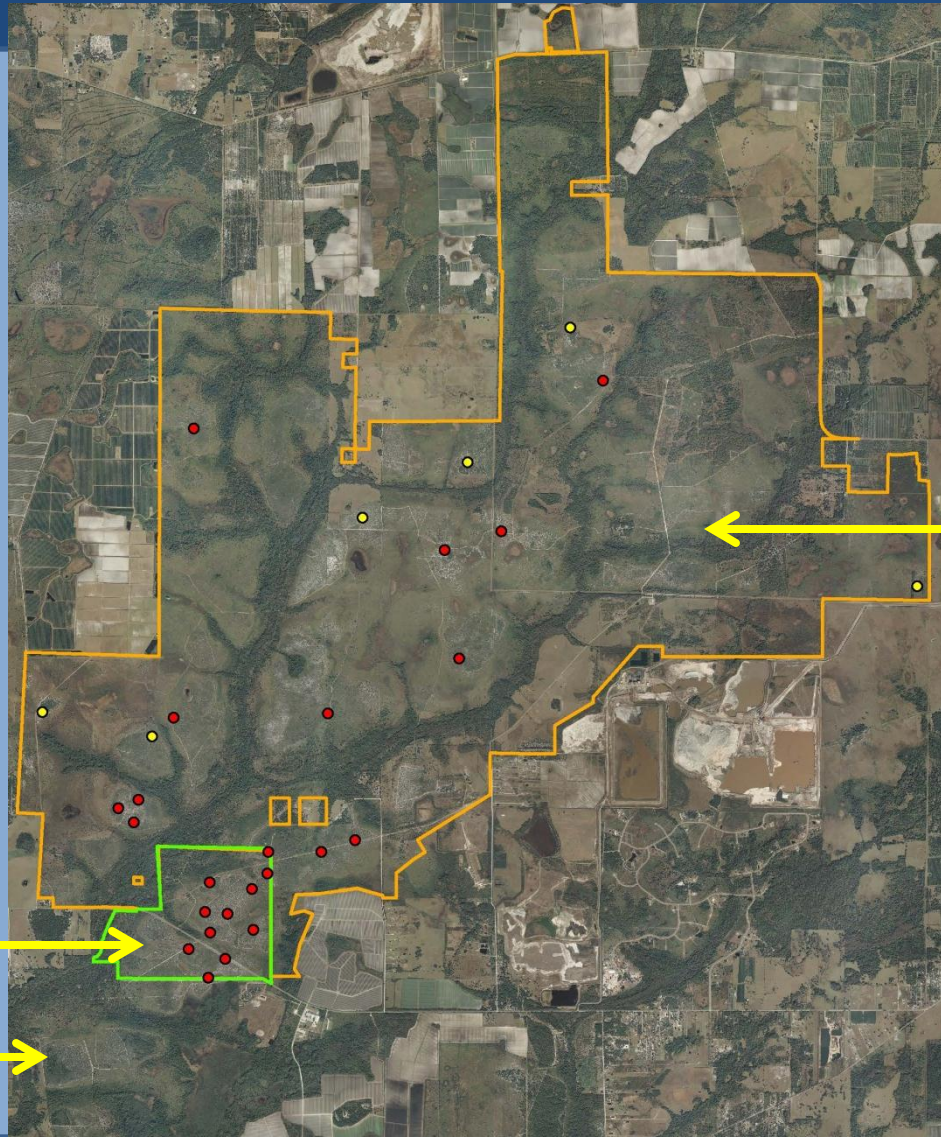
81%

Translocation Methods Modified



Recipient Site Demographics

Jay Groups
as of April
2011



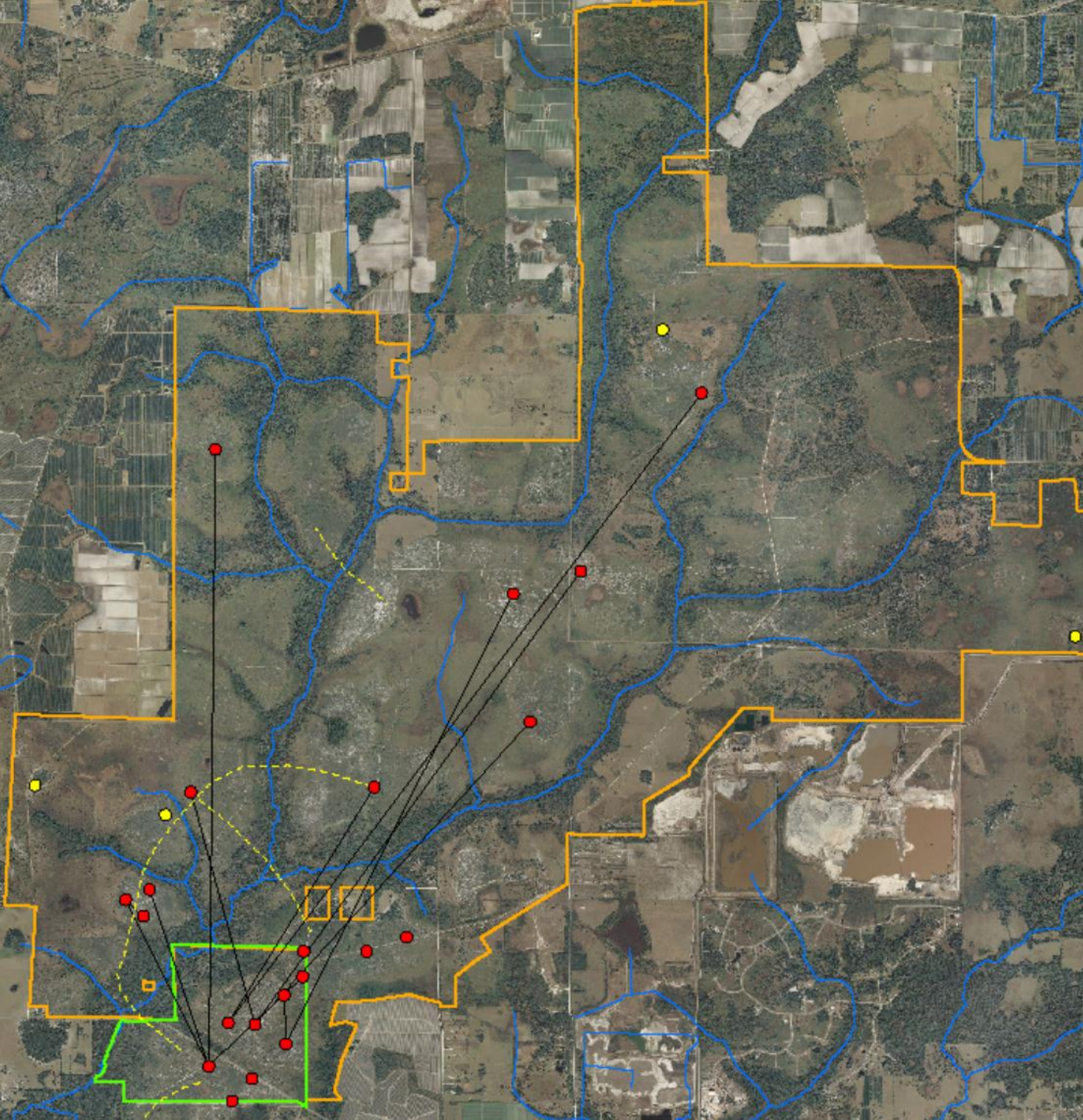
Duette
Preserve

Wellfield

SWFWMD

Natal Dispersals

March 2010 to
March 2012



What is a Successful Translocation?

- Jays that remained on the recipient site or adjacent public lands for 1 year post-release
- Jays that attempted to breed
- Jays that actively defended a territory as a helper of a breeding group



Successful Translocation Results

- 46 of 51 jays remained on MW / DP after 8 weeks post-release
- 90% success
- Average survival from 6 months to 1 year is 70%
(29 of 51 were 1st year birds)
- 23 groups attempted to breed & 14 fledged 39 young
- 81% of jays actively defended a territory as a helper of a breeding group (since methods change)



