

San Joaquin Kit Fox Spatial Data at an Industrial Solar Development



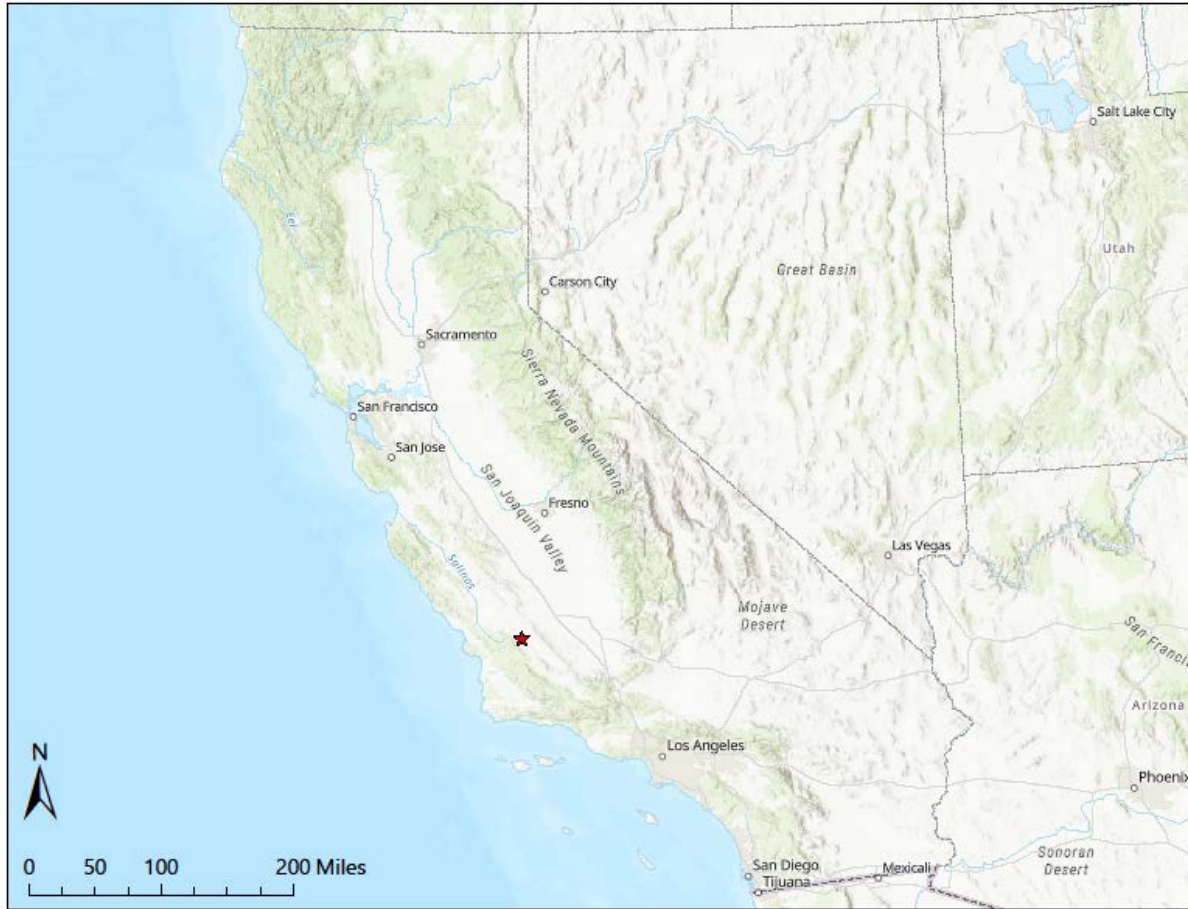
Gabriel Rudy & Mallory Patino
Althouse and Meade, Inc.
gaber@alt-me.com
malloryp@alt-me.com

Solar Energy and Species Protection

- Clean and Renewable Energy
- Sustainable
- Habitat Conservation
- Species Protection
- Ecological Importance
- Demand



