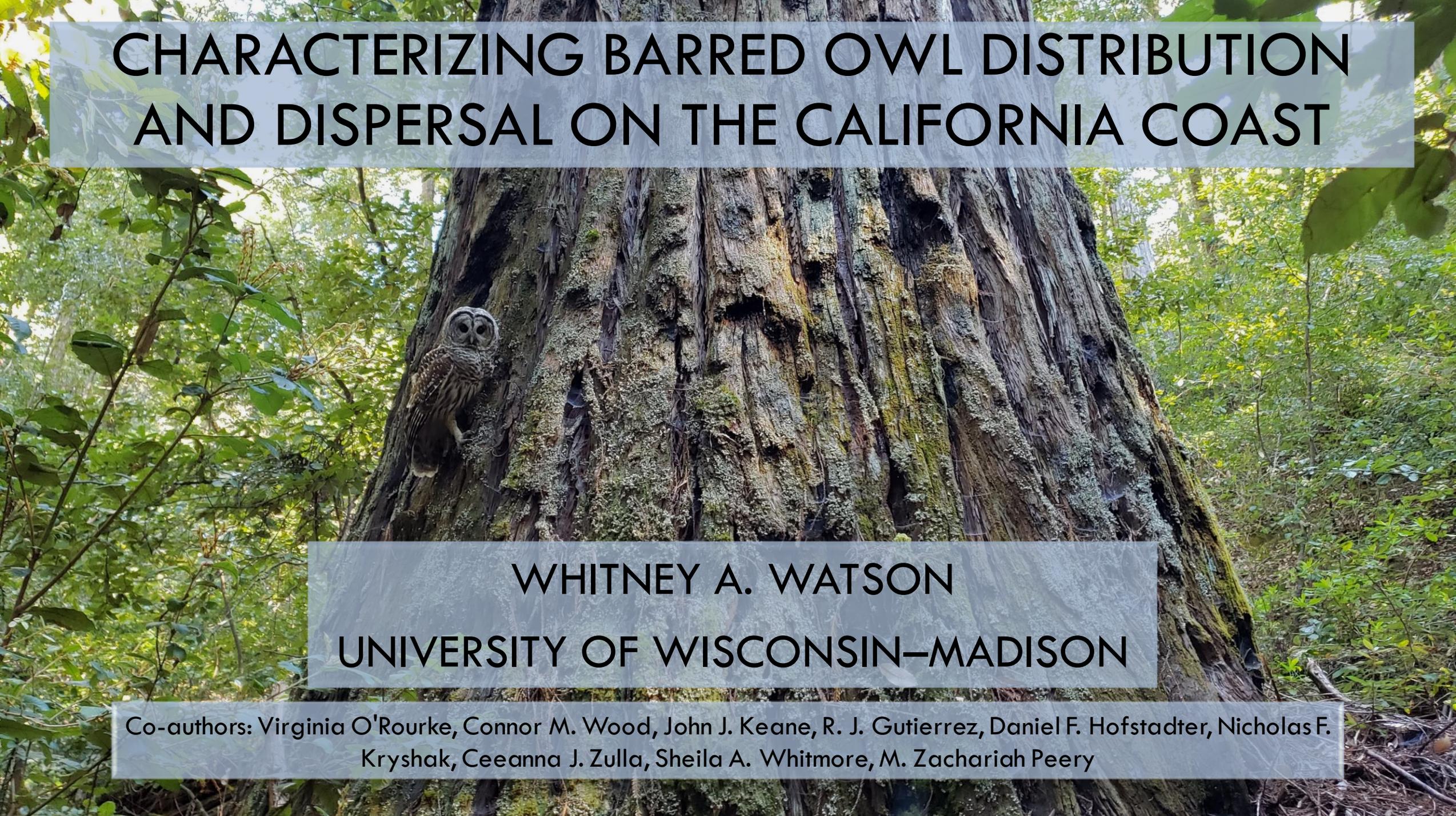


CHARACTERIZING BARRED OWL DISTRIBUTION AND DISPERSAL ON THE CALIFORNIA COAST

A photograph of a barred owl perched on a large, moss-covered tree trunk in a forest. The owl is positioned on the left side of the frame, looking towards the camera. The tree trunk is thick and textured, with patches of green moss. The background is a dense forest with green foliage.

WHITNEY A. WATSON
UNIVERSITY OF WISCONSIN—MADISON

Co-authors: Virginia O'Rourke, Connor M. Wood, John J. Keane, R. J. Gutierrez, Daniel F. Hofstadter, Nicholas F. Kryshak, Ceeanna J. Zulla, Sheila A. Whitmore, M. Zachariah Peery

RESEARCH NEED

- Barred owls impacting spotted owl, western forest ecosystems
- Barred owl natal dispersal identified as high-priority research need
- Management practices: establishing refugia; lethal removal

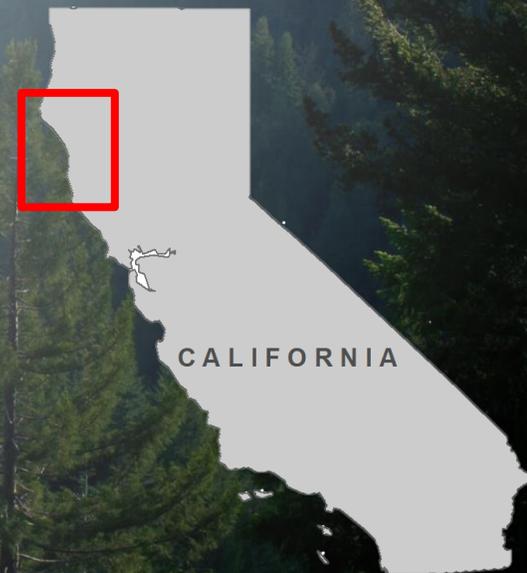
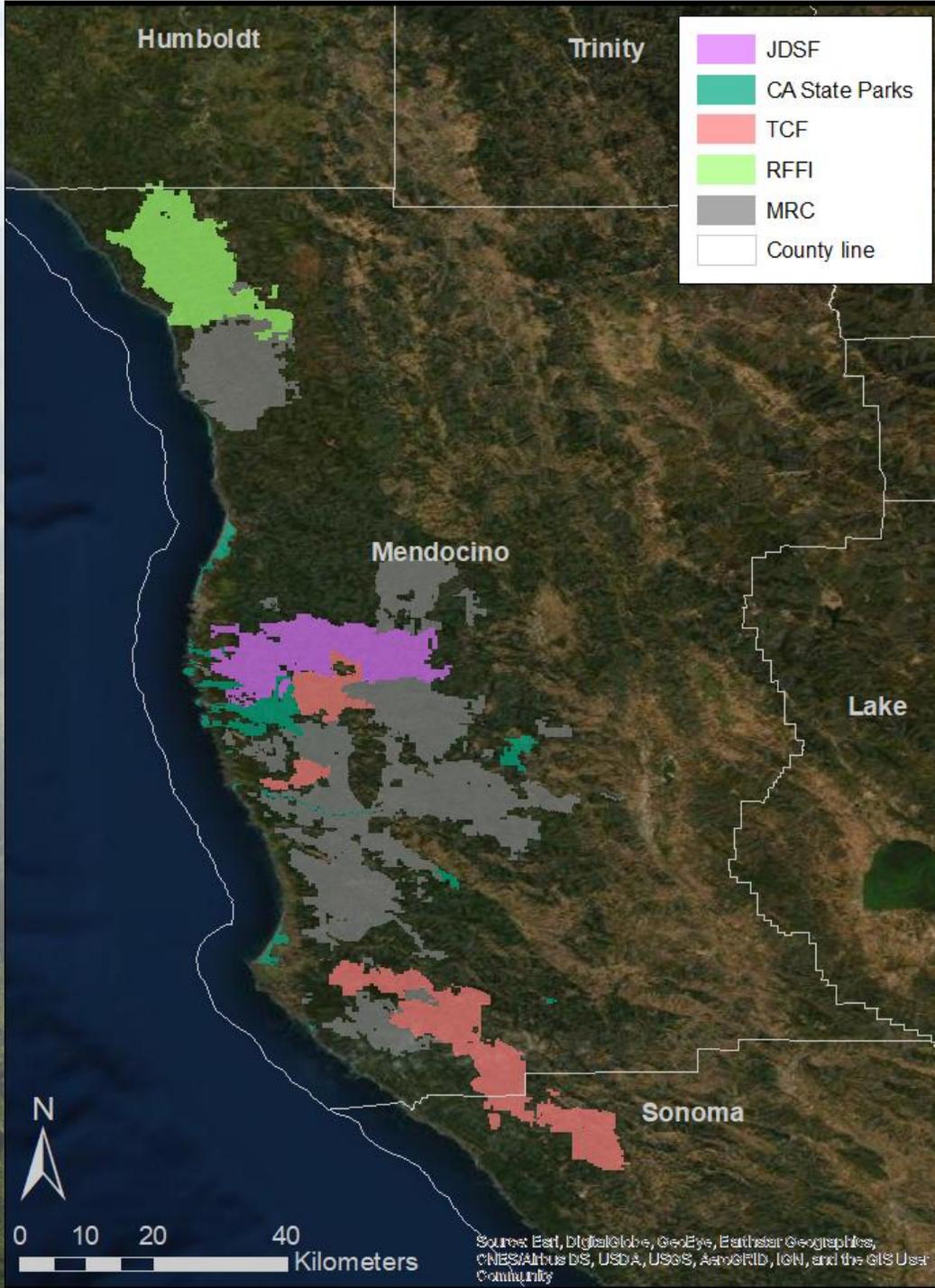


GOALS



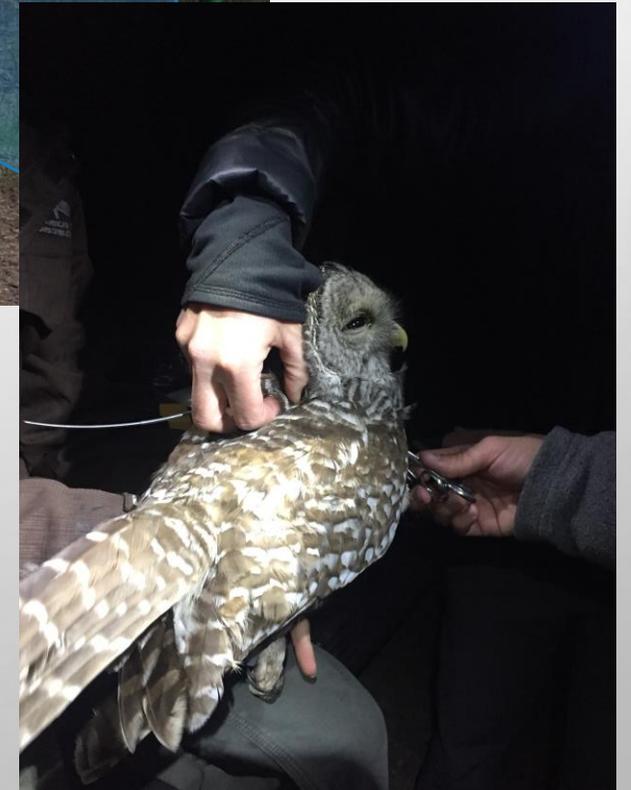
- Characterize juvenile barred owl dispersal patterns in terms of:
 - Timing and distance
 - Habitat use (including dispersal corridors and barriers)
 - Survival rate and mortality factors
- Collect data on adult barred owl territories and movements
- Use acoustics to assess occupancy and detectability of barred owls (in progress)

