



U.S. DEPARTMENT  
OF ENERGY  
AWARDEE™

# Pronghorn Space-use and Movements During Construction of a Utility Scale Solar Energy Development



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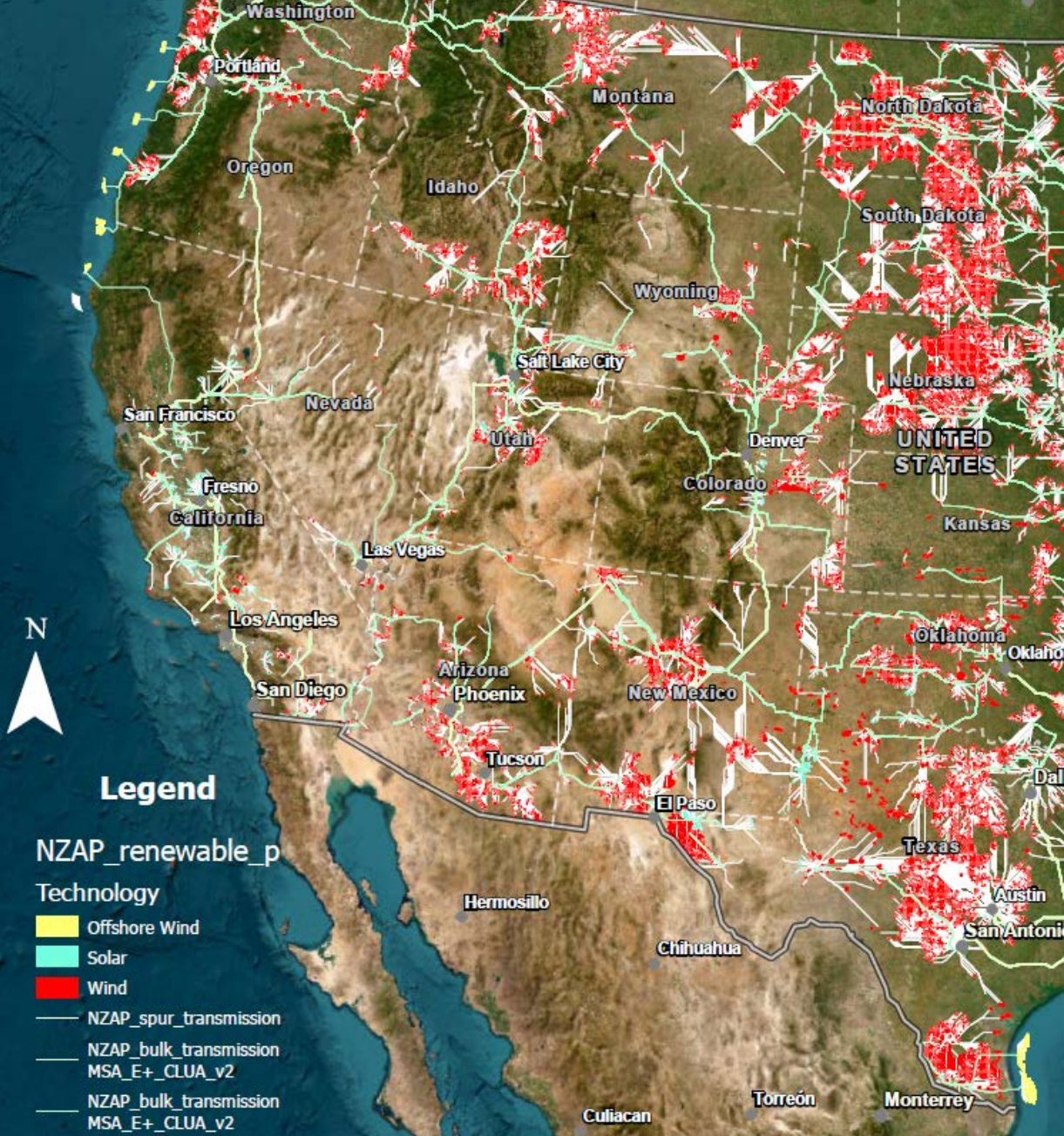
# The Planet Needs Solar Power. Can We Build It Without Harming Nature?

Today's decisions about how and where to set up new energy projects will reverberate for generations.