San Luis Obispo County



The Carrizo Plain

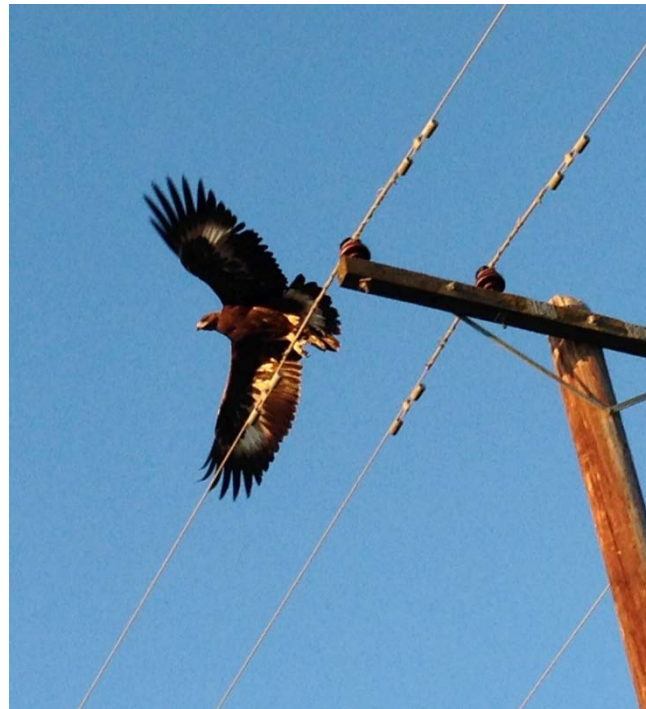
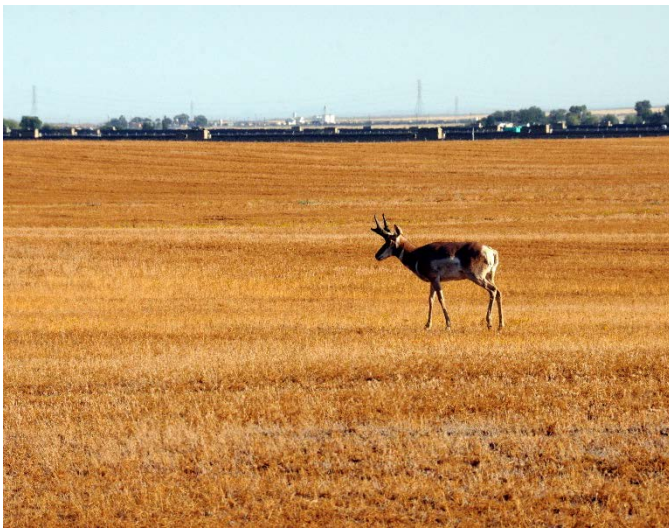
The Monument