STUDY AREA



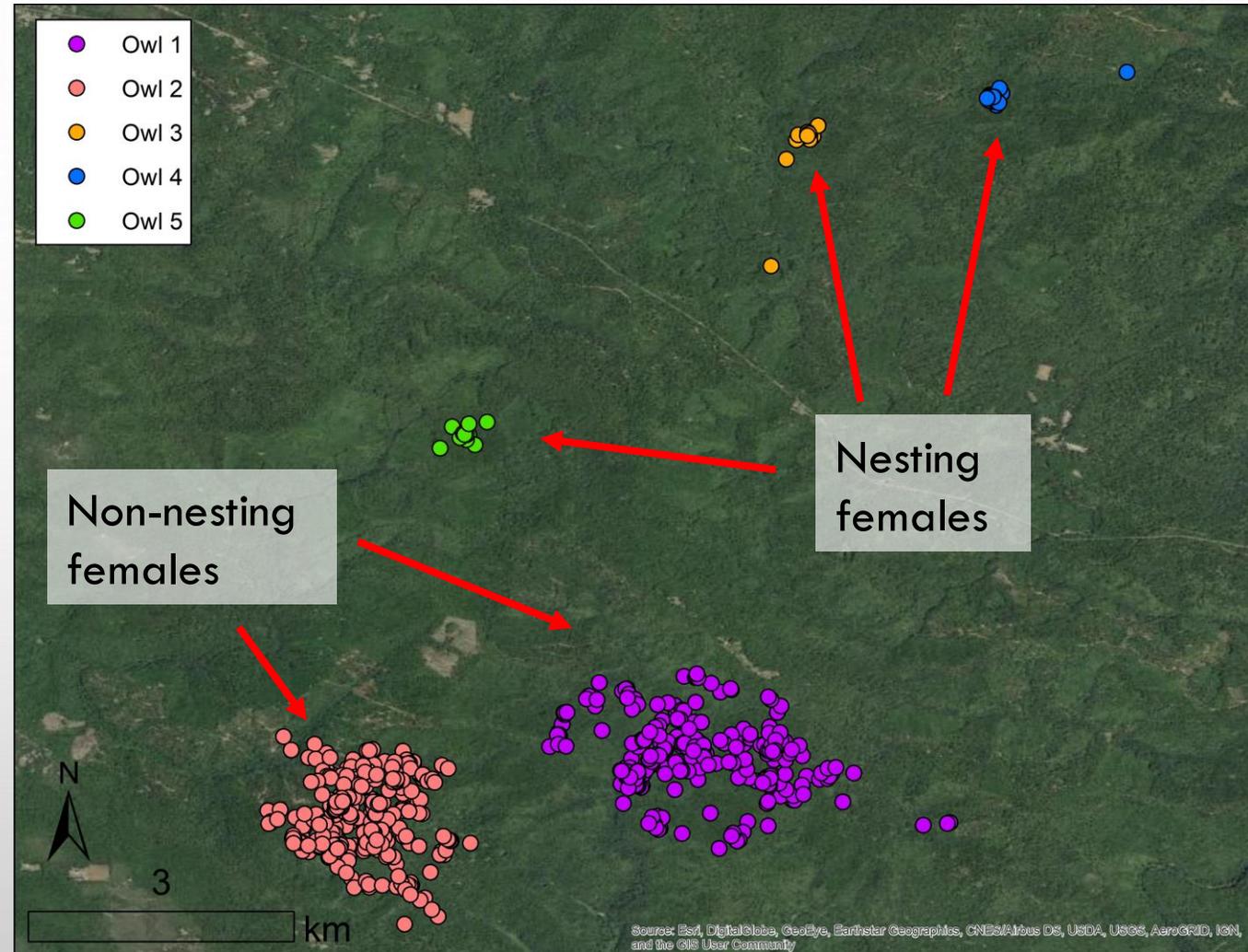
METHODS

- **March:** Capture & tag adult barred owls
- **April:** Track tagged barred owls, assess reproductive status
- **May-June:** Monitor barred owl nests & fledglings
- **July-August:** Capture & tag juvenile barred owls



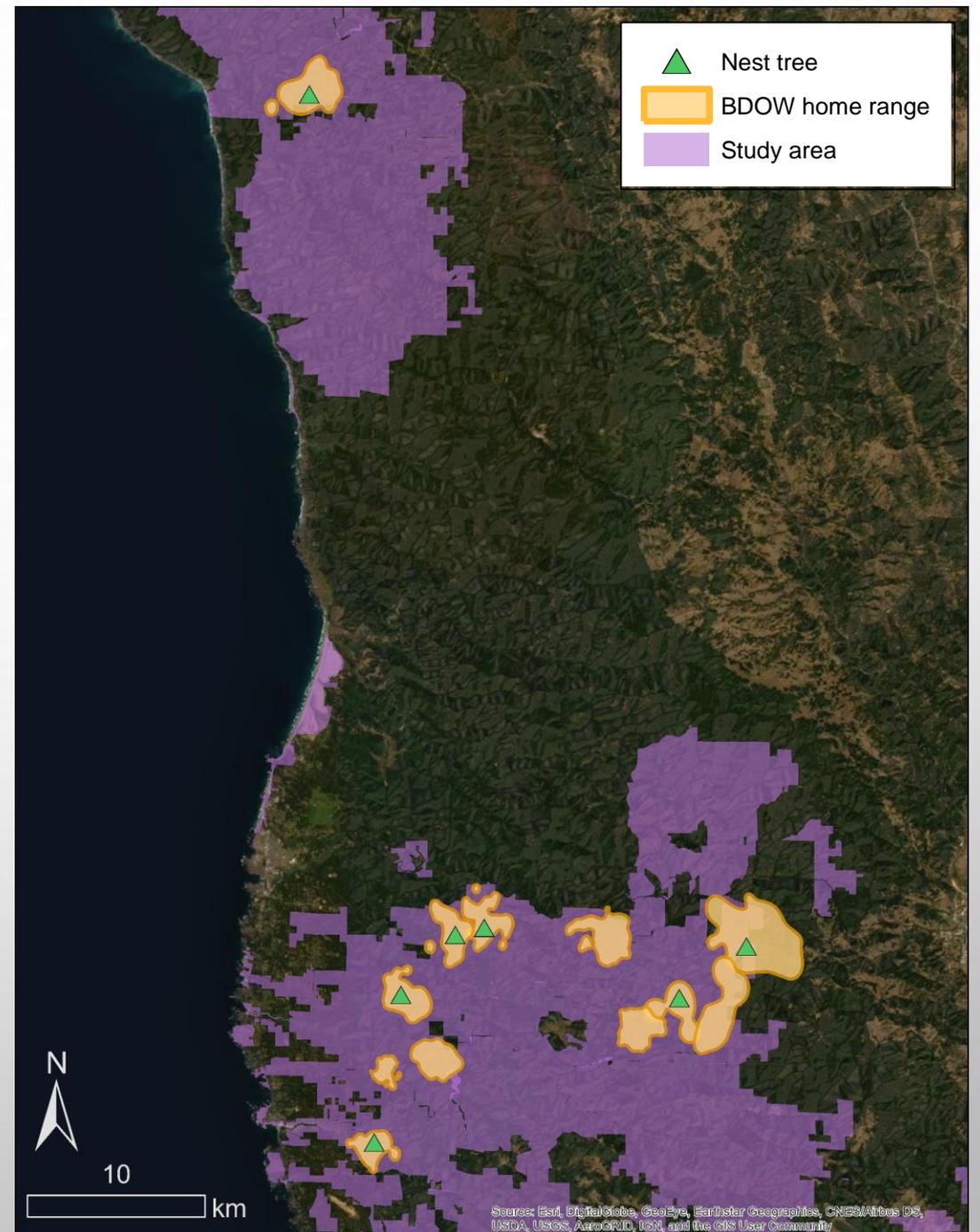
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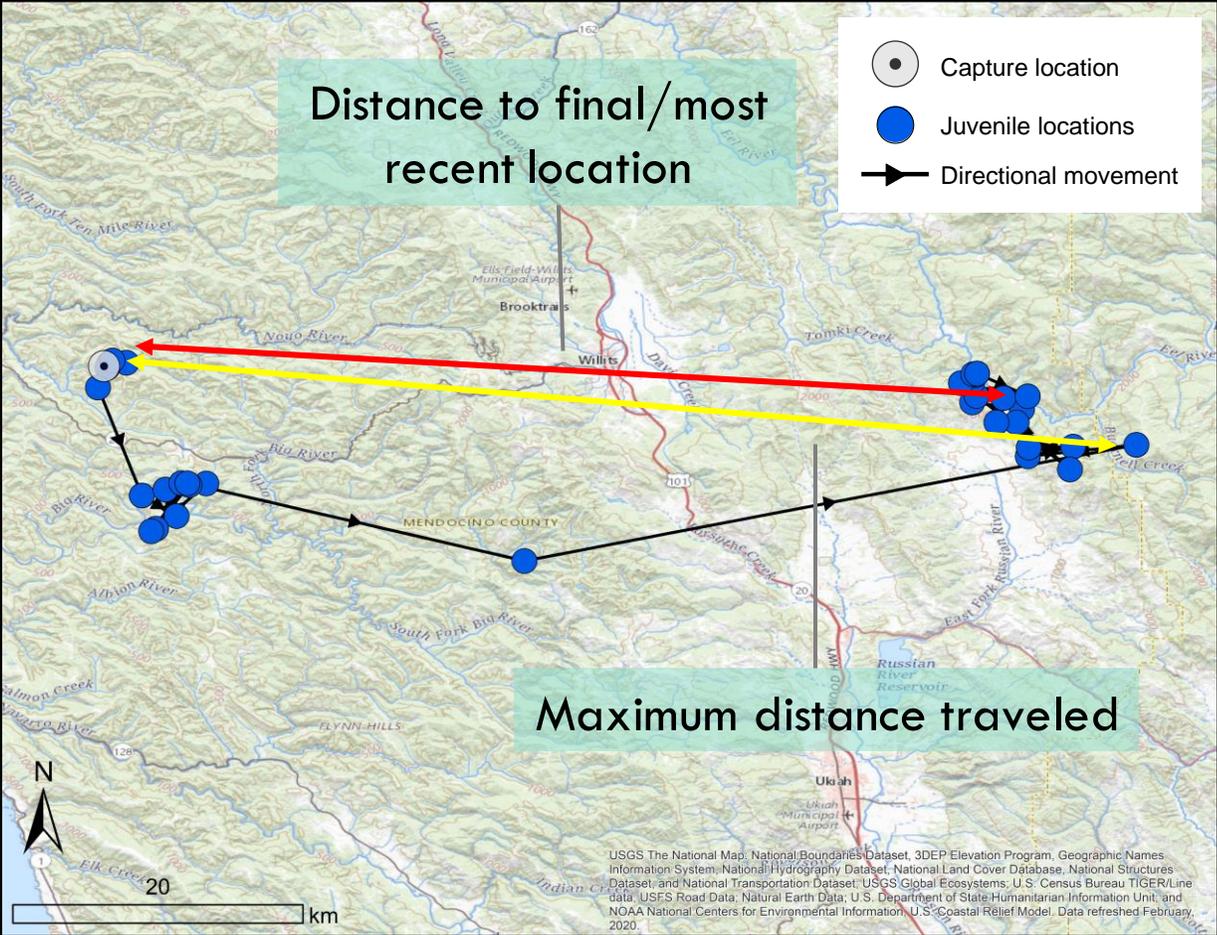
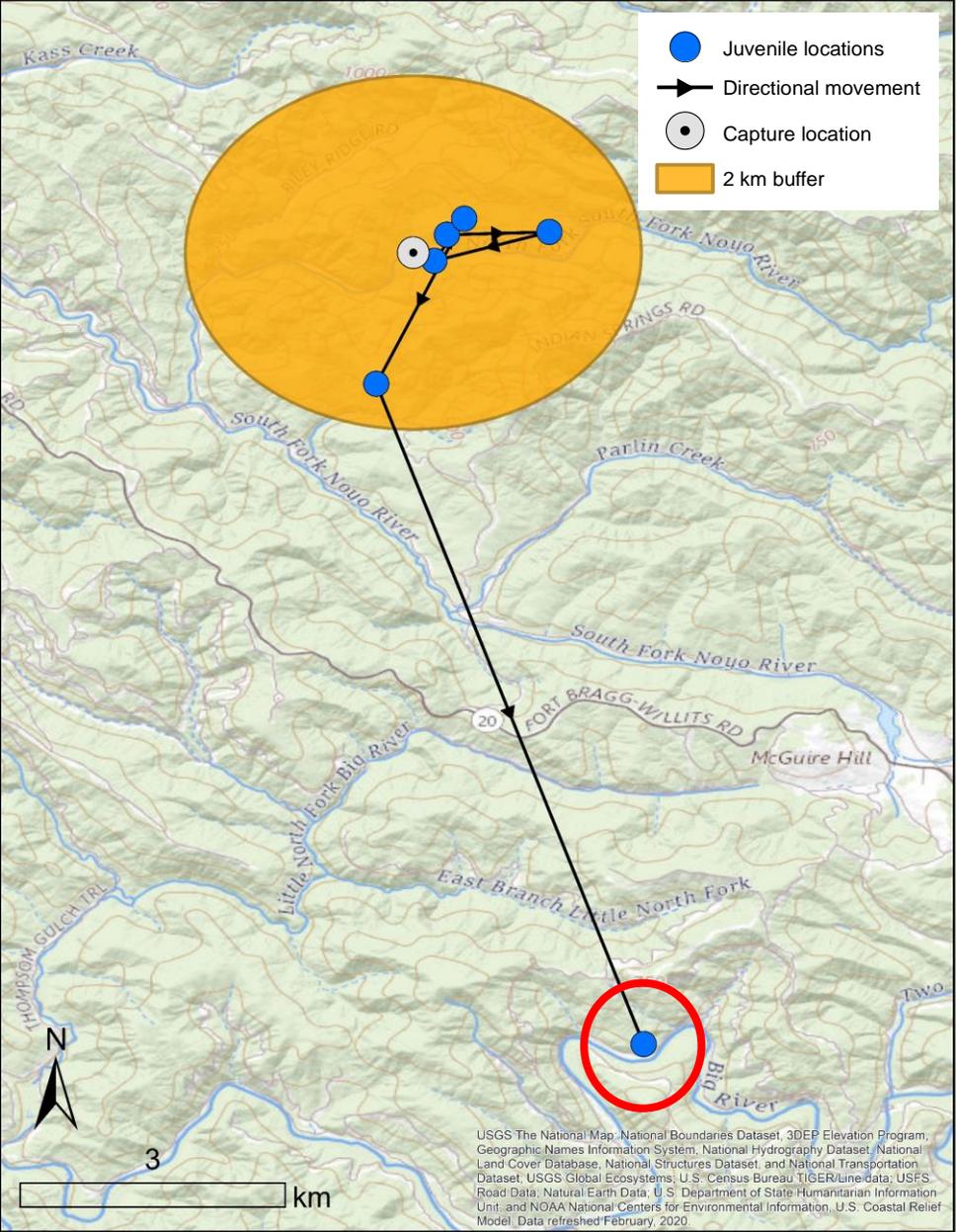


