

Using camera trap data on Florida Panthers within a mark-recapture framework: current work within the Addlands of BCNP



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Why use camera traps?

- “Non-invasive” monitoring
- 24hr/day sentinel in panther habitat
- Collect demographic and behavior data
- Document disease
- Presence/Absence
- Information on multiple species



Camera Traps for Population Estimates

- ID individuals for Mark-Recapture (MR) analyses
- Individual ID of uncollared panthers not definitive
- Marking (radiocollaring) panthers required

2009-02-28 06:00:21 M 1/5 61°F



PISTOL POND

WWW.RECONYX.COM

2009-01-16 06:41:43 M 2/5 55°F

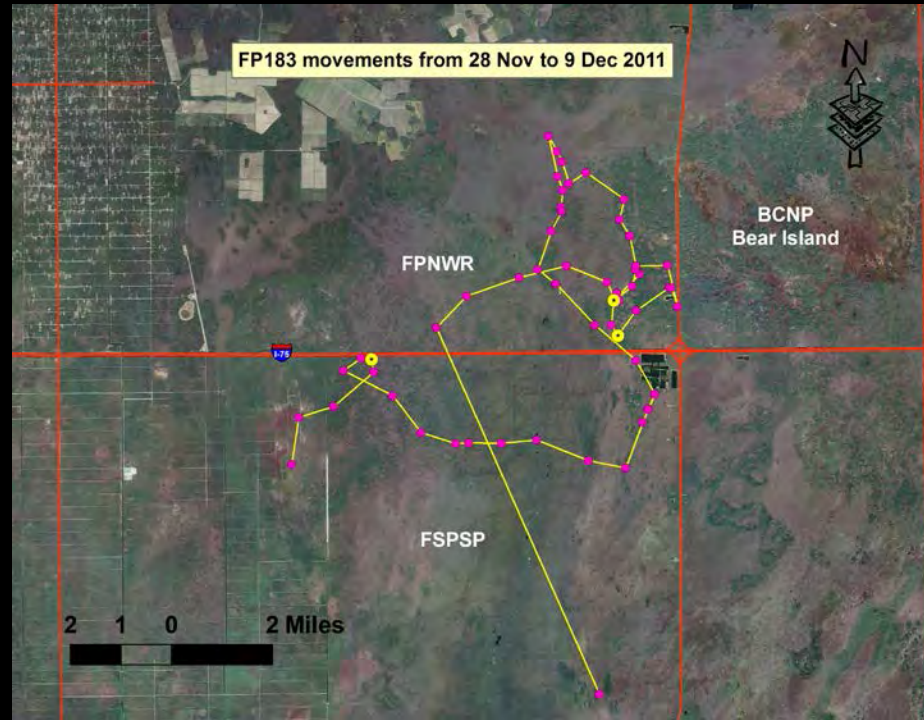


PISTOL POND

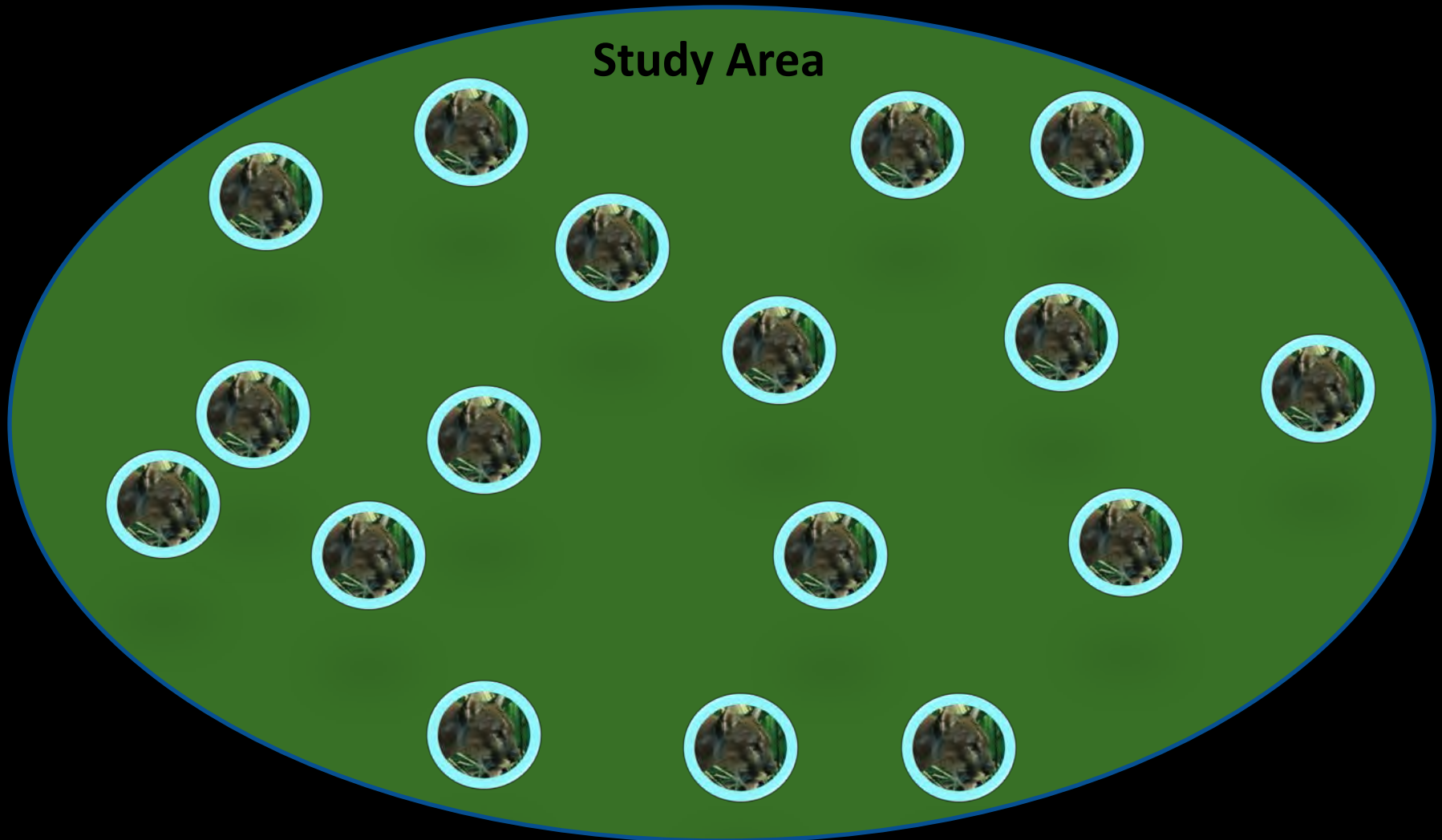
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Spatial Mark-Resight (SMR)

