Next Steps Towards Recovery of the Cape Sable Seaside Sparrow

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ECOSTUDIES INSTITUTE
conserving birds and their habitats through science, restoration, and outreach

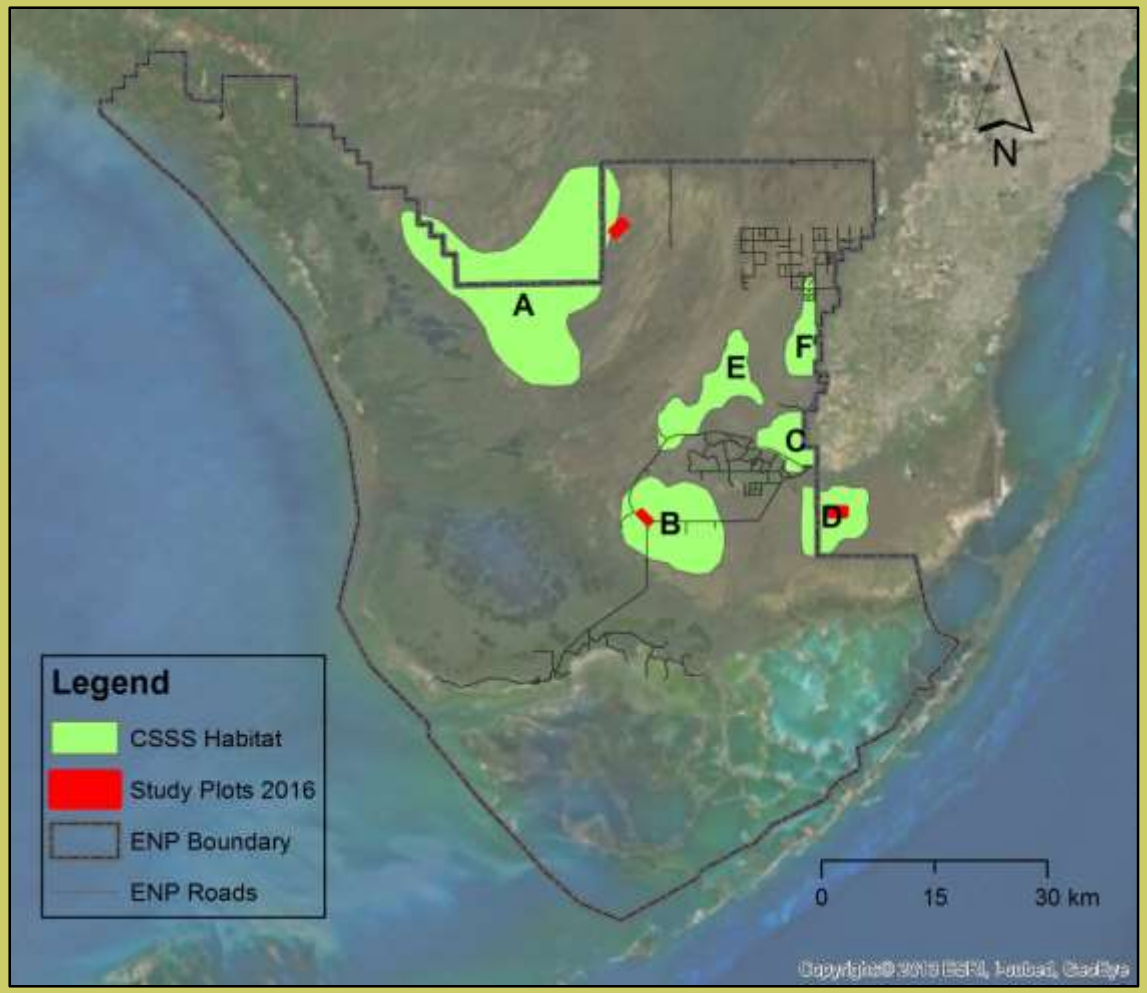
Mission - *Ecostudies Institute is dedicated to understanding and conserving native populations of birds and other wildlife and their habitats.*