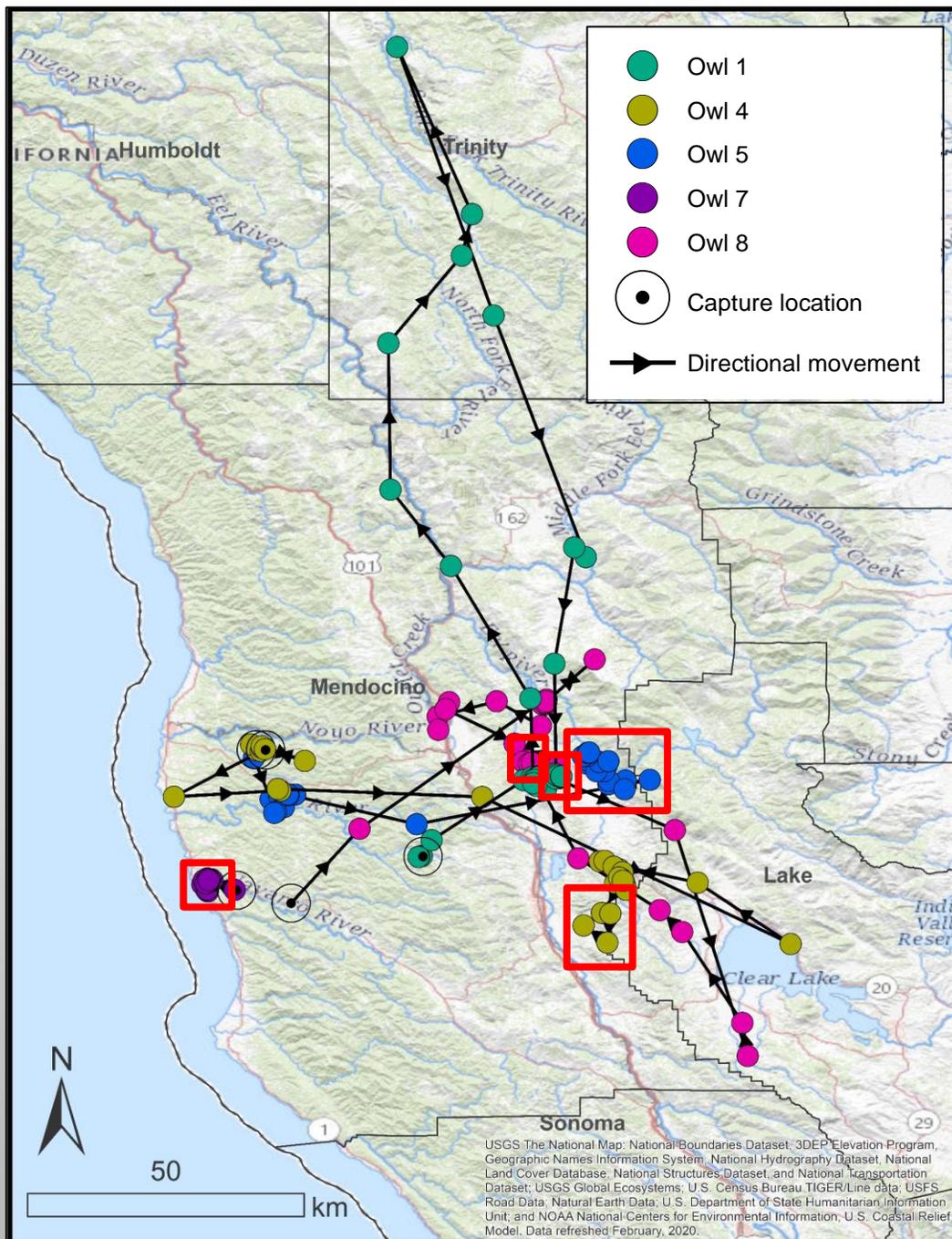
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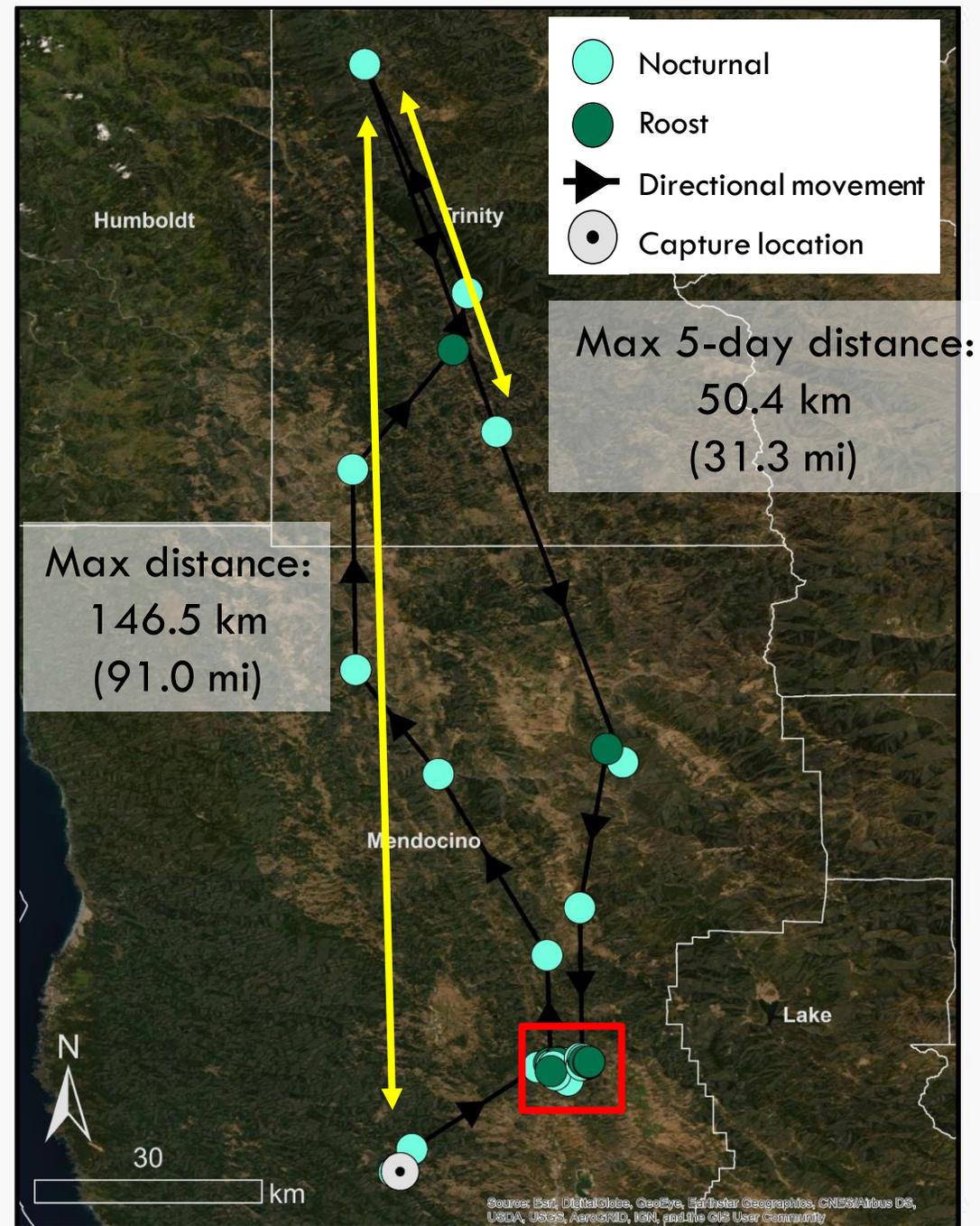
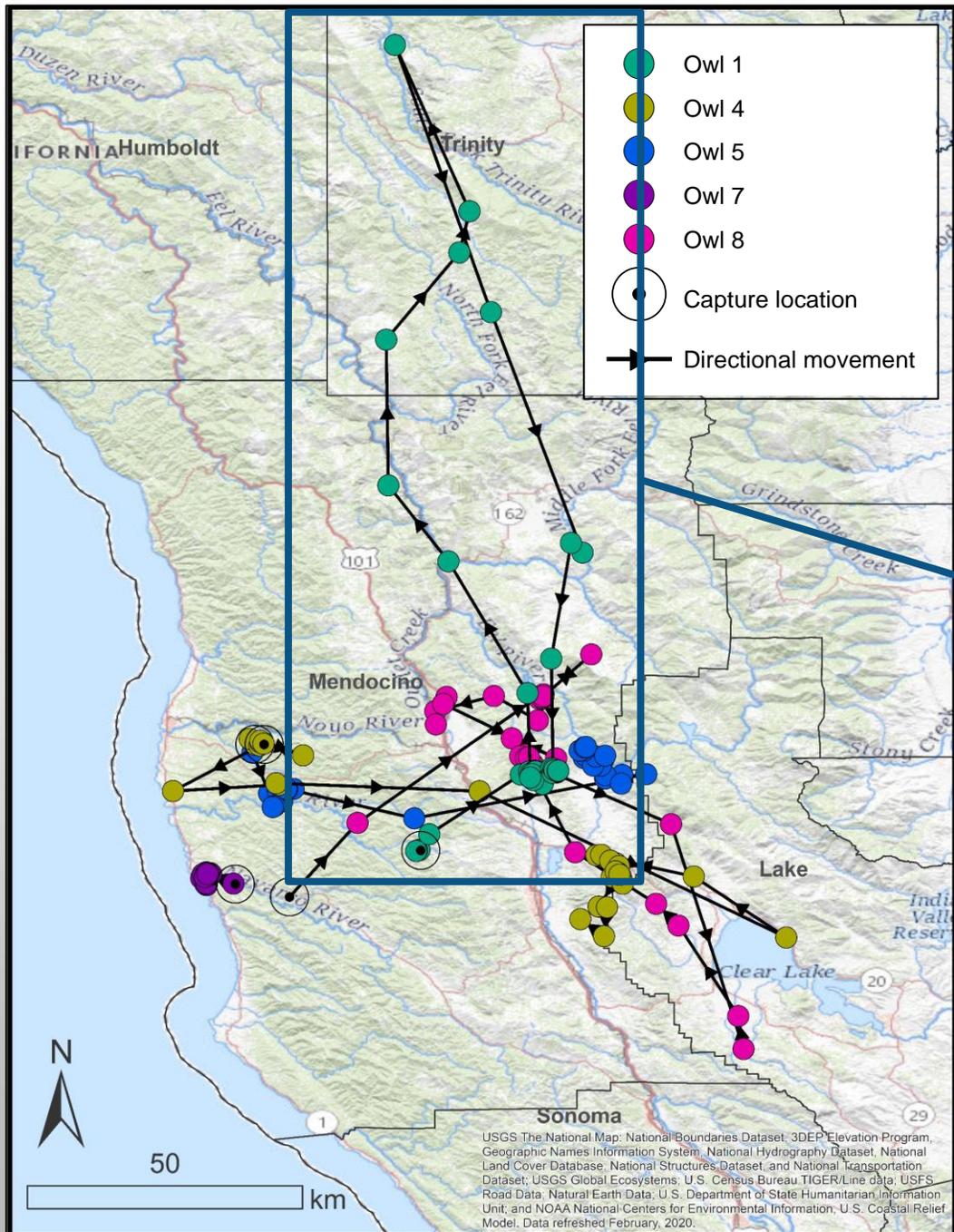
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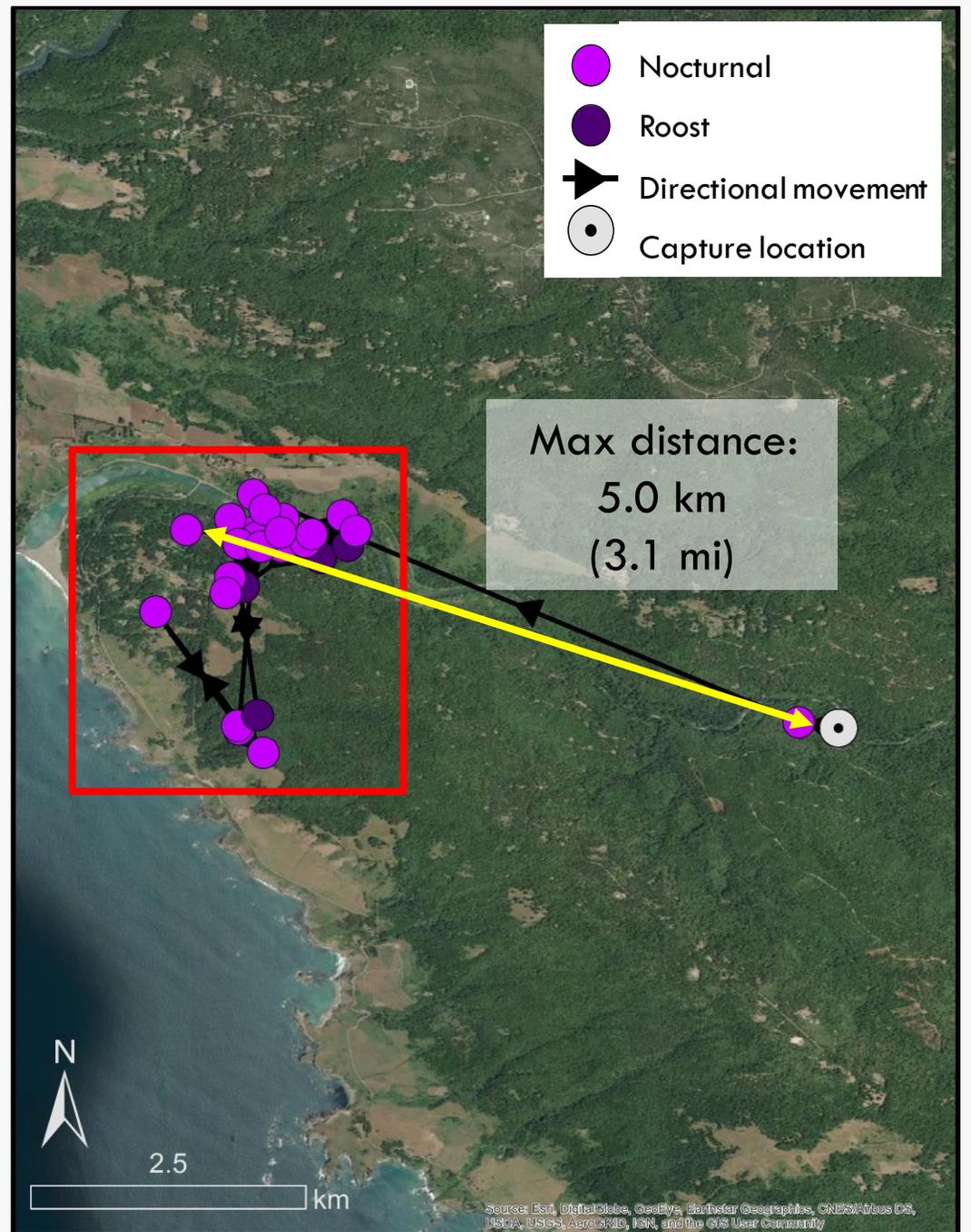
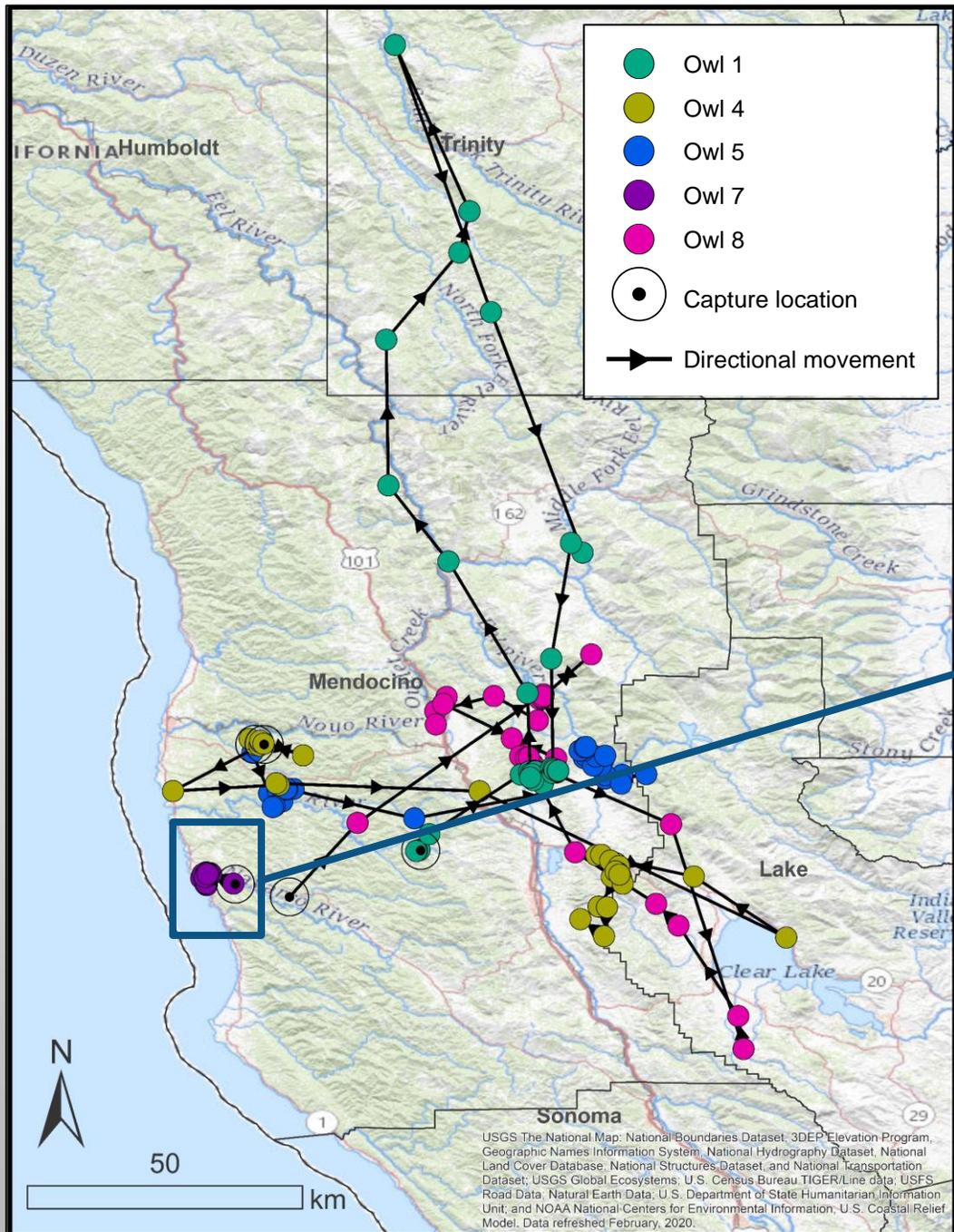