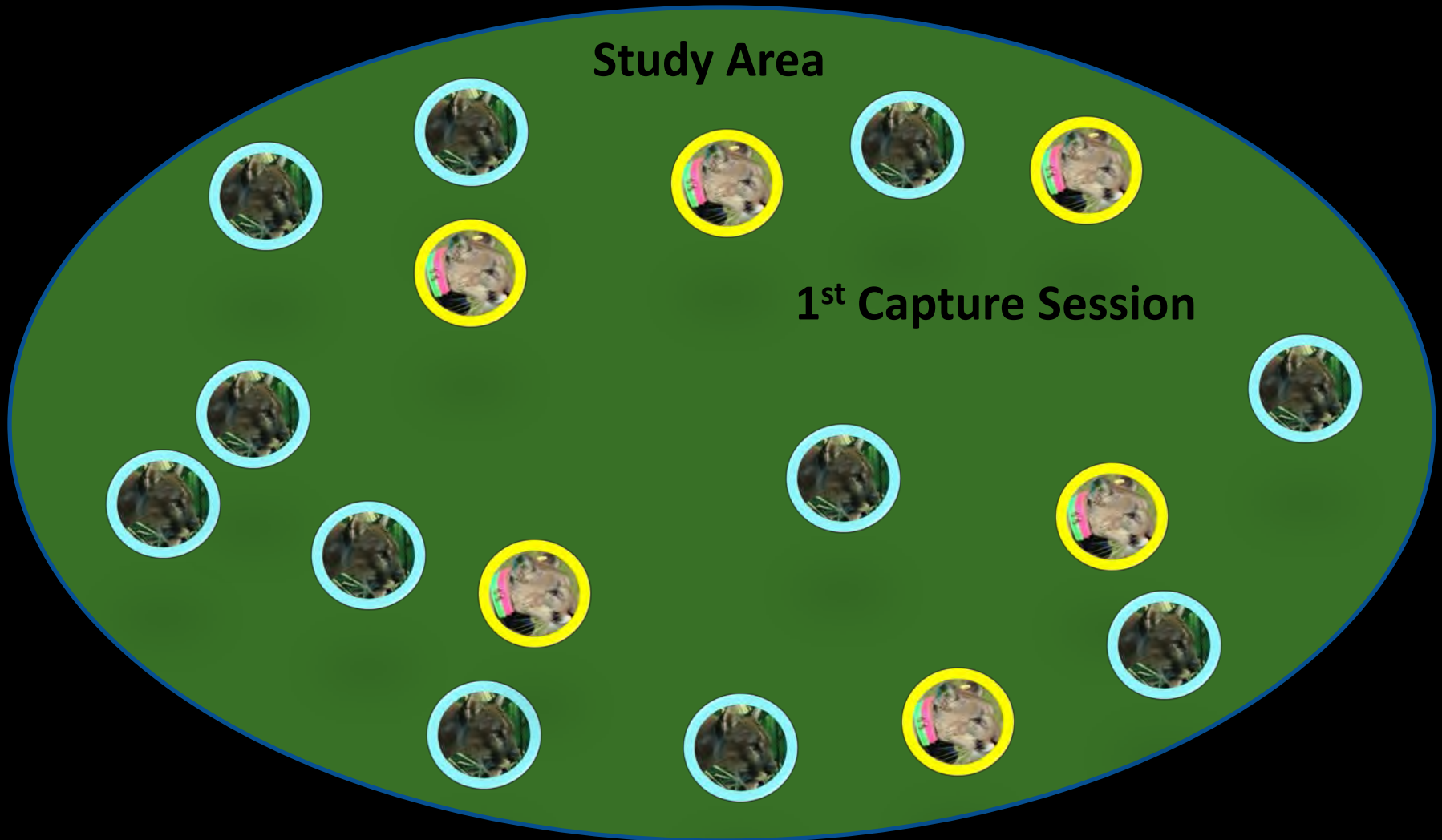
- Part of the population is marked
- Similar to MR framework....but,
- Incorporates spatial (telemetry) data from marked animals
- Spatial organization of camera grid deployed