- Founded in 2001
- Based in East Olympia, WA

Our core beliefs

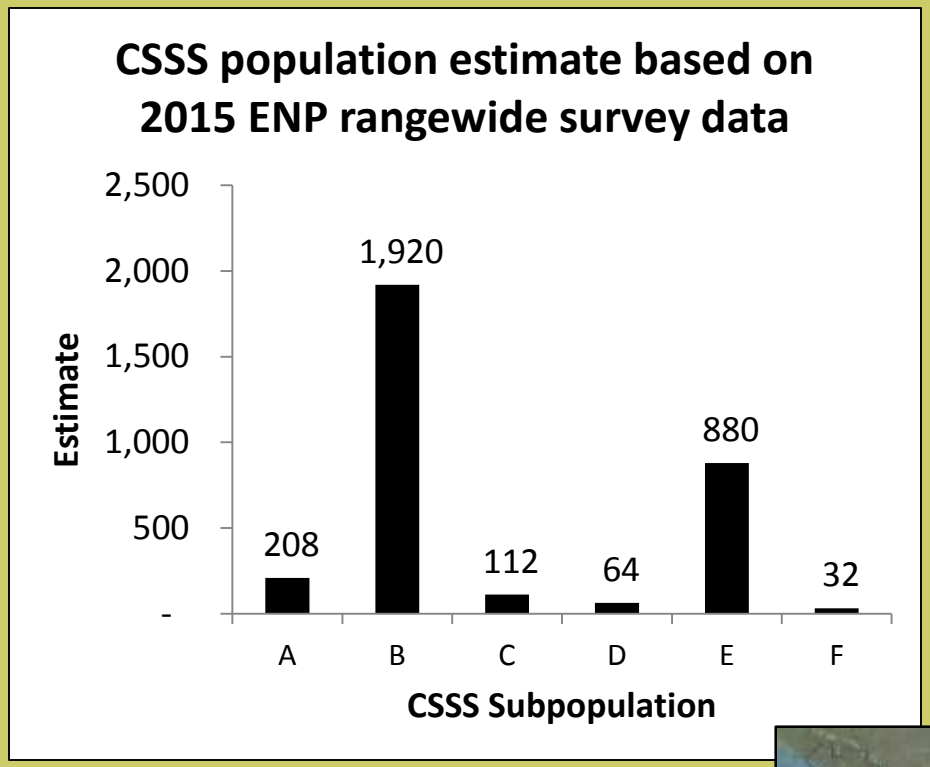
- *Biodiversity and intact habitats and ecosystems are important to the well-being of humans.*
- *Sound science should guide the conservation, management, and restoration of birds and wildlife.*
- *Disseminating results of scientific research promotes informed decision making and public involvement in conservation.*