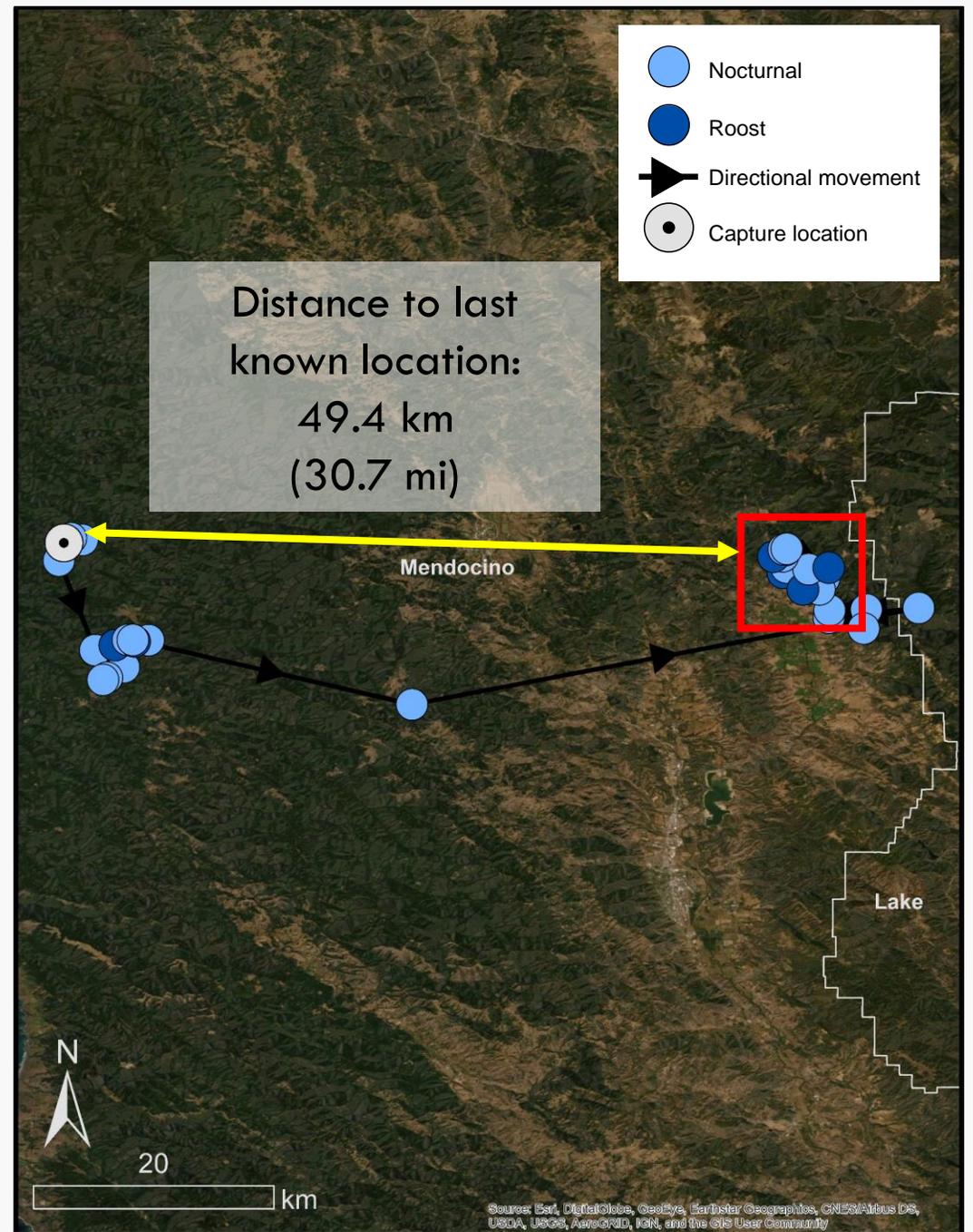
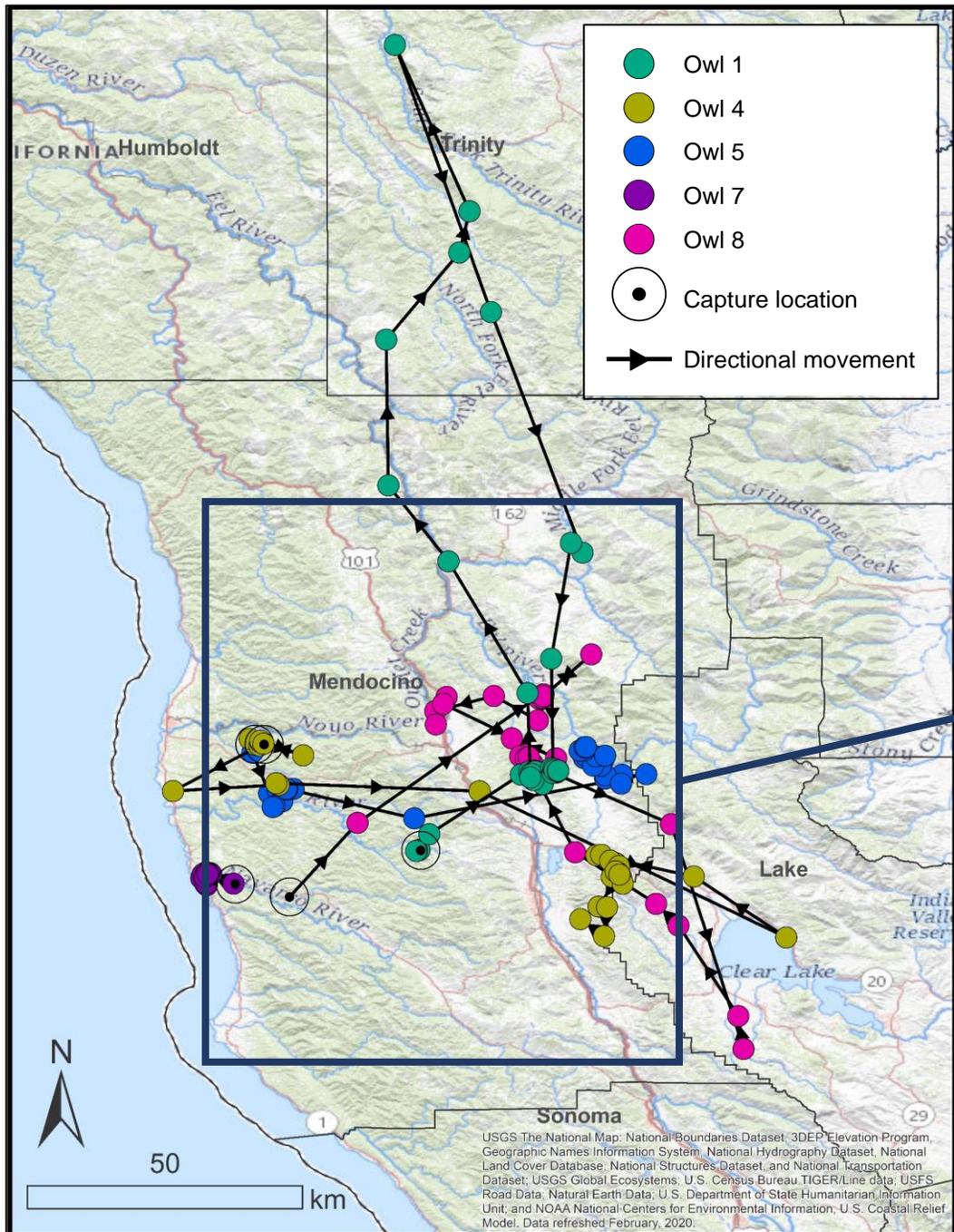