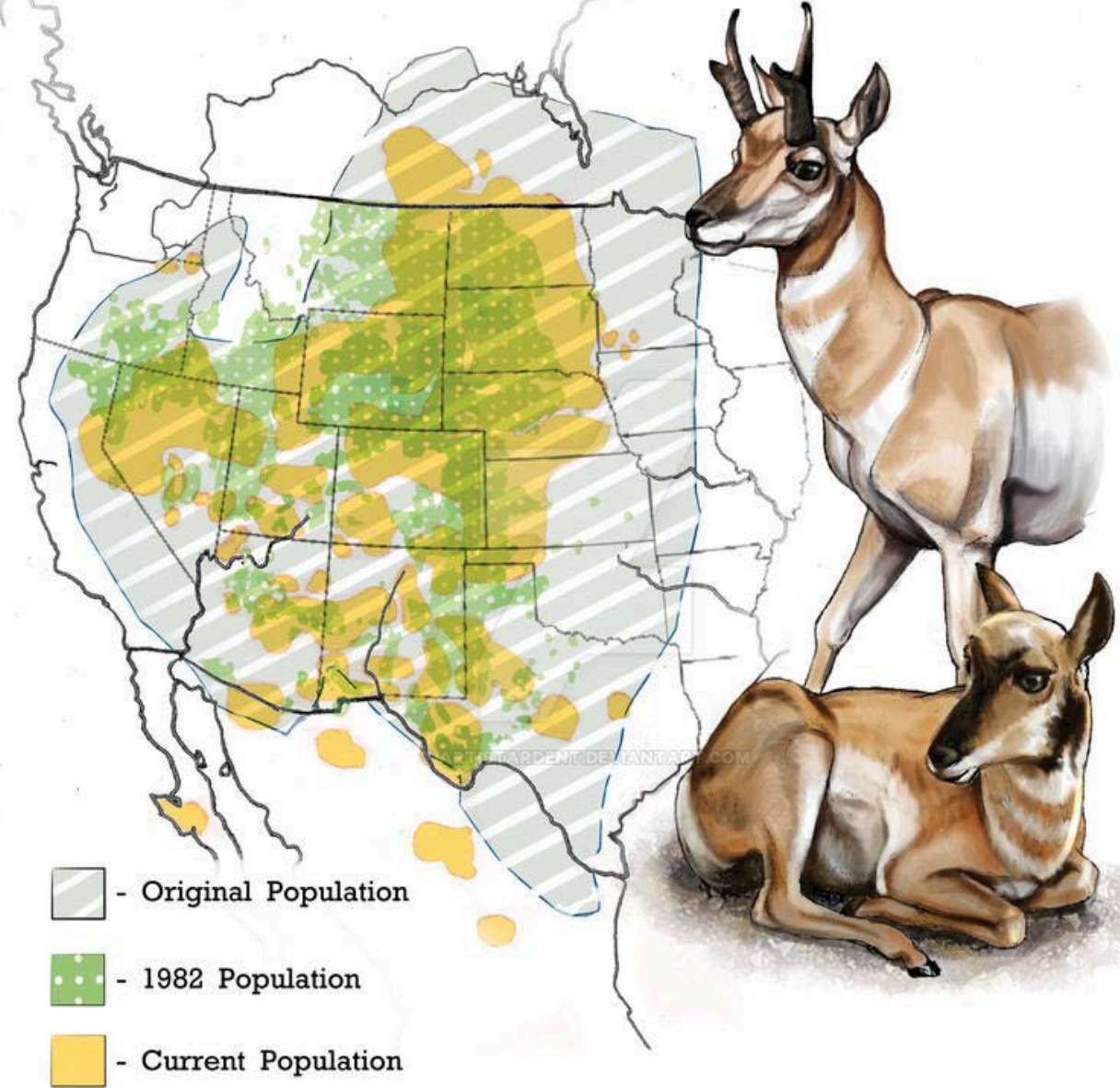


ambitious sustainability goals around clean energy, but integrating rising amounts of renewables, minimizing environmental impacts, and achieving carbon reduction targets can be challenging.

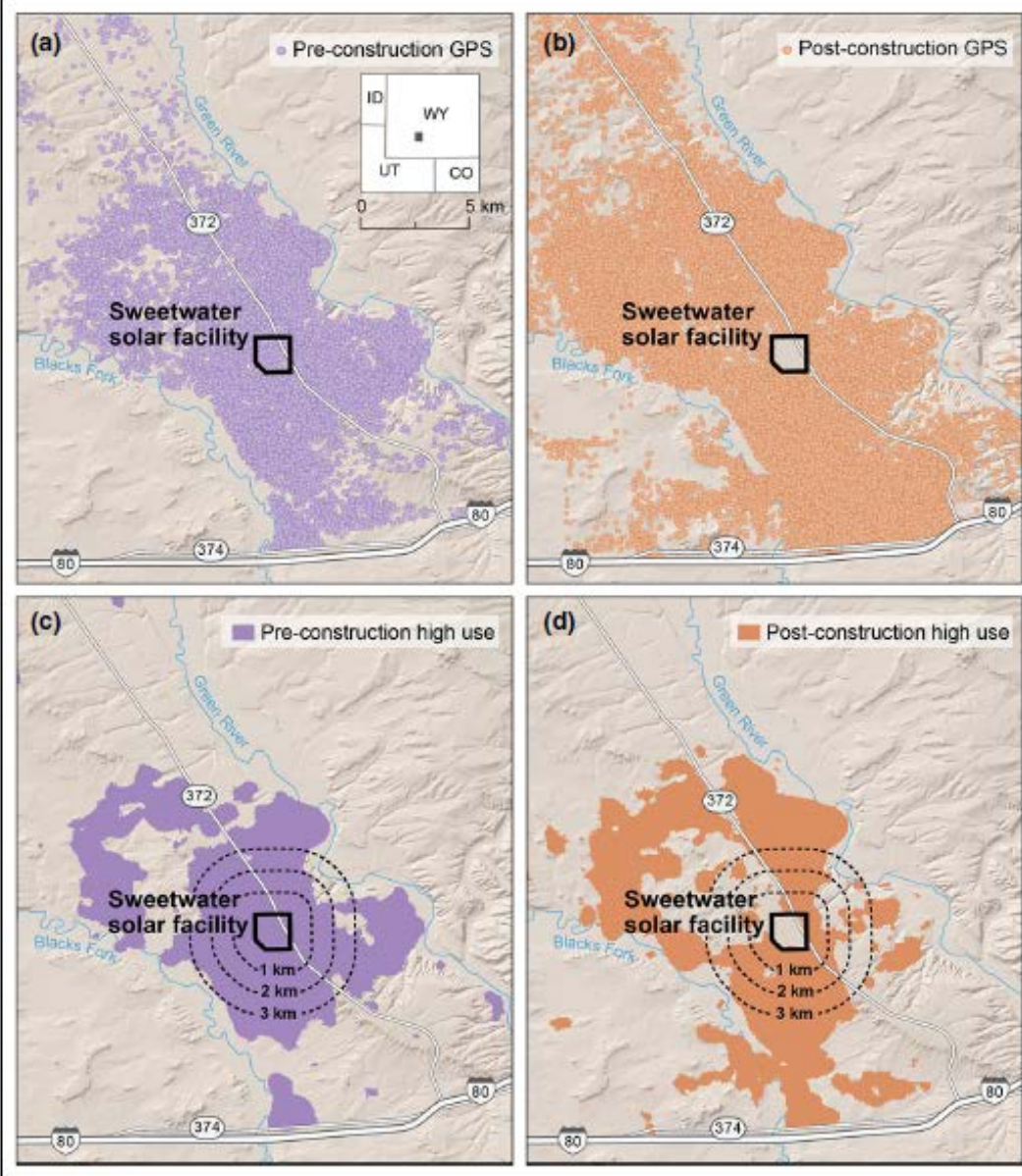
# Net Zero America – Constrained Land use