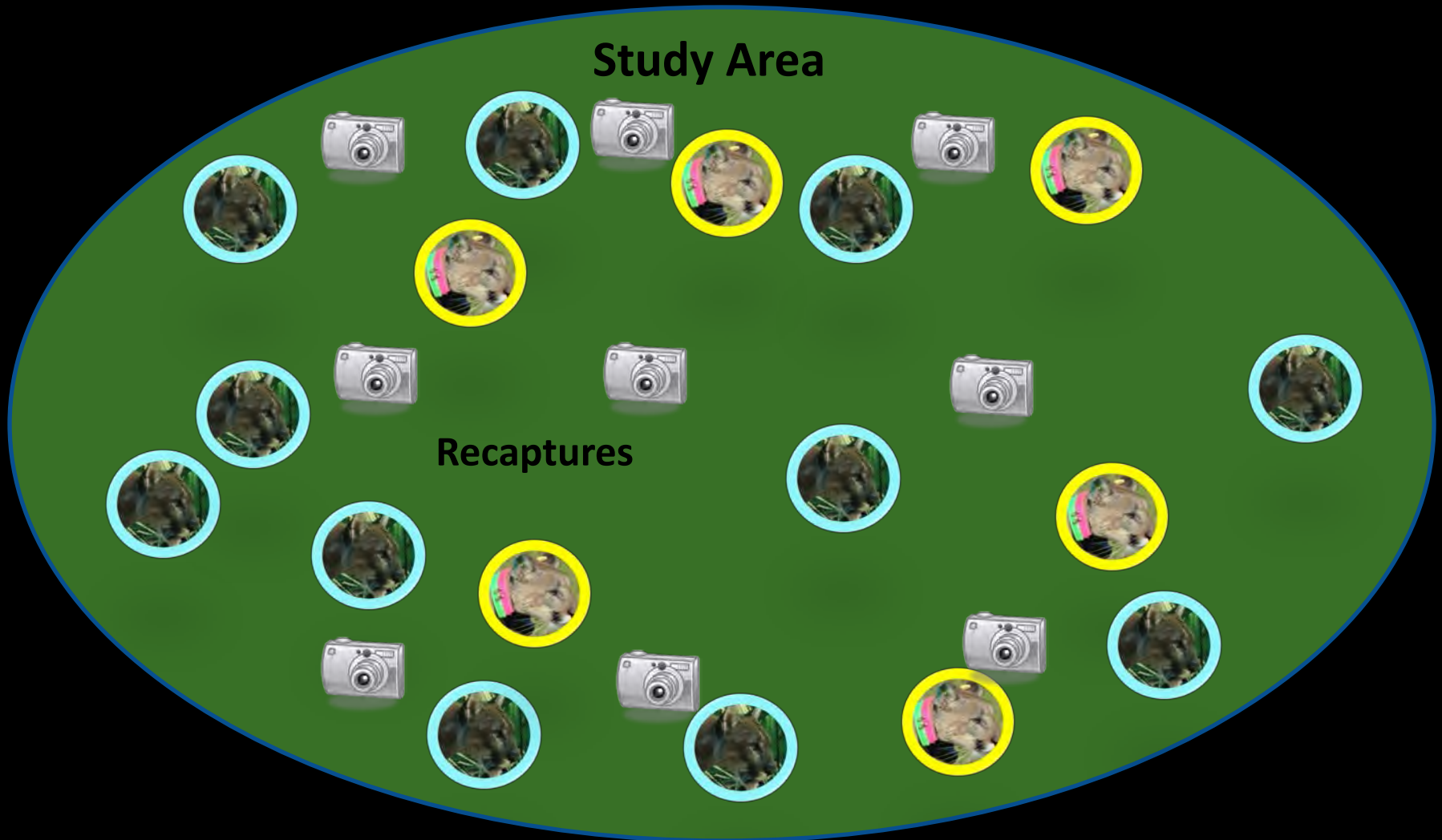
Spatial Mark-Resight Framework



Spatial Mark-Resight Framework



Spatial Mark-Resight Framework



Spatial Mark-Resight (SMR)

- Phase I: Marking and camera deployment
 - Radiocollaring of panthers





Phase II: Resight

2014-04-30 6:18:34 AM M 3/5

○ 20°C



FWC21-4515



Spatial Mark-Resight (SMR)

Phase II: Resight Phase

Collared panthers

- Photo counts of marked panthers
- Information on detection probability
- Movement patterns across grid



Uncollared panthers

- Photo counts of uncollared photos
- Assumed to move across SA as marked panthers do