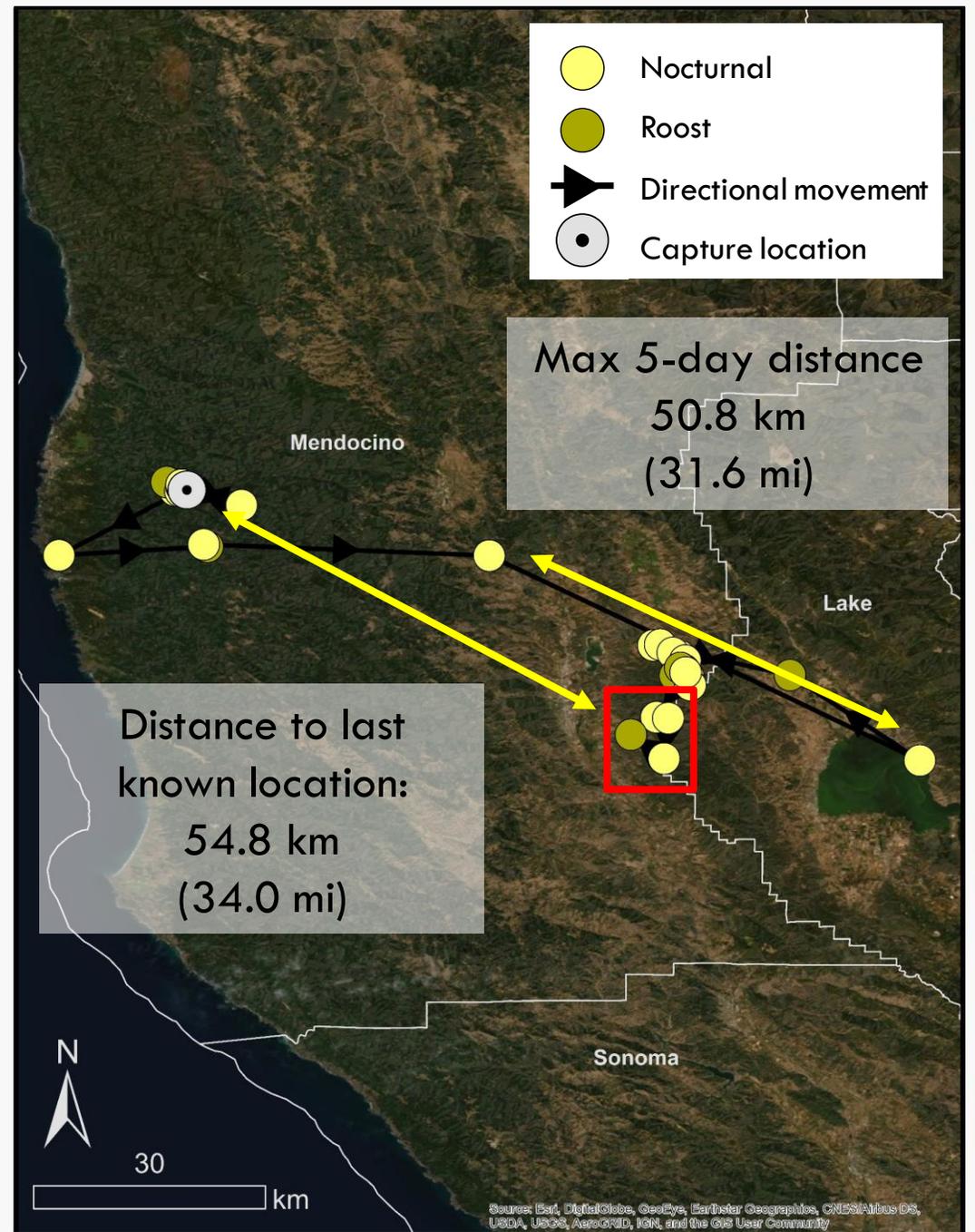
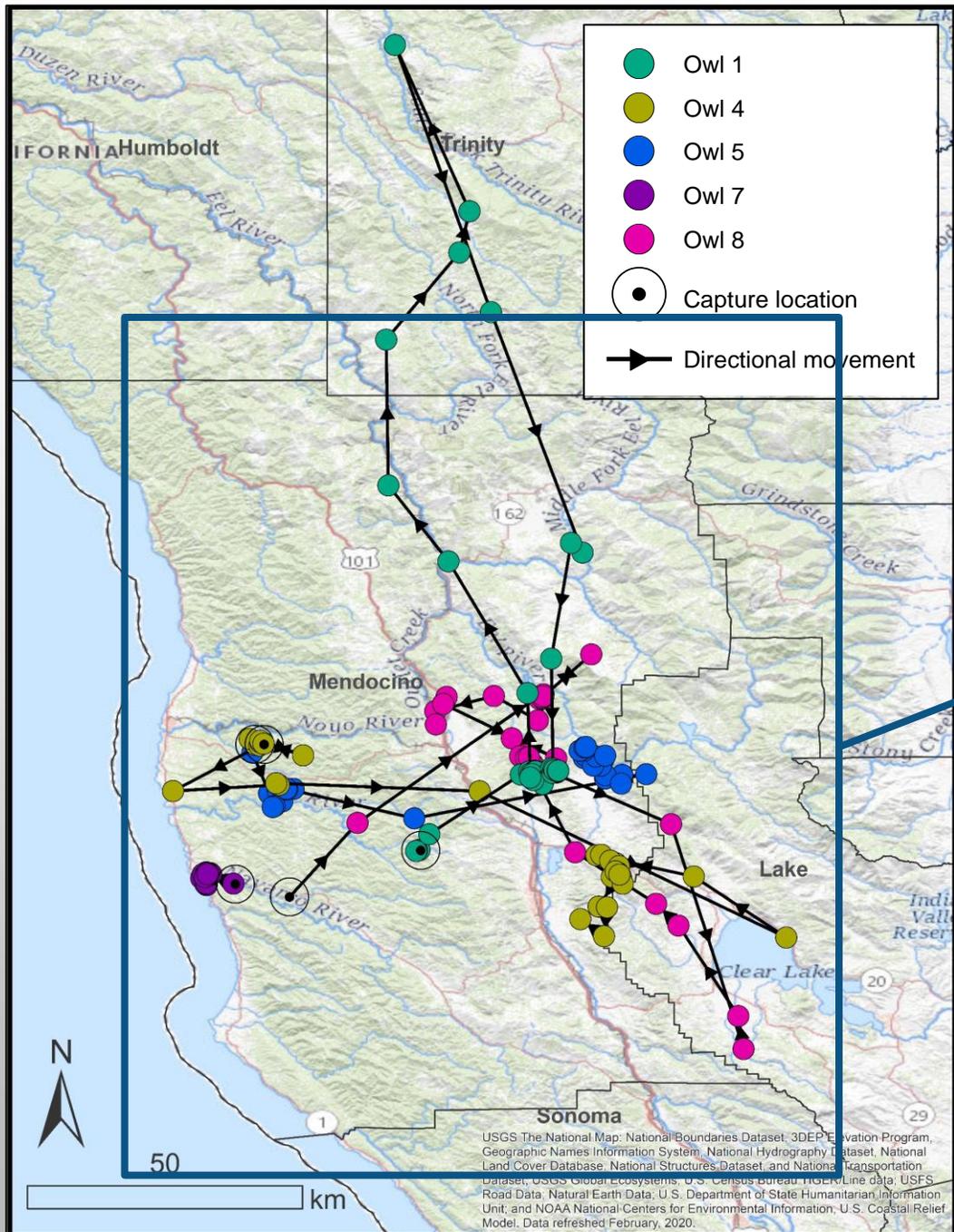
PRELIMINARY RESULTS

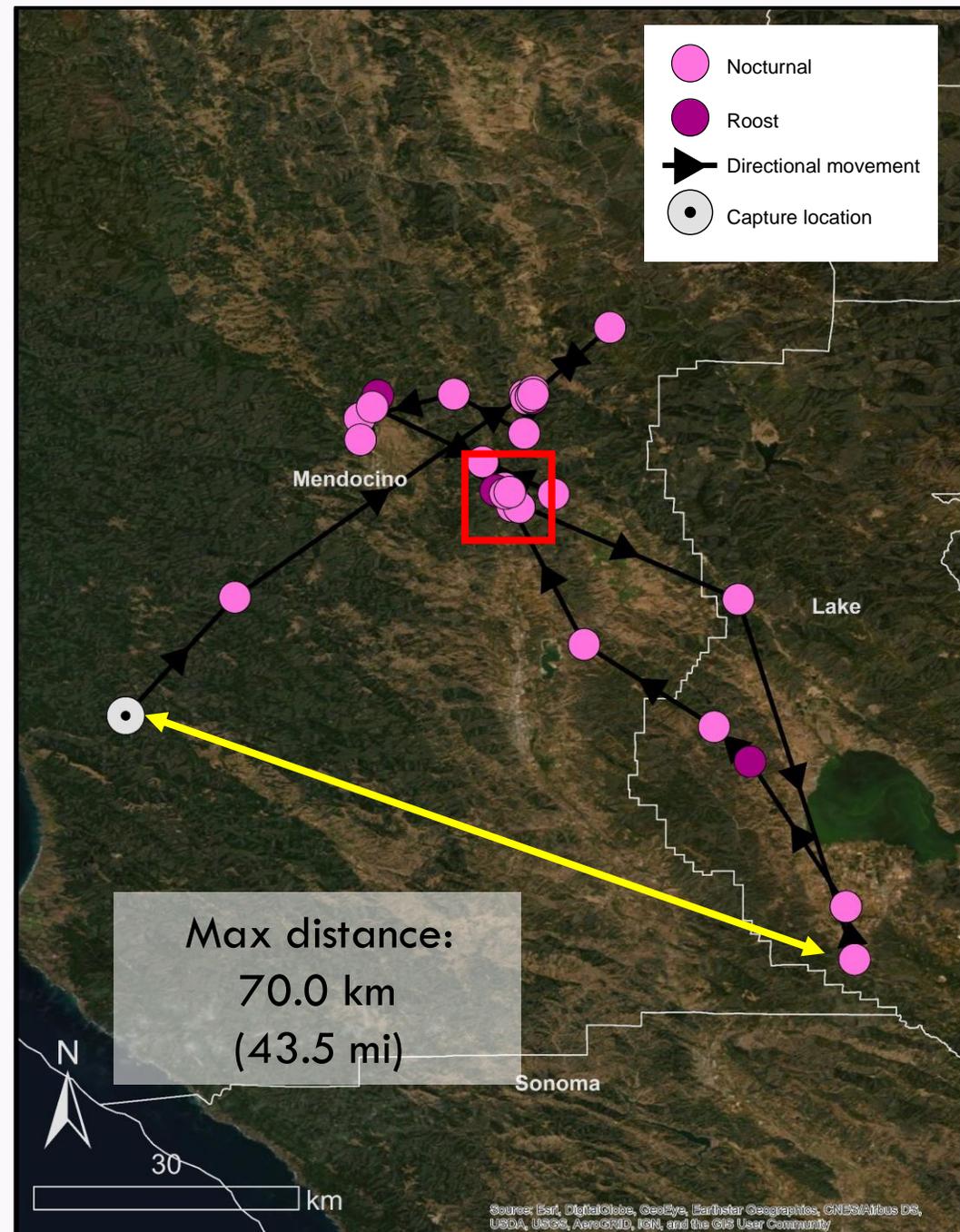
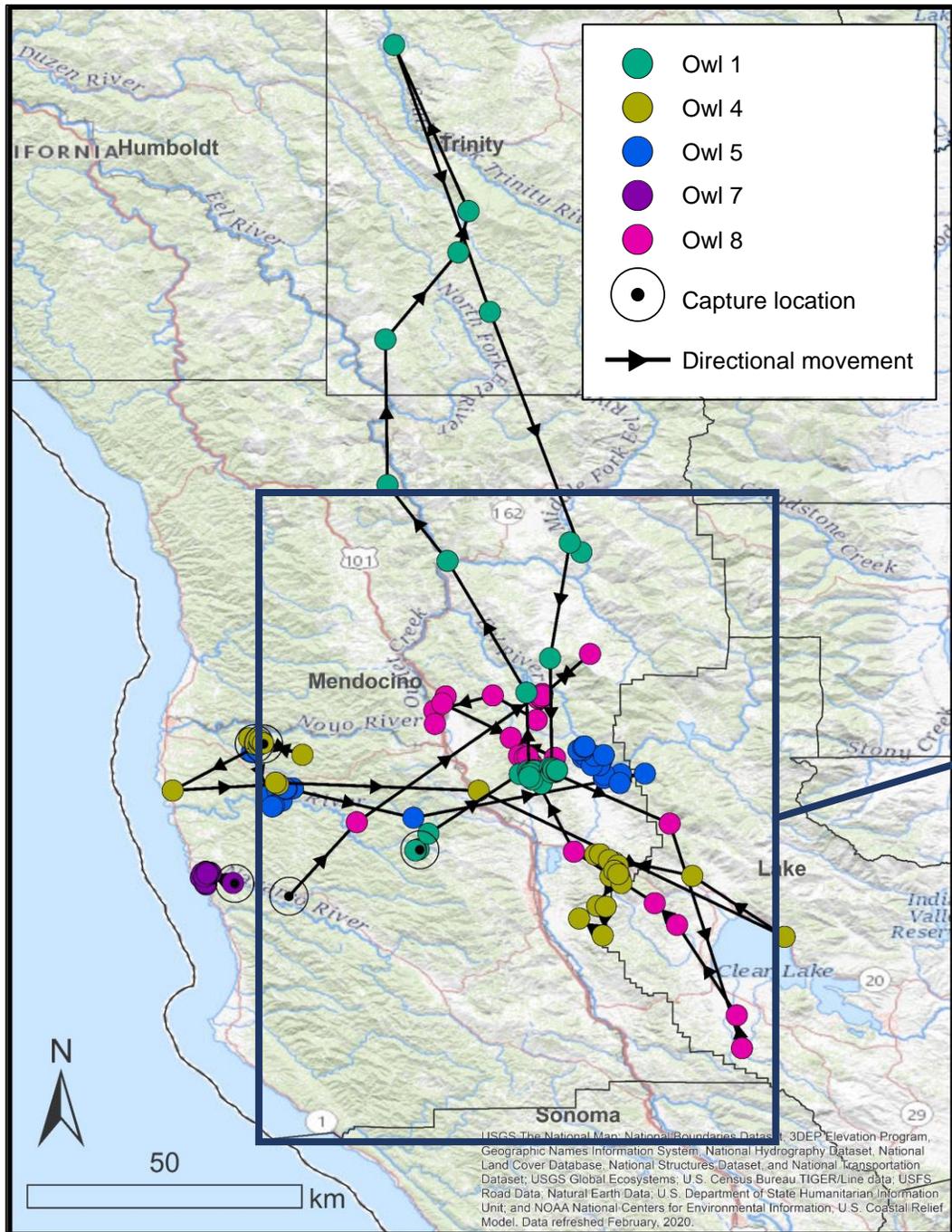
- 5 juveniles still active as of 12/29/2020
- **MAXIMUM** straight-line distance dispersed
 - Mean: 71.7 km
 - Range: 5.0-146.5 km
- Straight-line distance from capture to **MOST RECENT** location
 - Mean: 35.0 km
 - Range: 4.3-54.8 km