# Pronghorn Antelope Distribution

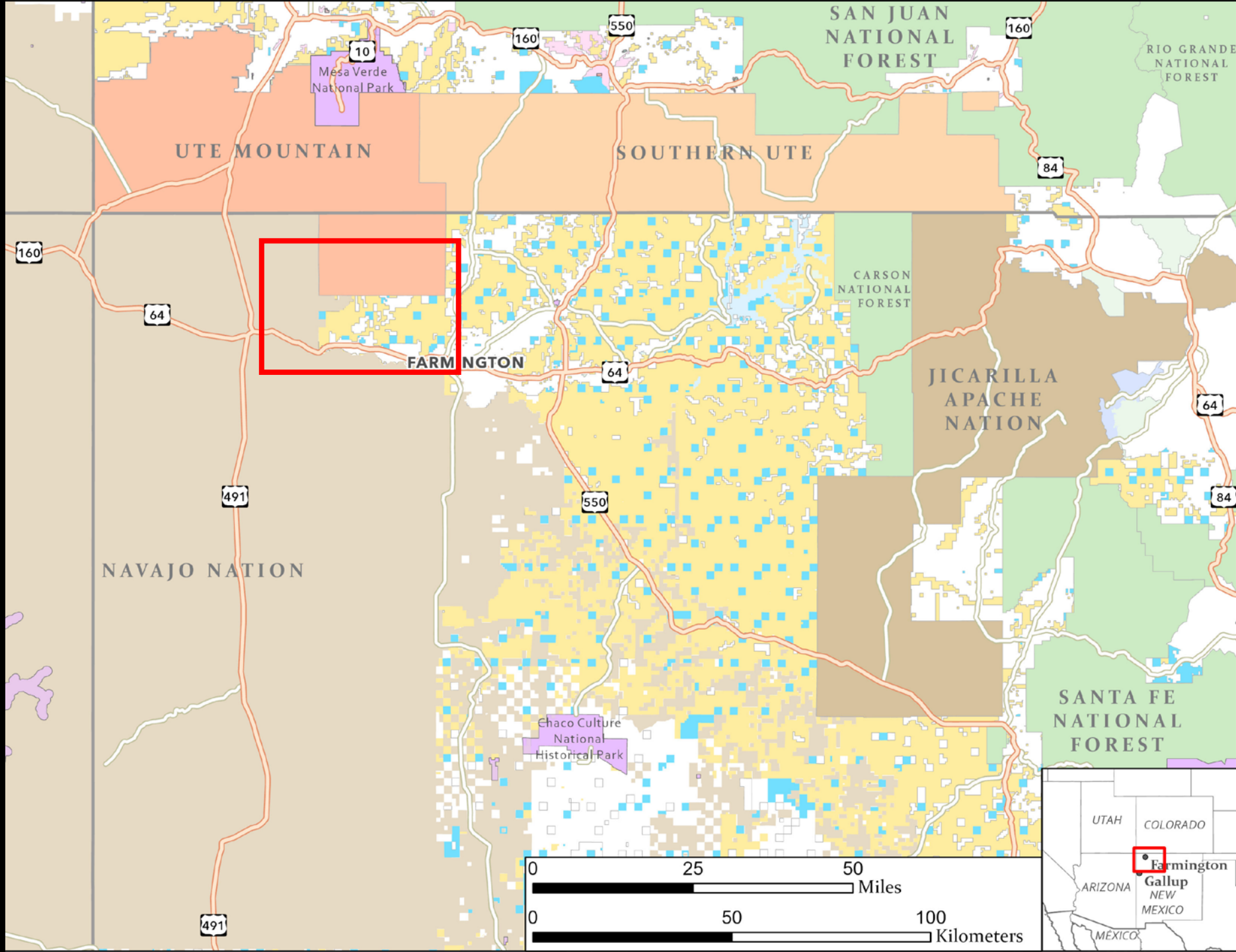


Fencing around solar installations excludes pronghorn and likely other species (see commentary)