SMR Study Design

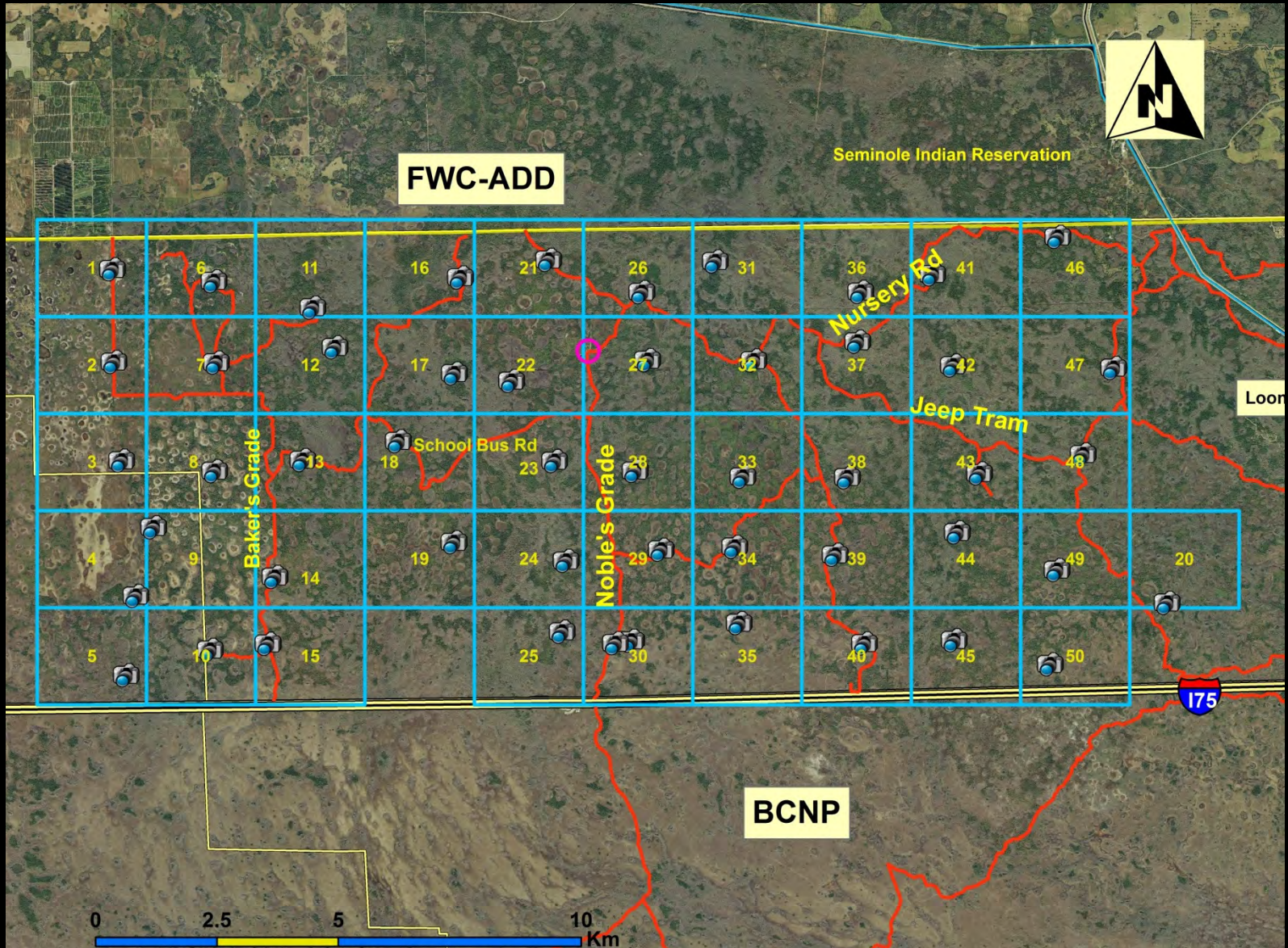
- Radiocollar 4-5 panthers in study area (SA)
- 50 cell grid on SA
 - 2.25km x 2km (1.4 mi x 1.2 mi)
- 50 trail cameras across the 162km² (63mi²)SA
- Run cameras continuously for 4-5 months
- Collect concurrent telemetry data
- Review photos
- Implement SMR model
- Density estimate for SA with coefficient of variance



SMR Study Area



SMR Study Area



SMR Current Stage

- Cameras deployed April 2014
- Cameras checked monthly
- Cameras removed September 2014
- Collected >100,000 photos
- Additional SA (FPNRW and Bear Island)
- Photo Review and organization.
- Implement at additional sites; derive range-wide estimate
- Data on other species (e.g., deer)



Acknowledgements

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