CSSS Distribution



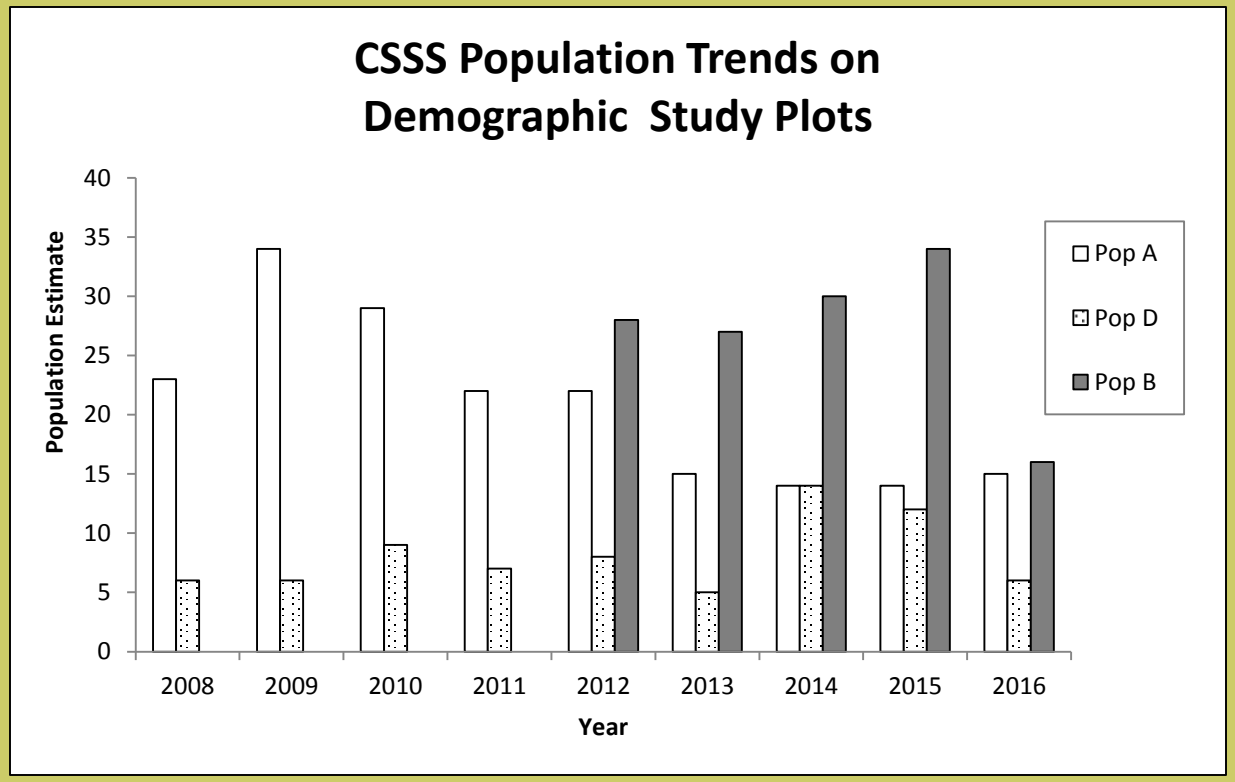
- 6 Subpopulations
  - Large: B, E
  - Small: A, C, D , F
- ENP rangewide helicopter survey
- Demographic monitoring in subpopulations A, B and D

Population Estimate



- Rangewide population estimate based on ENP survey data ~ **3,216**
- Raw count data x multiplier (16x)
- Problems with multiplier/estimate
  - No estimate of precision
  - Surveys not replicated
  - Multiplier assumptions not valid
    - Detection probability = 1.0
    - Sex ratio is 1:1 (balanced)
    - Sparrows are not detected at distances > 200 m