**Figure 1.** Global positioning system (GPS) locations of resident pronghorn (*Antilocapra americana*;  $n = 11$ ) (a) before and (b) after construction of the Sweetwater Solar Facility, a utility-scale solar energy (USSE) project in southwestern Wyoming. High-use range of resident pronghorn (c) before (01 May–30 Sep 2018) and (d) after (01 May–30 Sep 2019 and 2020) the USSE facility was built.





- Low density populations
- Little baseline data about population, movements, space-use, etc
- Tribes have few resources for monitoring of wildlife

PHOTO CREDIT: KEVIN P.  
SMITH



Development by  
DESRI  
All development  
on private land

1. Construction began June 2
2. Official groundbreaking C
3. Completion late 2024



Jun-22-2023





July-31-2023



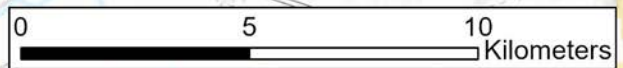
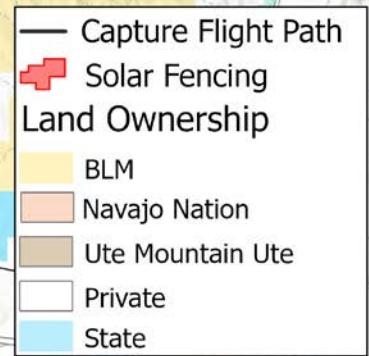
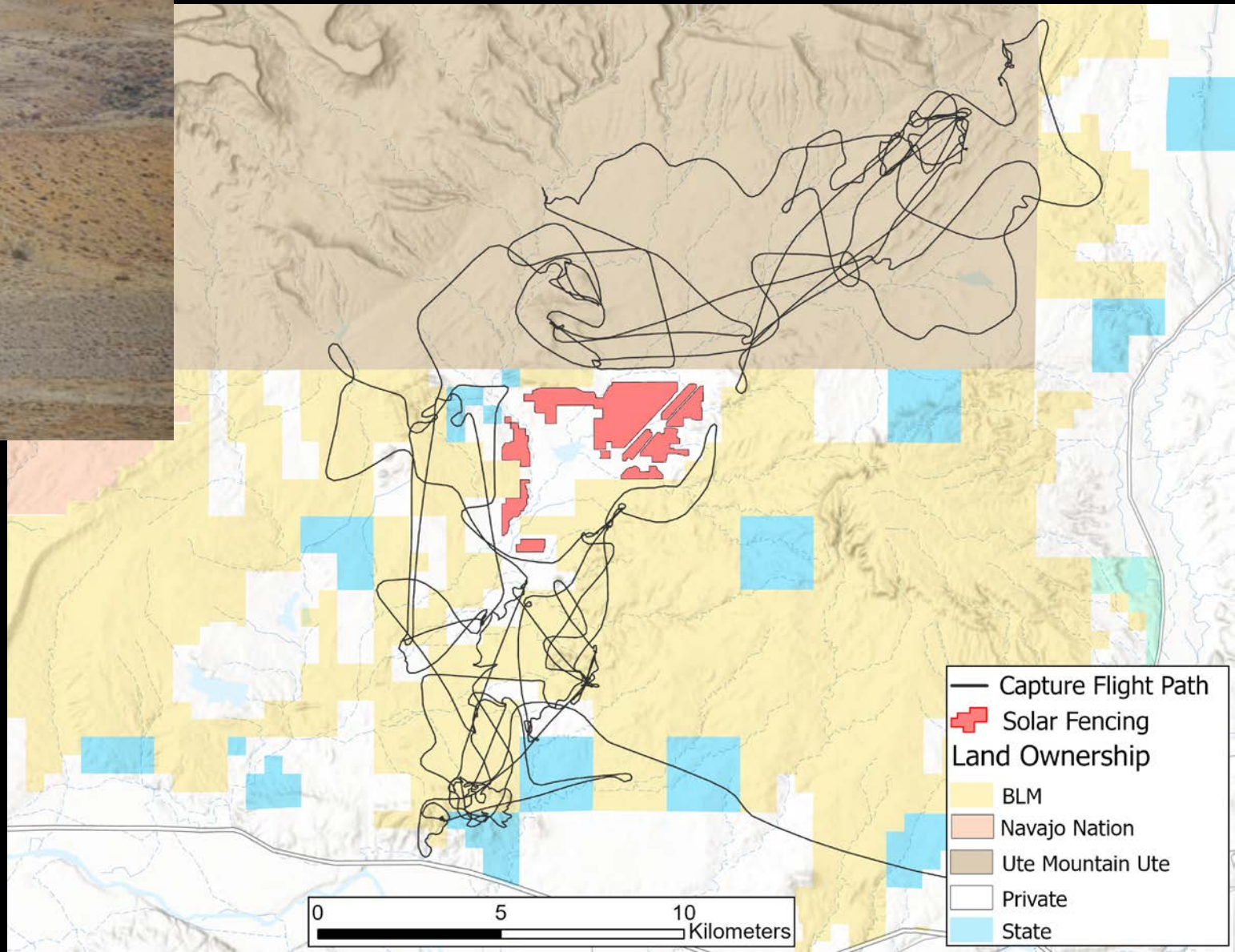
Jan 24, 2024