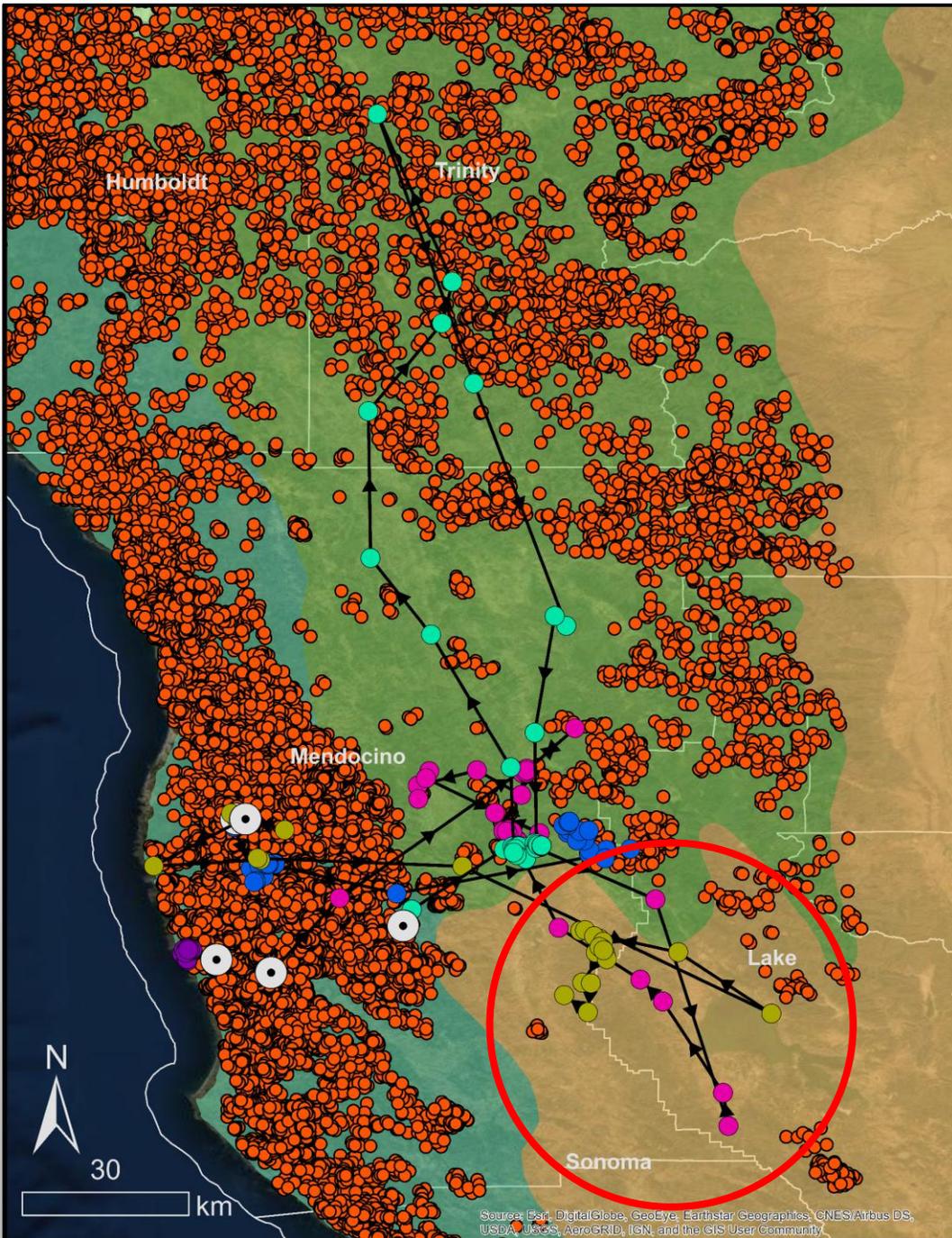












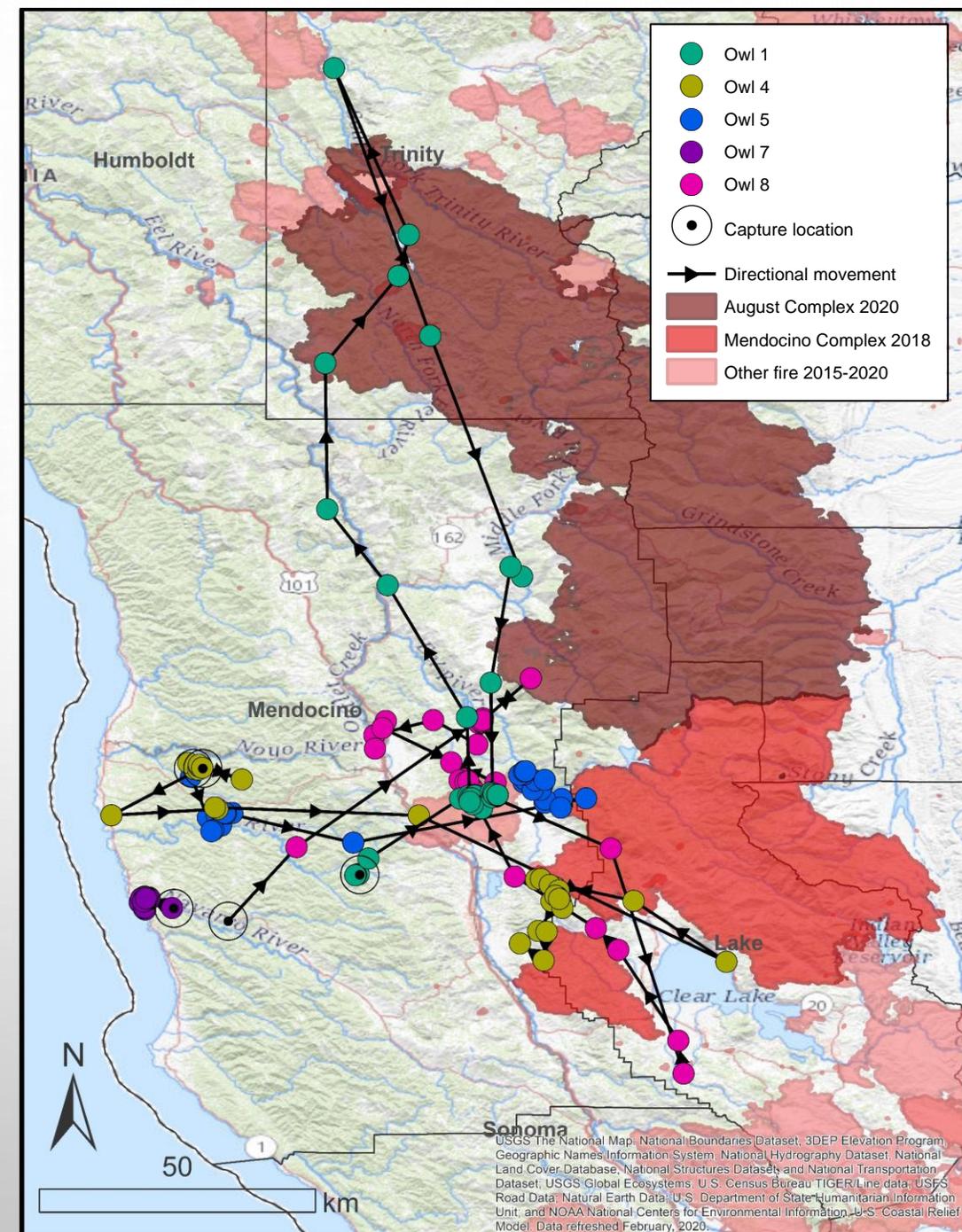
recreation.gov

- NSOW detections (CNDDDB)
- Klamath-Siskiyou forests
- Northern California coastal forests
- California interior chaparral and woodlands