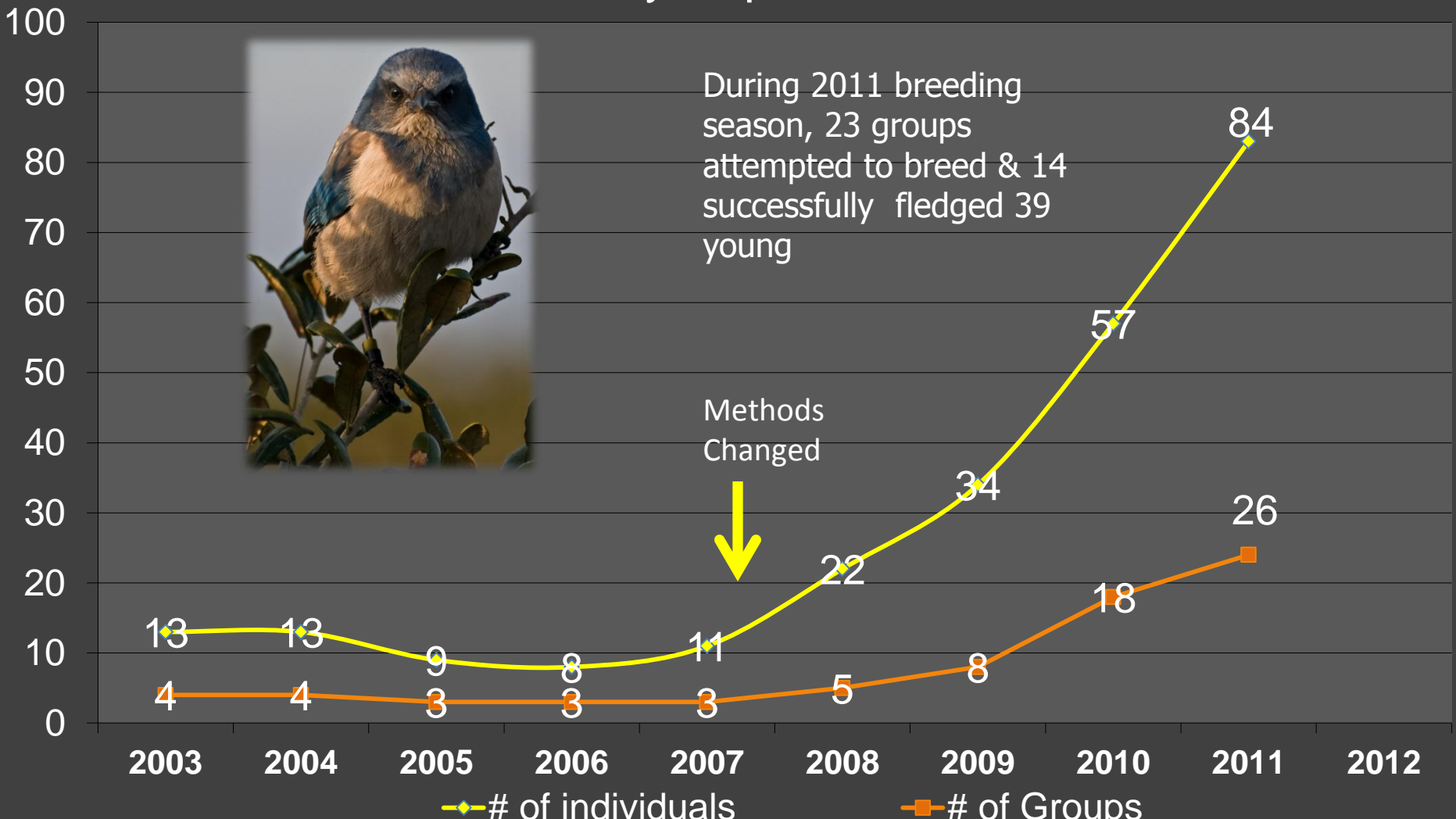
Current Distribution of Jays

July 2011

- 25 groups (82 jays) = 3.28 jays per group on Mosaic Wellfield (10 groups) and Duette Preserve (15 groups) that contain a translocated jay or descendent
- 88% breeding in 2011
- 1 additional pair (2 jays) on Manatee River State Park (no juveniles documented in 2011)
- Total Subpopulation - 26 groups (84 jays) = 3.23 jays per group

Long-Term Translocation Success : Mosaic Wellfield, SWFWMD's Coker Prairie, Little Manatee River State Park & Duette Preserve

July Population



CONCLUSIONS



- **Mosaic translocations have stabilized and grown the regional scrub jay population**
- **Increased the rate of natural immigration**

Questions?



Photo Credit: Lauren Deaner