June 10 2024

Fenced area: 4.45 km<sup>2</sup> (1100 acres)  
Fenced perimeter: 34.2 km<sup>2</sup>



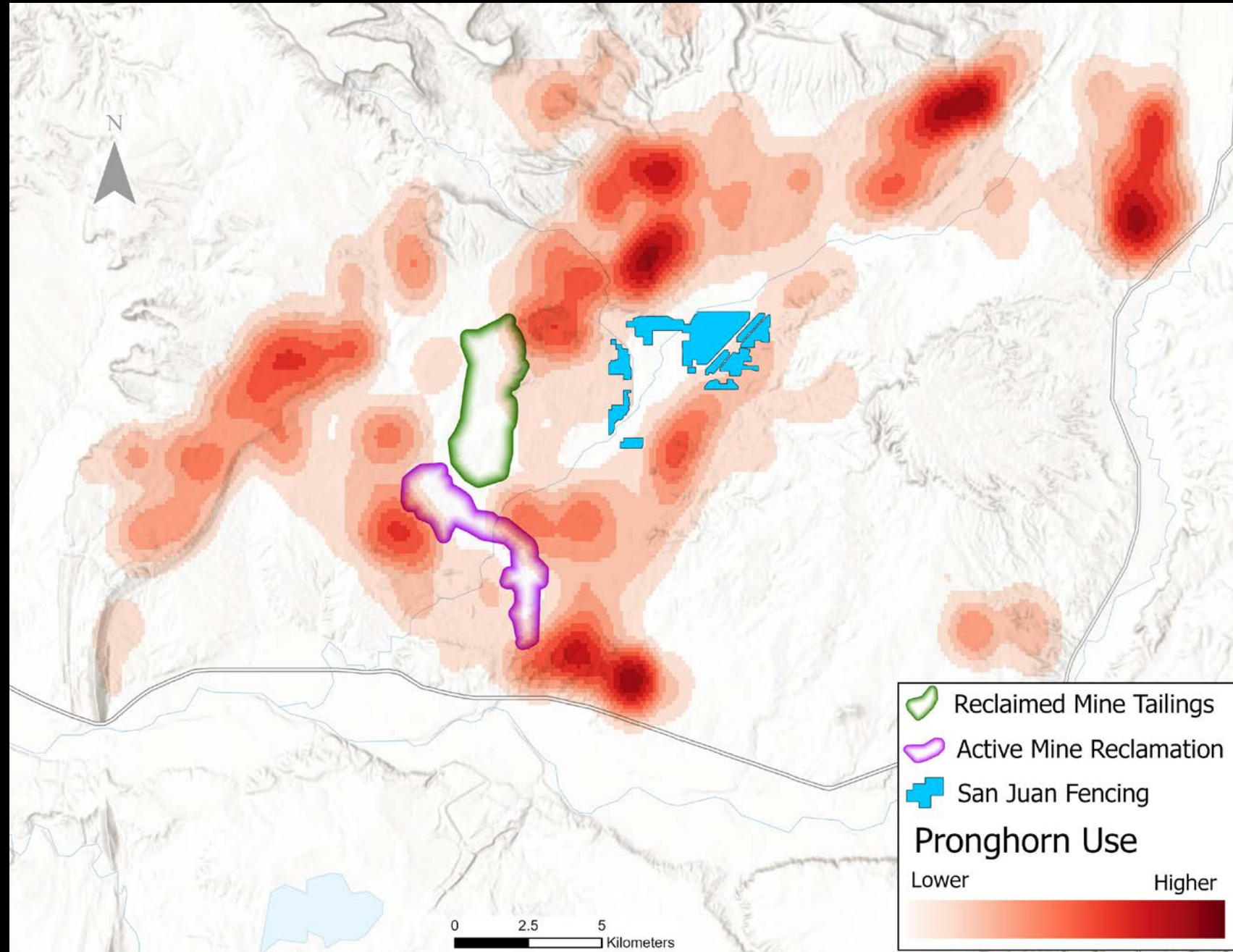


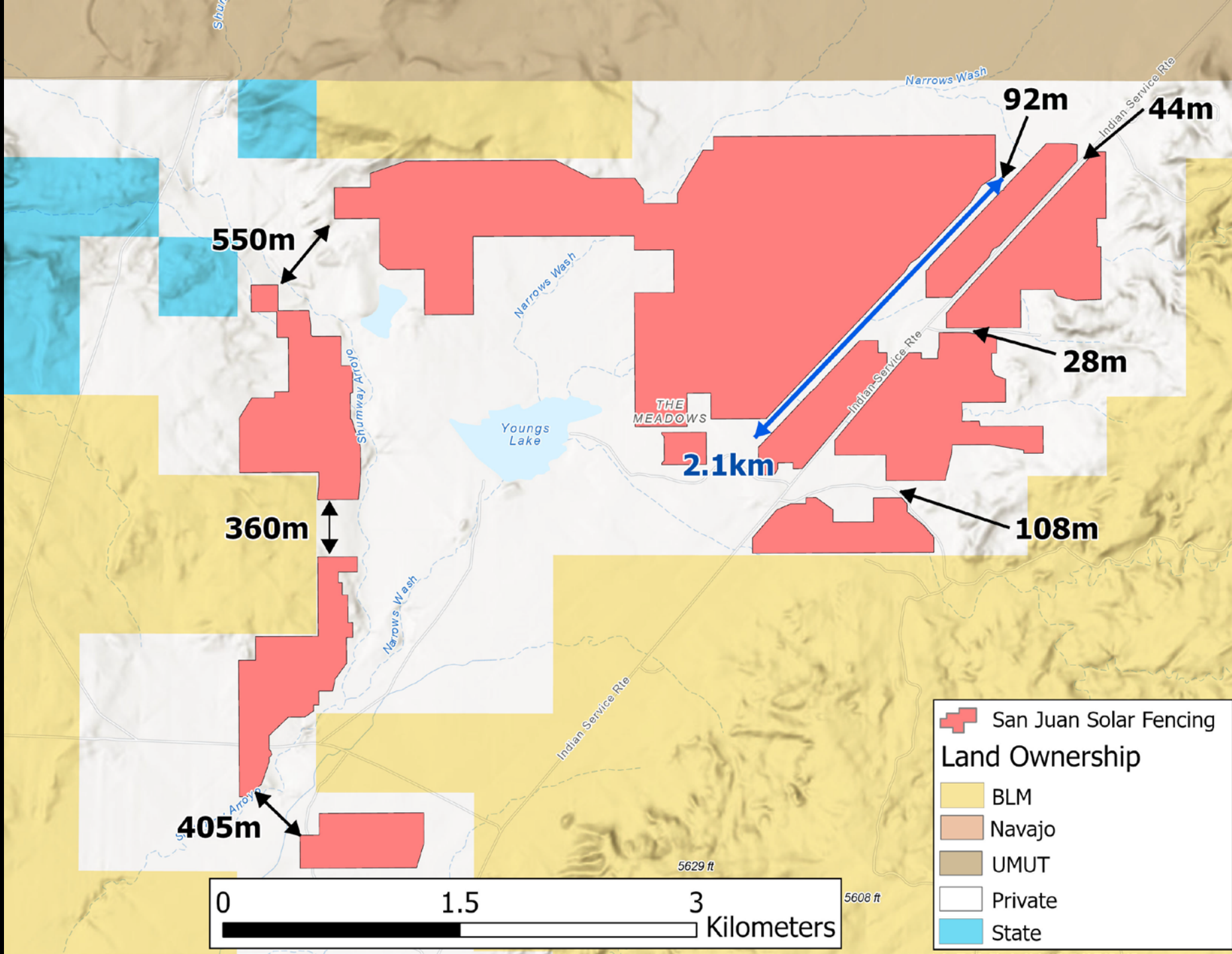


- 60 GPS collar (Lotek litetrack 420)
  - 30 North (around current solar)
  - 30 South (prospective solar)
  - All adult does
  - 1 hour fix rate all day



Since March 2, 2024:  
72,960 locations  
2,432 ± 468 SD  
Mean Habitat Quality:  
959 ± 19.4  
Range: 904-973