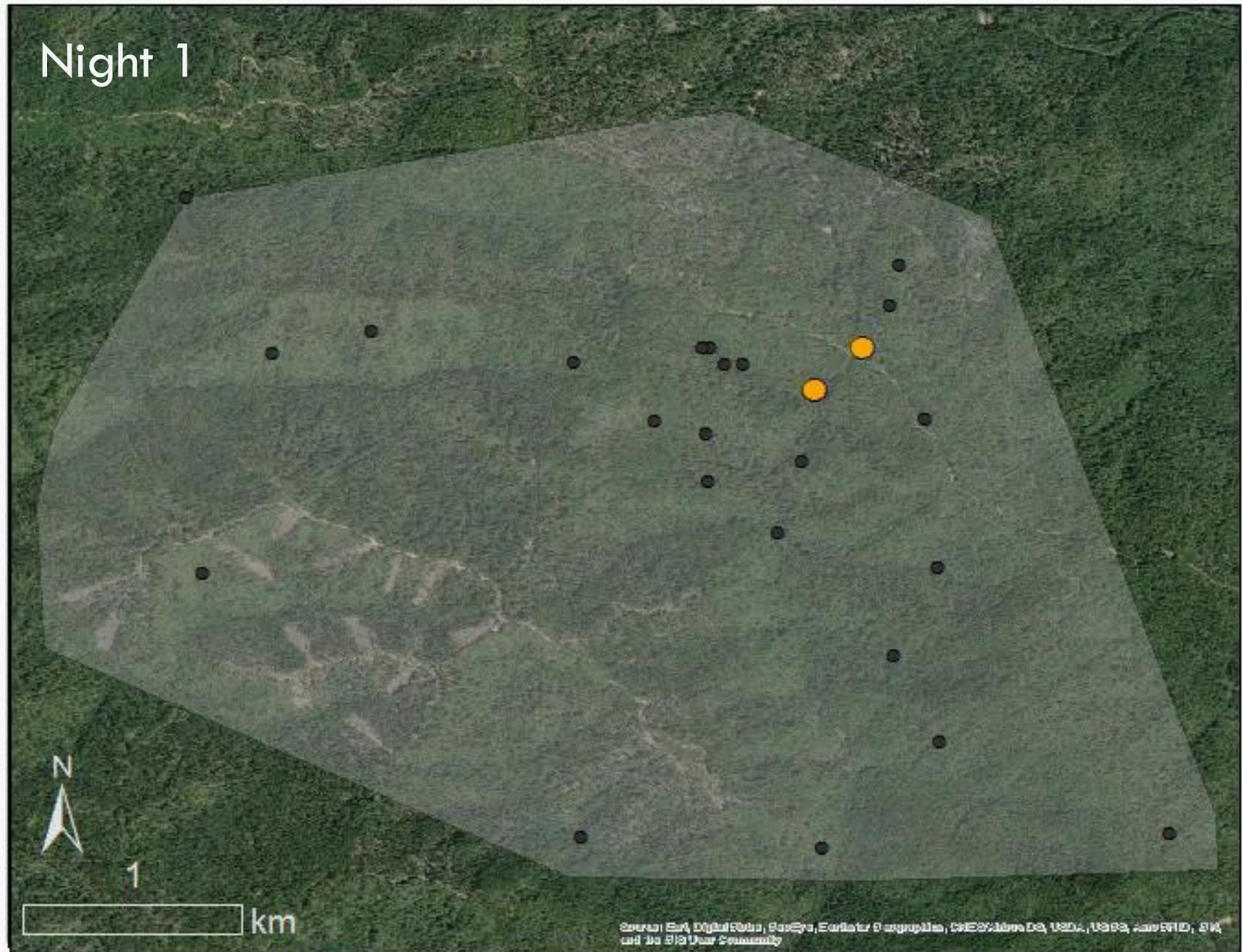
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

OWL DISPERSAL AND FIRE

- 2020 August Complex & 2018 Mendocino Complex fire footprints span forest to east of study area
- Does severe fire act as dispersal barrier to barred owls?