Topaz

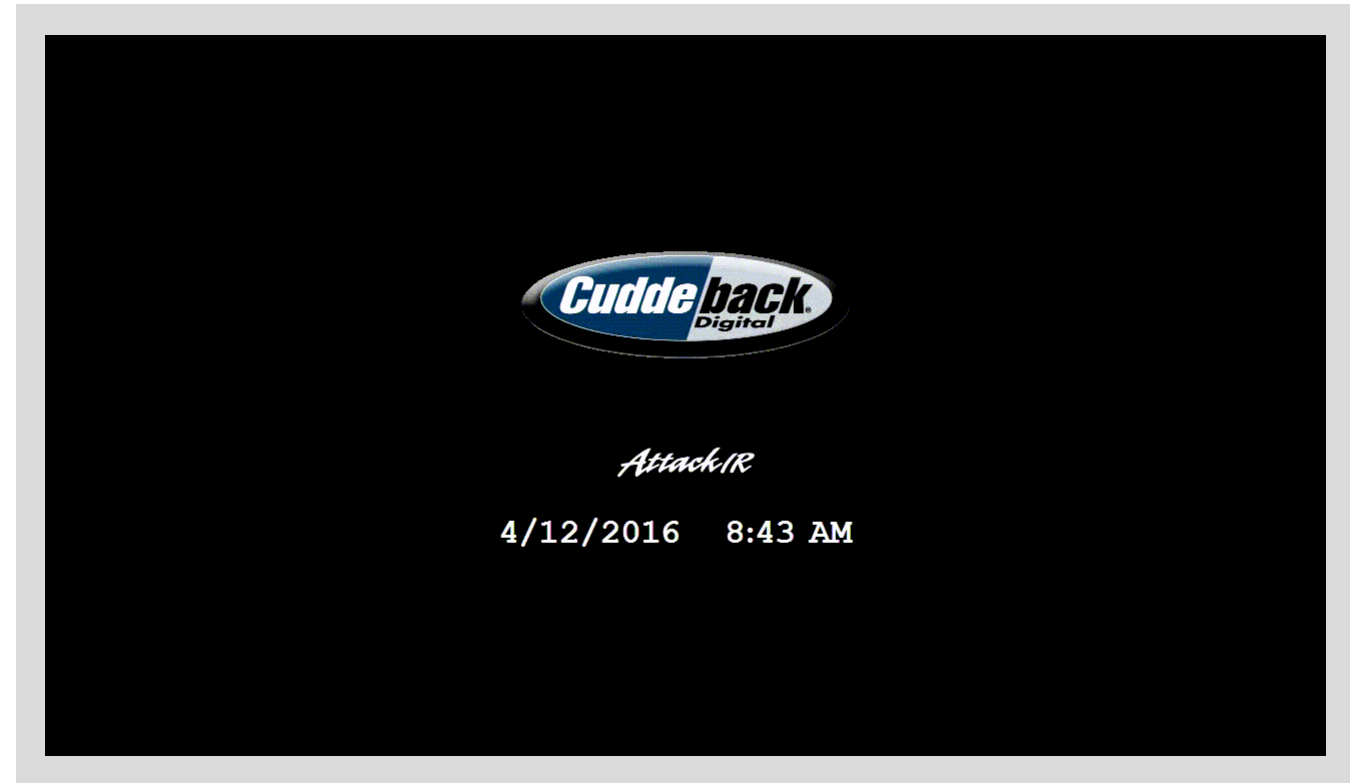


Topaz Solar Farms Wildlife



San Joaquin Kit Fox

- Federally endangered
- Bushy tail, large ears, 5lbs
- Grasslands & Solar Farms
- Primarily eats rodents
- Extremely cute

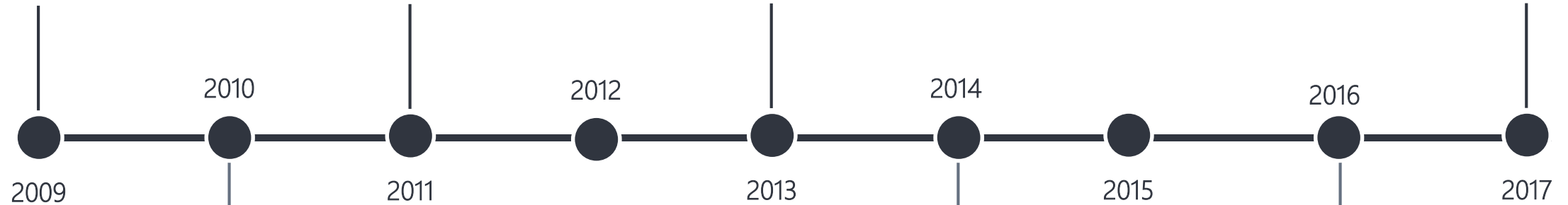


Topaz Solar Farm

Land Purchased
Topaz Solar Farm
includes over 4700
acres of land

Construction Begins
9 Million Solar
Panels

Collaring Study Ends
SJKE Collaring
Study comes to an
end in Q4 2017



Collaring Study

- 2014-2017
- Traps
 - Assigning ID
 - Health Status
- GPS Collars
- Telemetry
 - Sourcing
 - Downloading