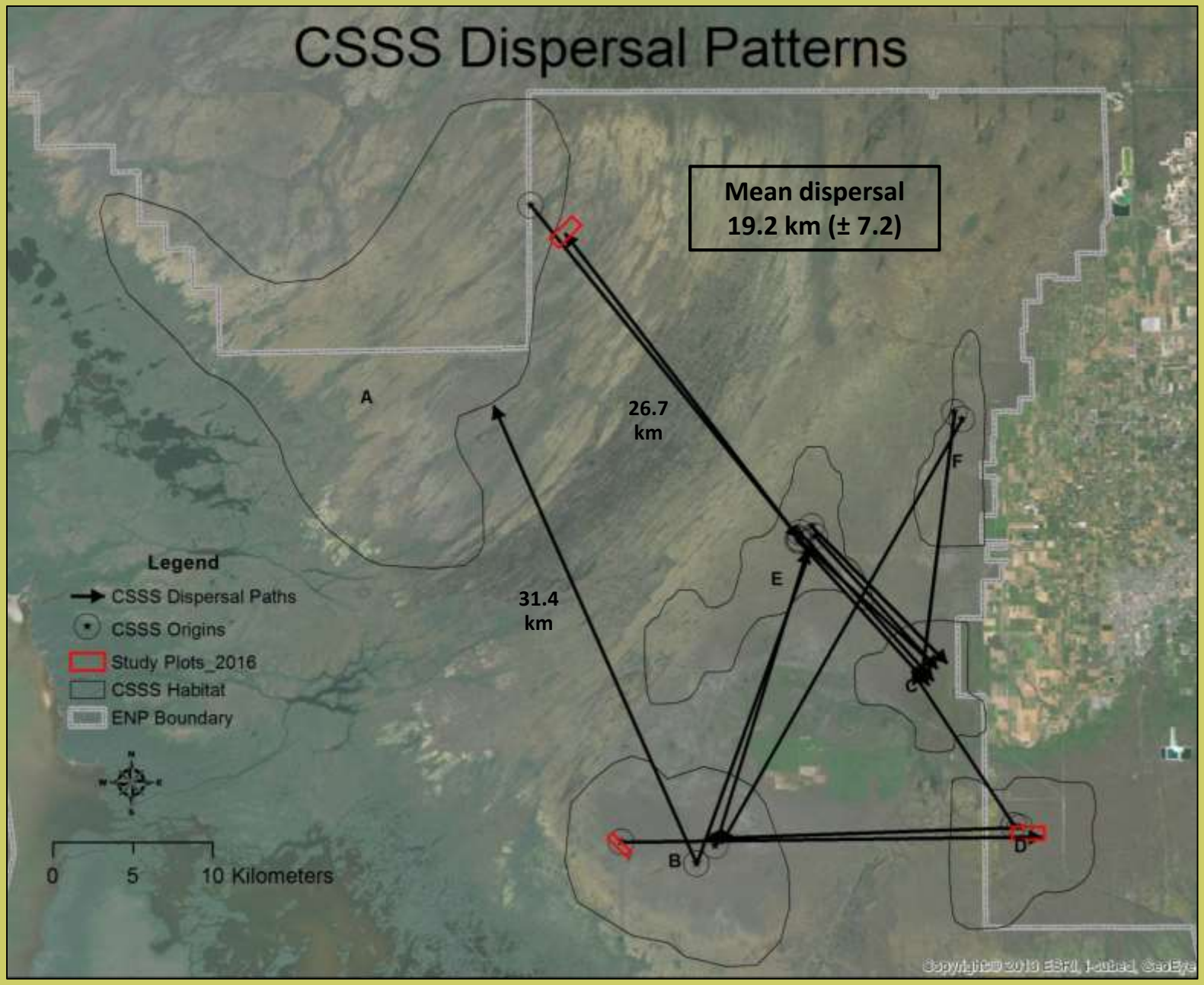
Population Trends (Demographic Study Plots)



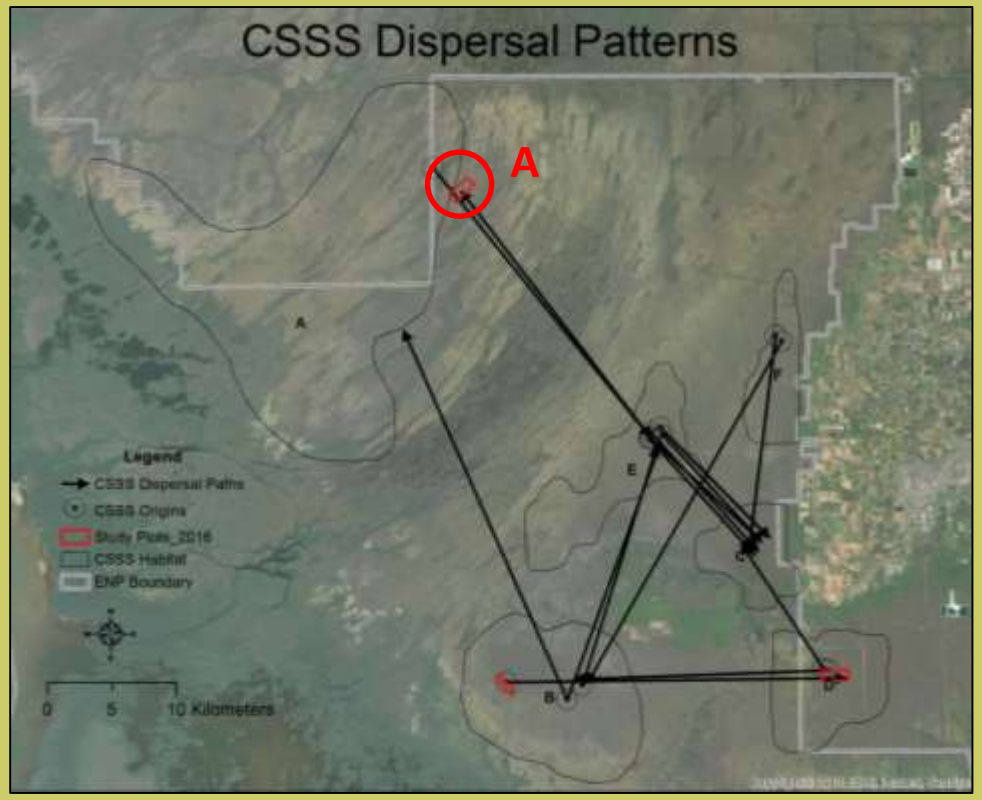
- Pop A
  - Continued decline
- Pop D
  - Stable (variable)
- Pop B
  - Increasing (until 2016)