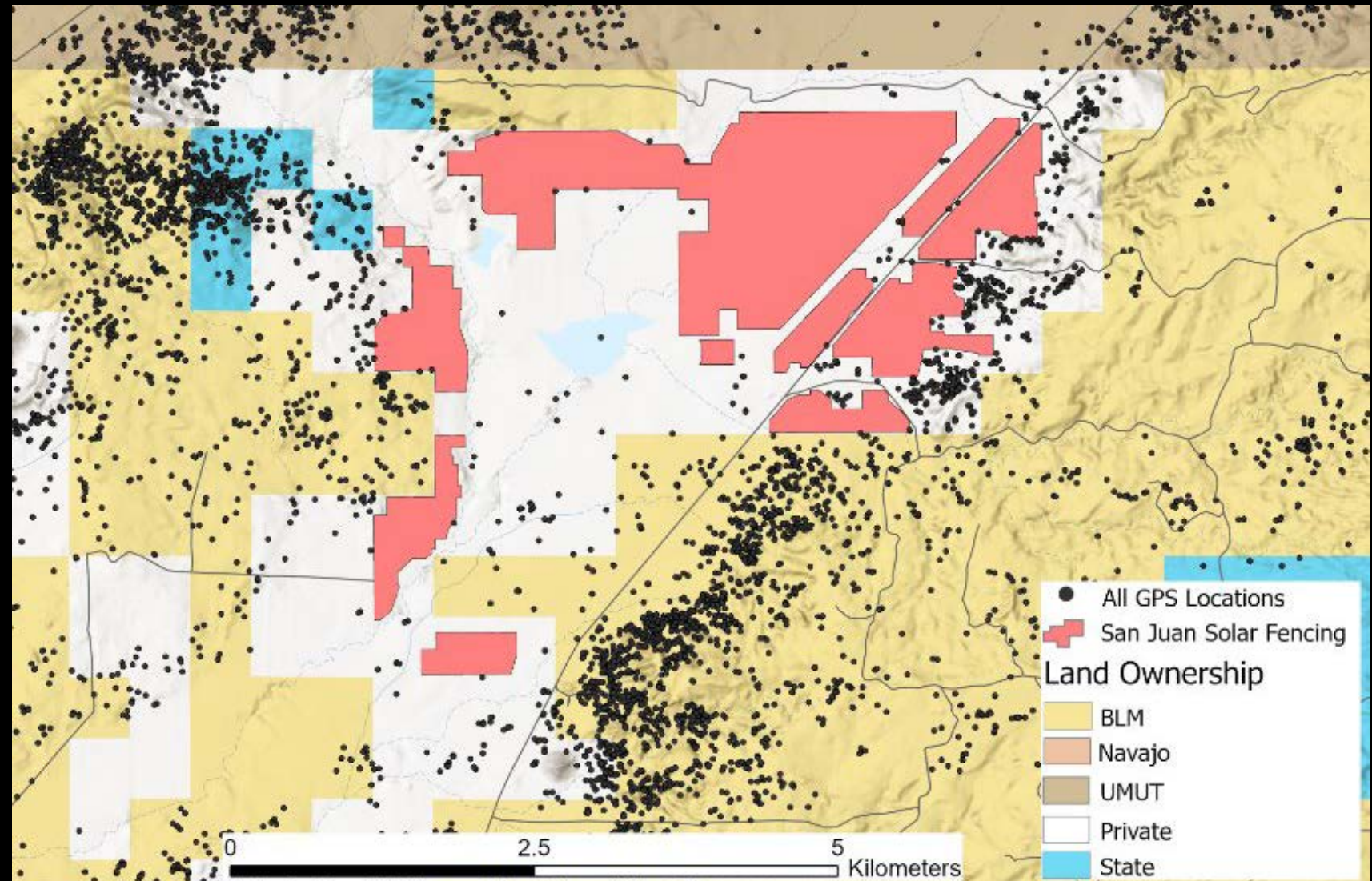
**San Juan Solar Fencing**

**Land Ownership**

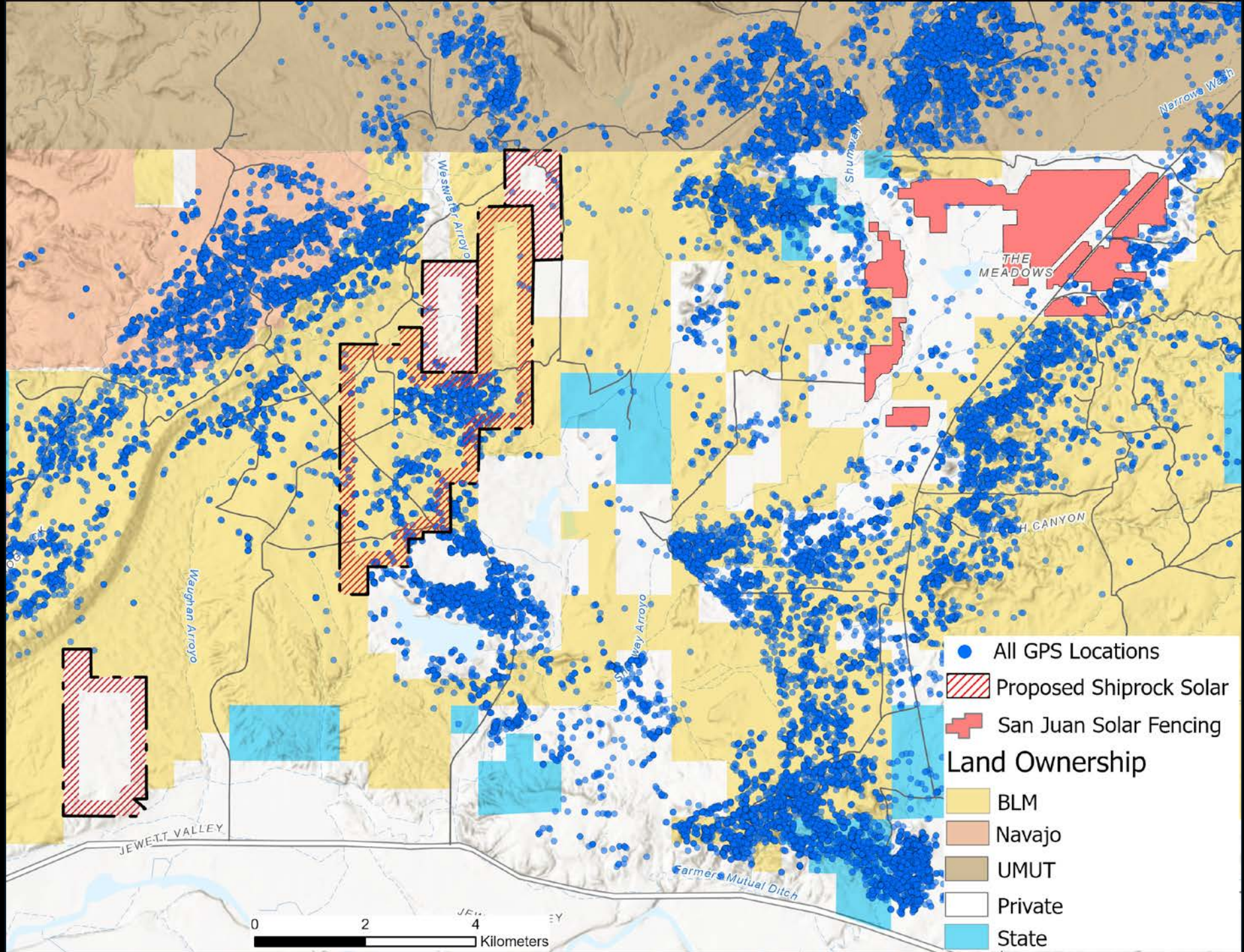
- BLM
- Navajo
- UMUT
- Private
- State



- 25 animals (83%) have come within 1 km of fencing
- More use around outside edges of fencing than inside
  - Use of foothills and 'badlands'
  - Lack of use in central portion with arrays on multiple sides