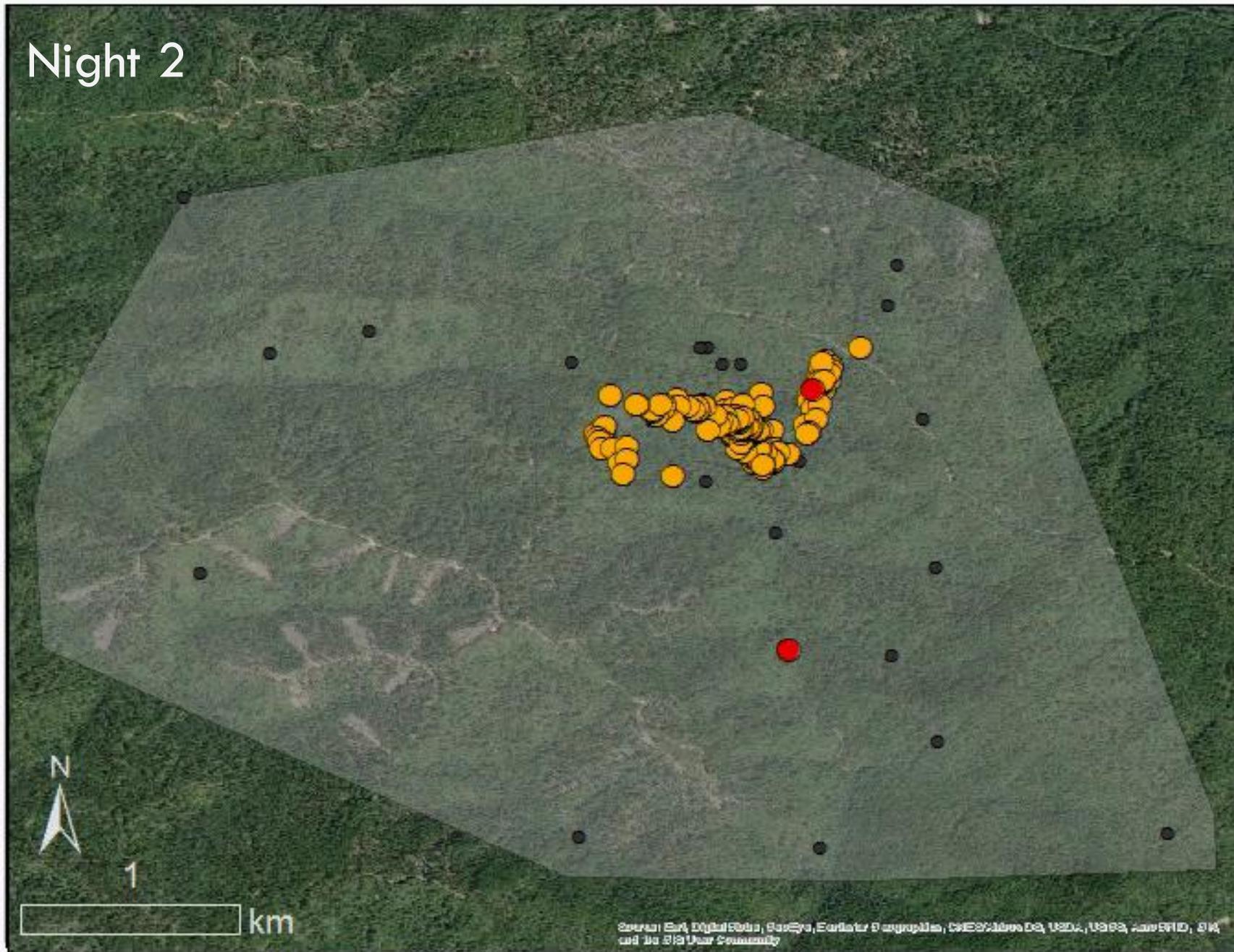


FINE-SCALE MOVEMENT DATA



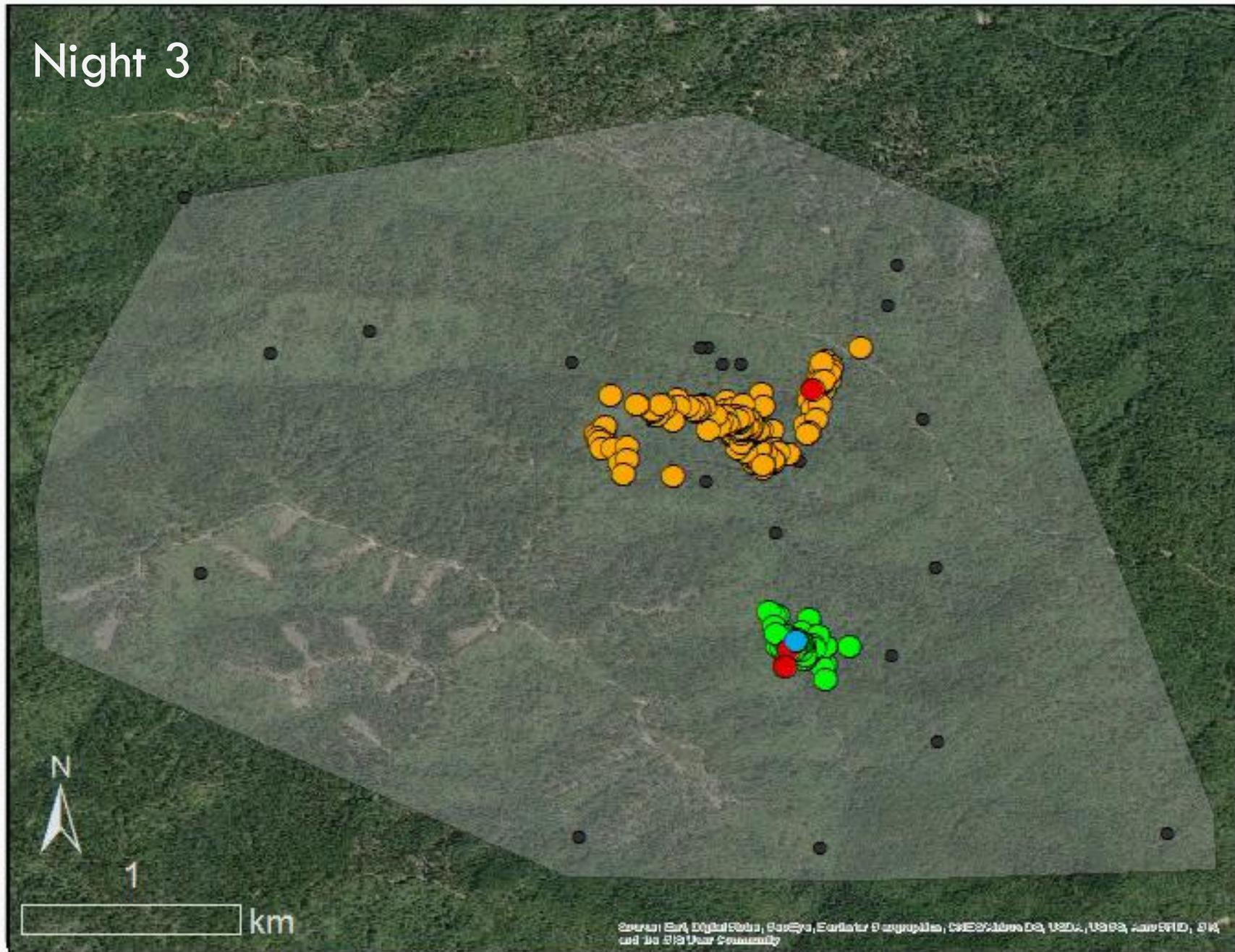
FINE-SCALE MOVEMENT DATA

Night 2



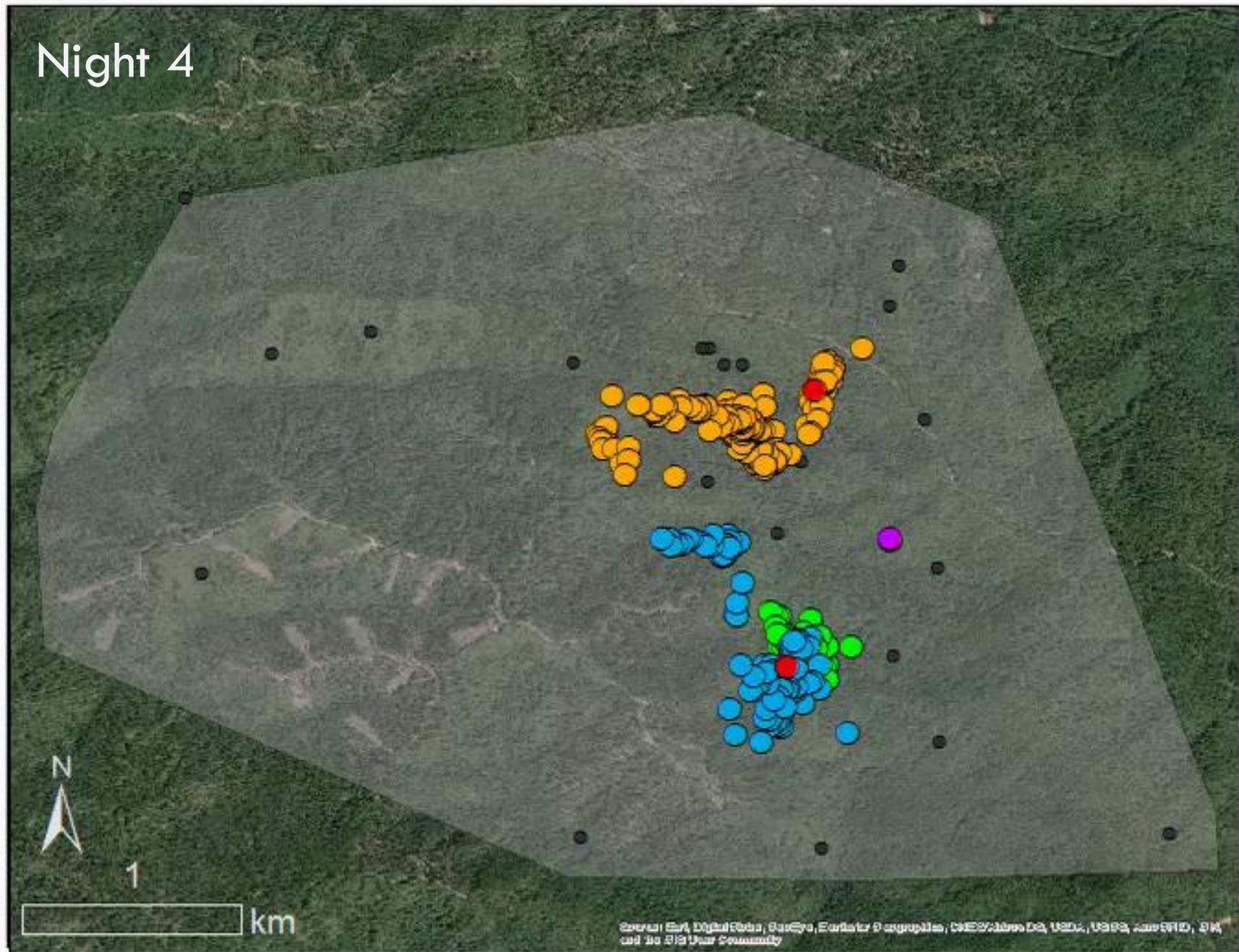
FINE-SCALE MOVEMENT DATA

Night 3

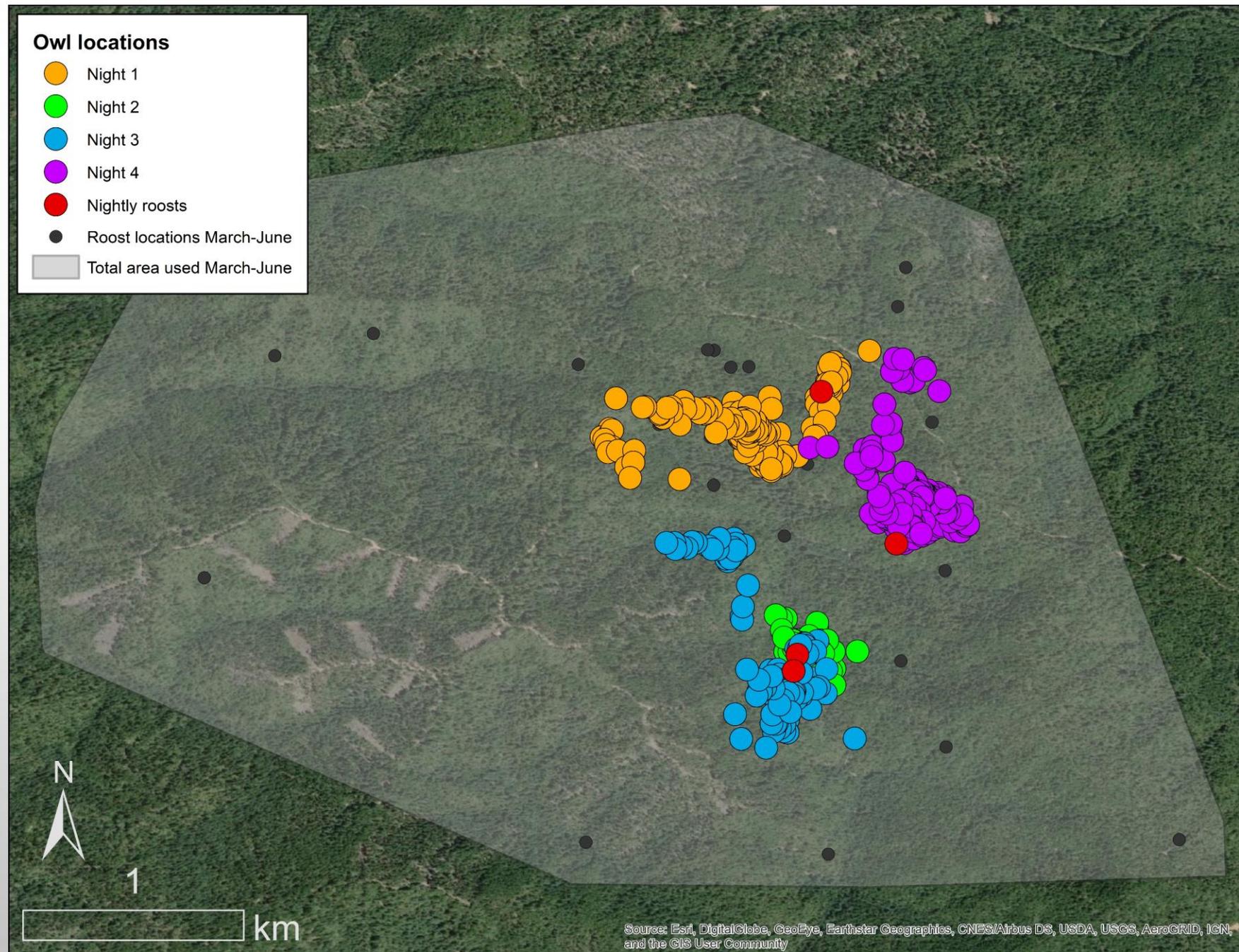


FINE-SCALE MOVEMENT DATA

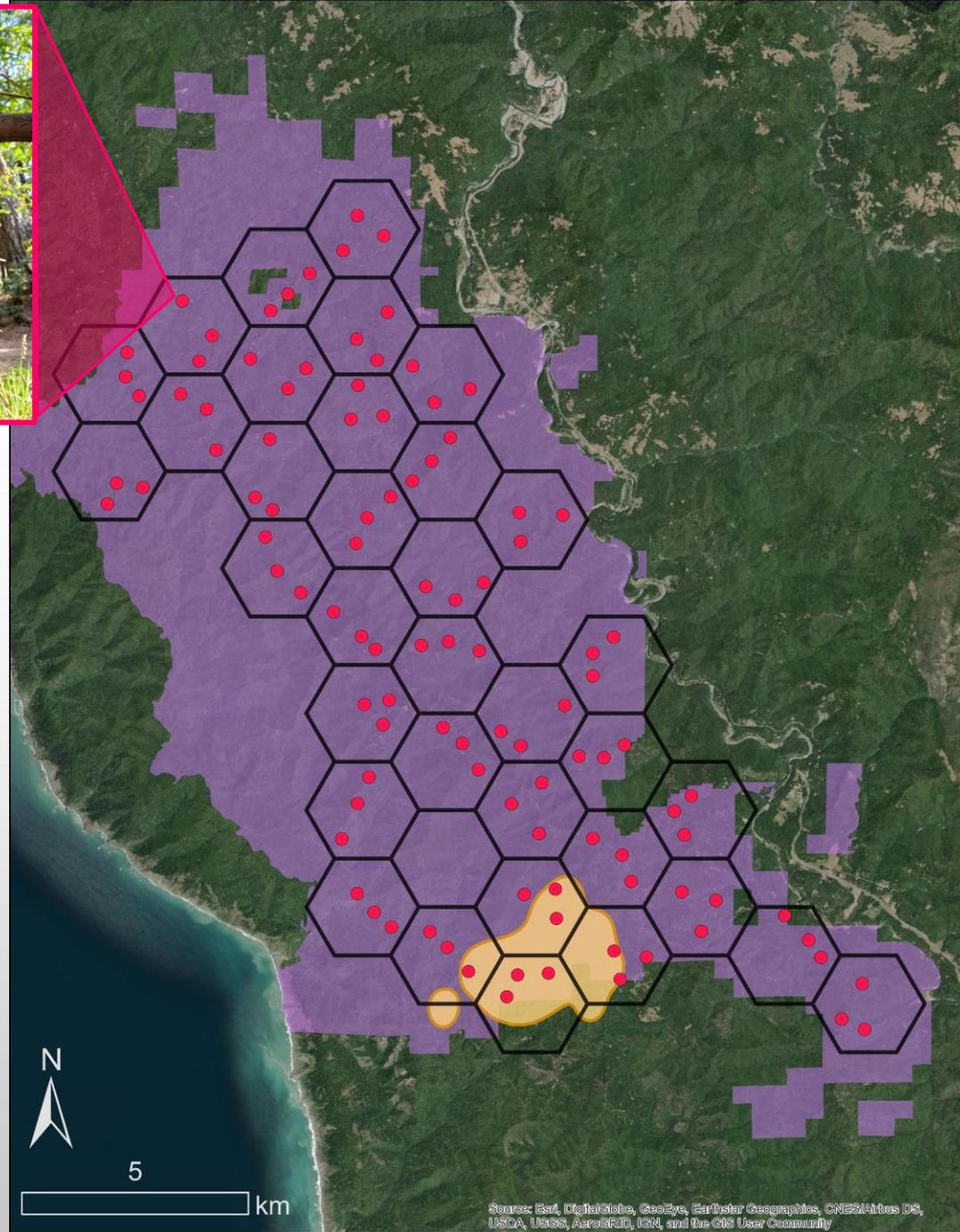
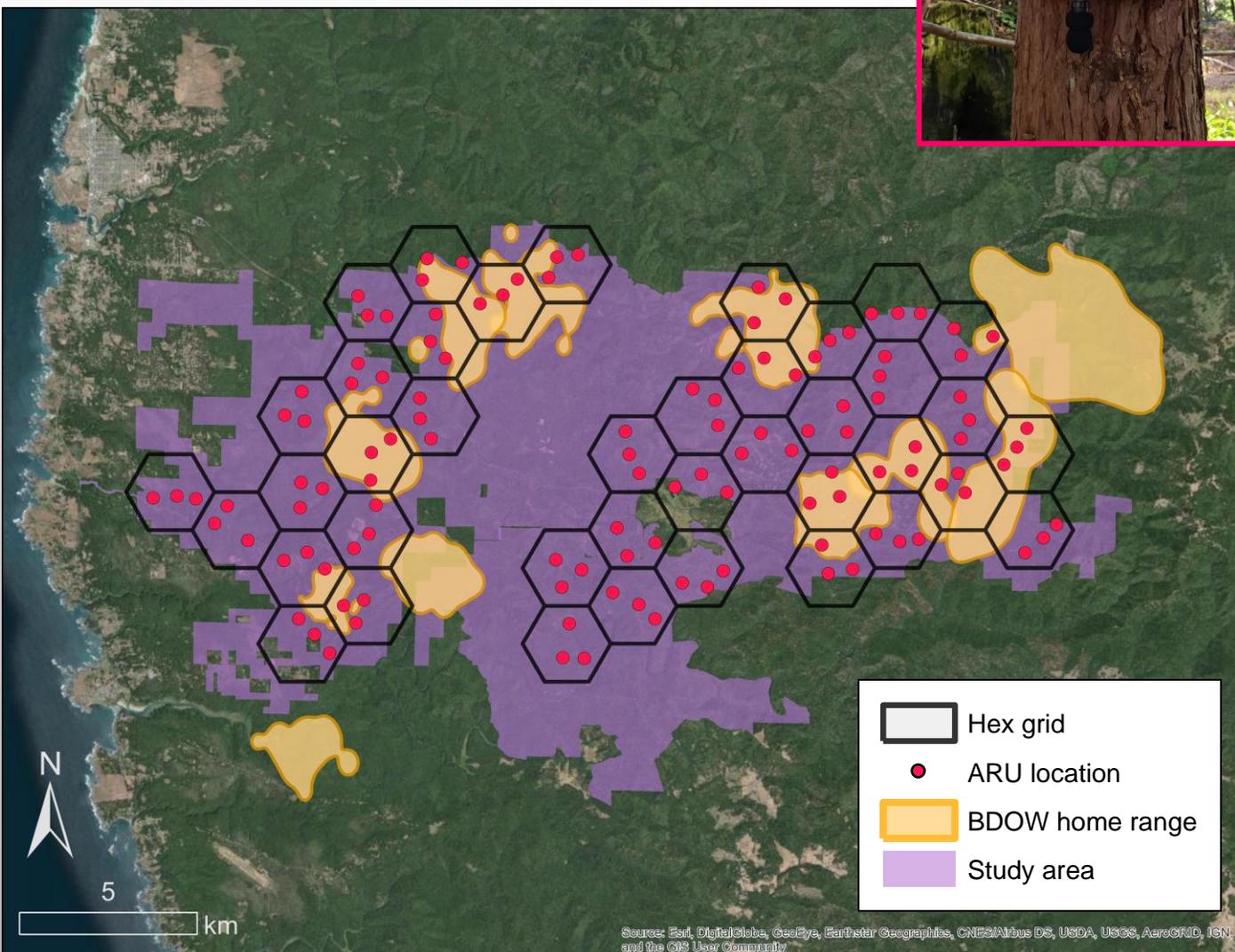
Night 4



FINE-SCALE MOVEMENT DATA



ACOUSTIC DATA





CONCLUSIONS

- Barred owls may be using wider variety of habitat types than spotted owls
- Long-distance dispersal (>50 km) common in juvenile barred owls
- Larger barred owl-free refugia buffers may be needed to prevent continued barred owl spread

NEXT STEPS

- Continue to collect data from dispersing juveniles tagged in 2020
- Increase sample size in 2021 field season
- Conduct analyses on combined 2020 and 2021 data:
 - Dispersal timing and distance
 - Habitat selection (use vs. availability)
 - Survival & mortality



THANK YOU!

E-mail: wawatson@wisc.edu



SJSU | RESEARCH FOUNDATION

THE
CONSERVATION FUND



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