CSSS Ecology

- Habitat Requirements
  - Marl prairies (large areas)
  - Fire history ≥ 3 years required for breeding
- Survivorship
  - CSSS survival ~ 2-3 yrs
- Reproduction
  - Mean nest height ~15 cm
  - Nesting cycle ~ 30-40 d
  - Nest success ~ 0.40
  - Multi-brooding necessary

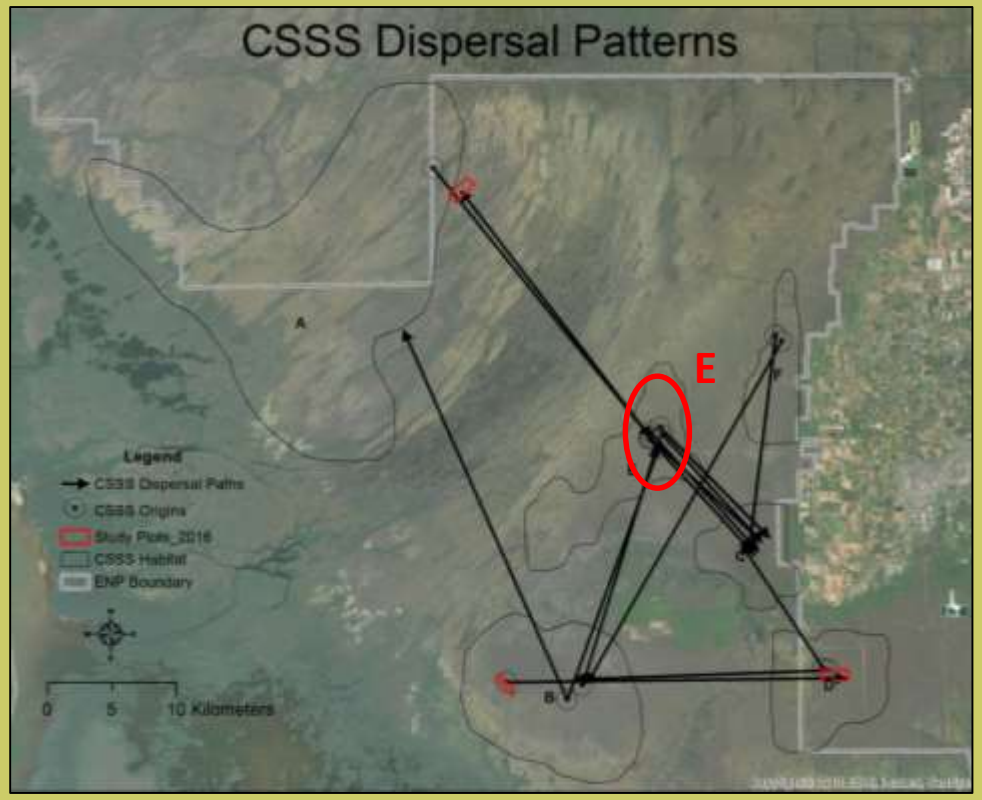

CSSS Dispersal Patterns
Mean dispersal
19.2 km (± 7.2)
26.7
km
31.4
km
A
B
C
D
E
F
Legend
CSSS Dispersal Paths
CSSS Origins
Study Plots_2016
CSSS Habitat
ENP Boundary
0
5
10 Kilometers