- Still only 4 months of data

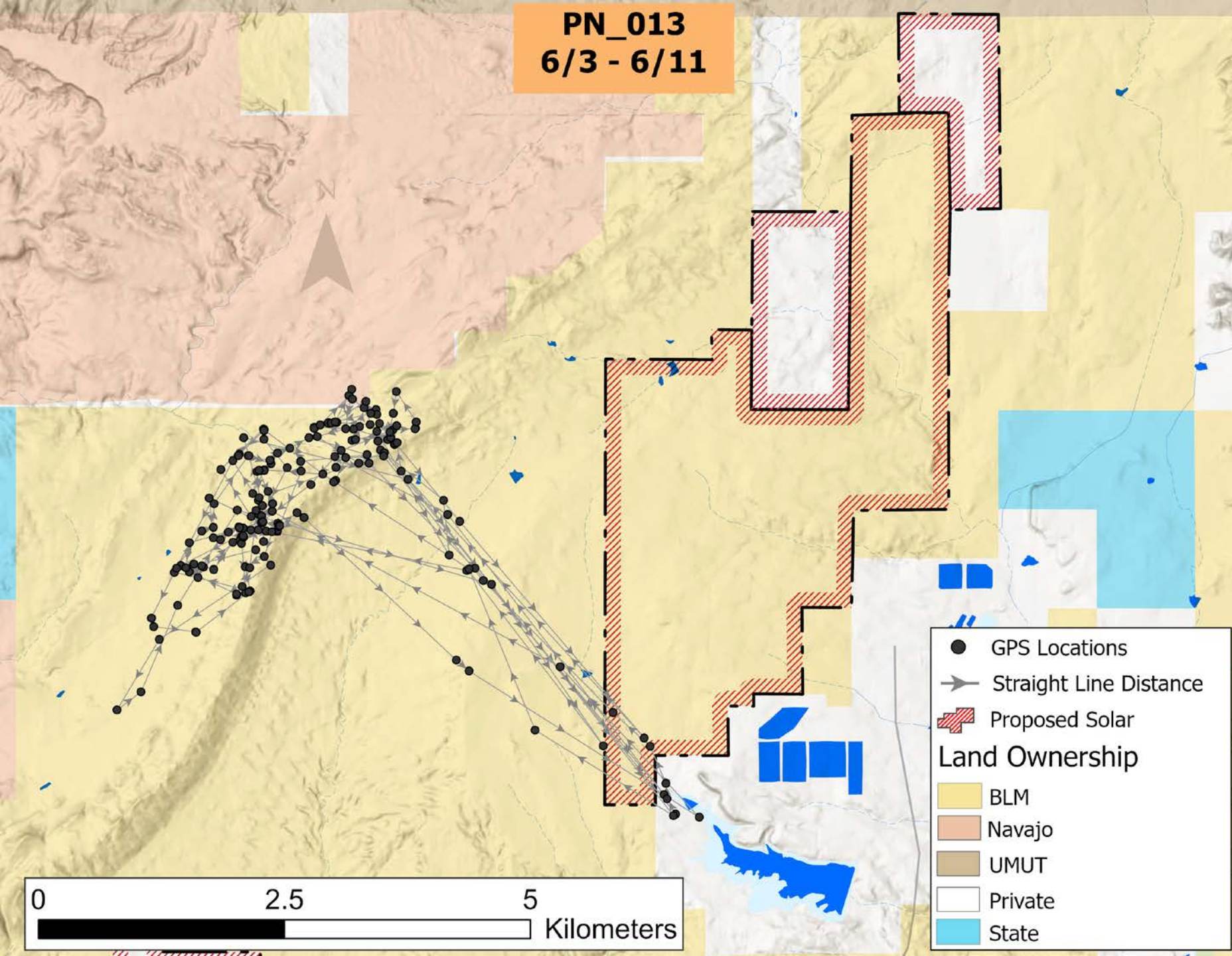






- All GPS Locations
  - ▨ Proposed Shiprock Solar
  - San Juan Solar Fencing
- Land Ownership**
- BLM
  - Navajo
  - UMUT
  - Private
  - State

PN\_013  
6/3 - 6/11





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**Wildlands**  
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