Subpopulation A



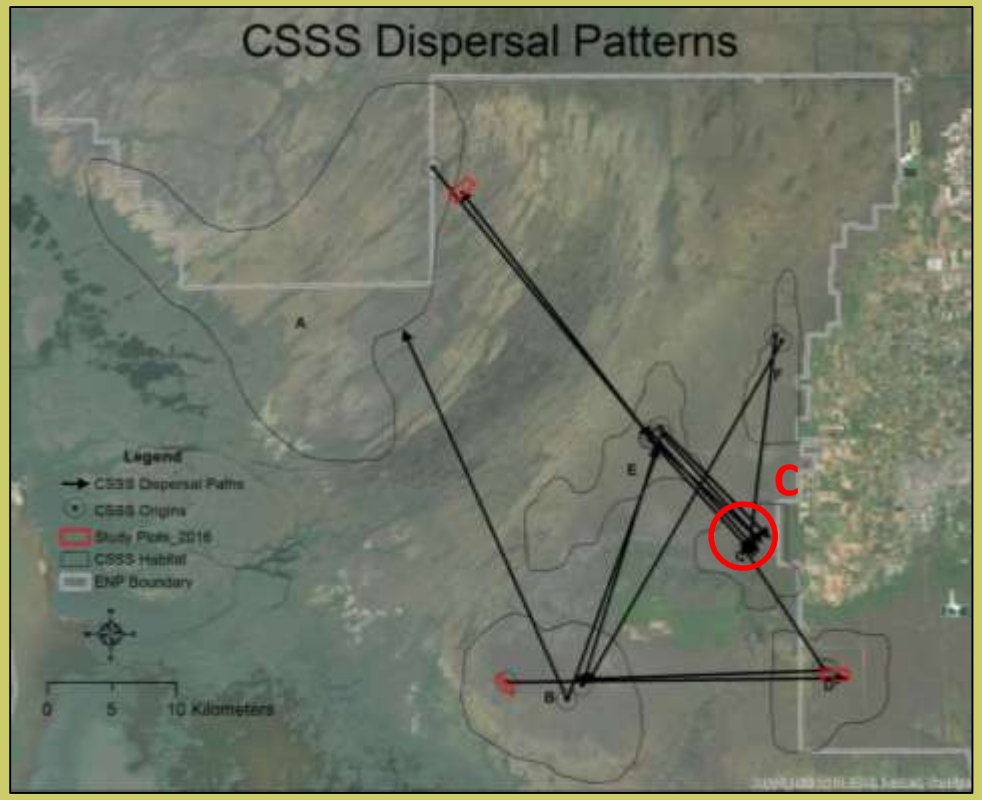
- Reduces stochastic risk for entire CSSS population
- Sole remaining breeding population in Pop A?
- Dispersal rates too low to support recovery
- Translocation likely necessary to aid recovery

Subpopulation E



- Second ‘core’ subpopulation
- Spreads out stochastic risk in eastern Everglades
- Pop E likely most important source of recruits to A and other small subpopulations
- Loss of critical habitat in Pop E could rapidly affect other subpopulations

Subpopulation C



- Crossroad for dispersal among subpopulations
- Opportunity for 3rd viable subpopulation in the eastern Everglades
- Closest suitable habitat for shift of Pop E in response to potential habitat loss

Next Steps

- Population estimation
  - Improve current estimate
  - Subpopulation level
- Demographic modeling
  - Meta-analysis of existing long-term demographic data
  - Relate demographic data to habitat modeling results
- Demographic monitoring
  - Continue in subpopulations A and B
  - Add subpopulations C and E
- Translocation
  - Subpopulation A

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  - Everglades National Park
  - South Florida Water Management District