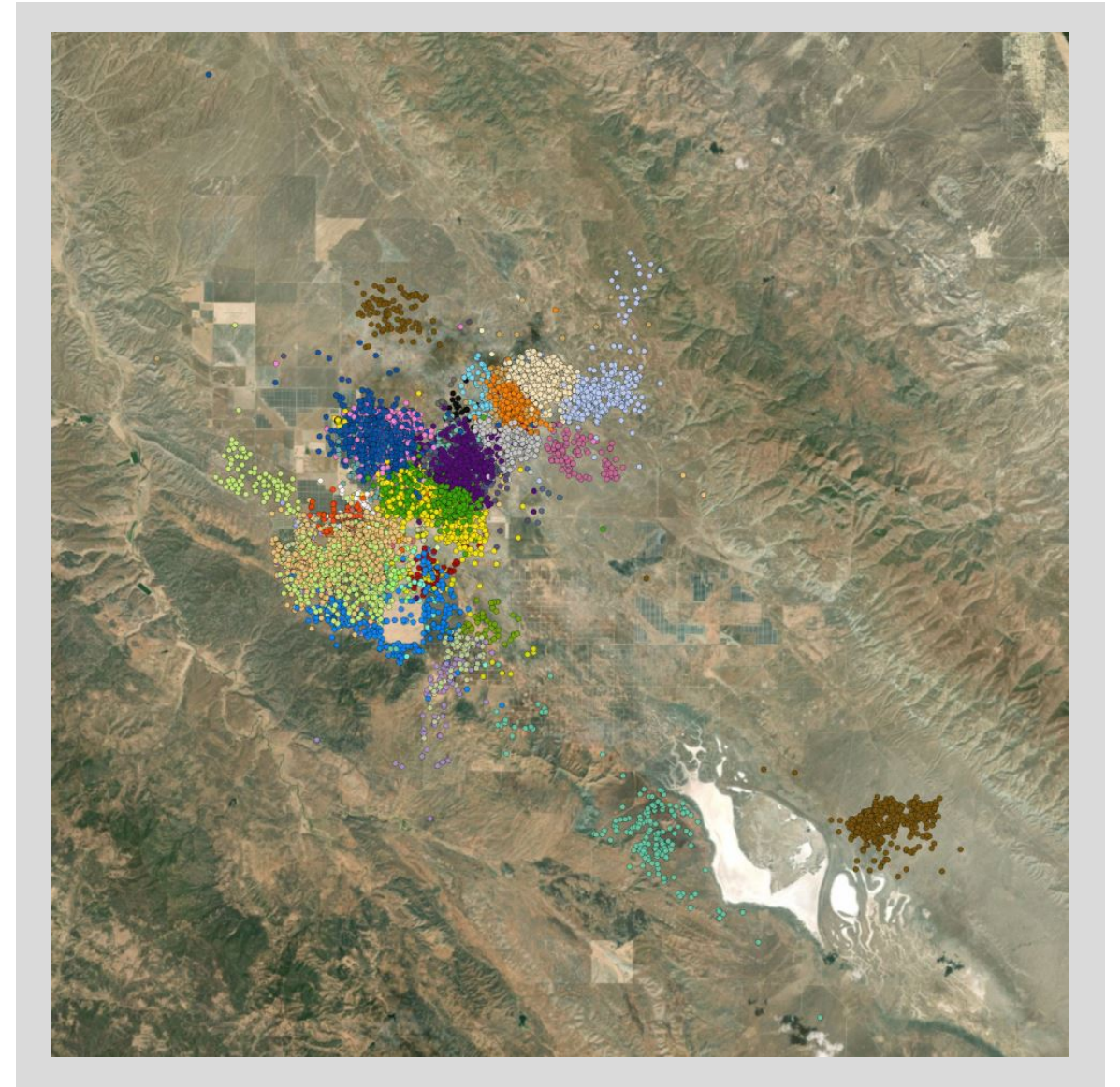
Limitations

- Dependent on sourced data
- Pinged three times at night
- Trapping/Captures
- Tracking analyst finds the shortest path

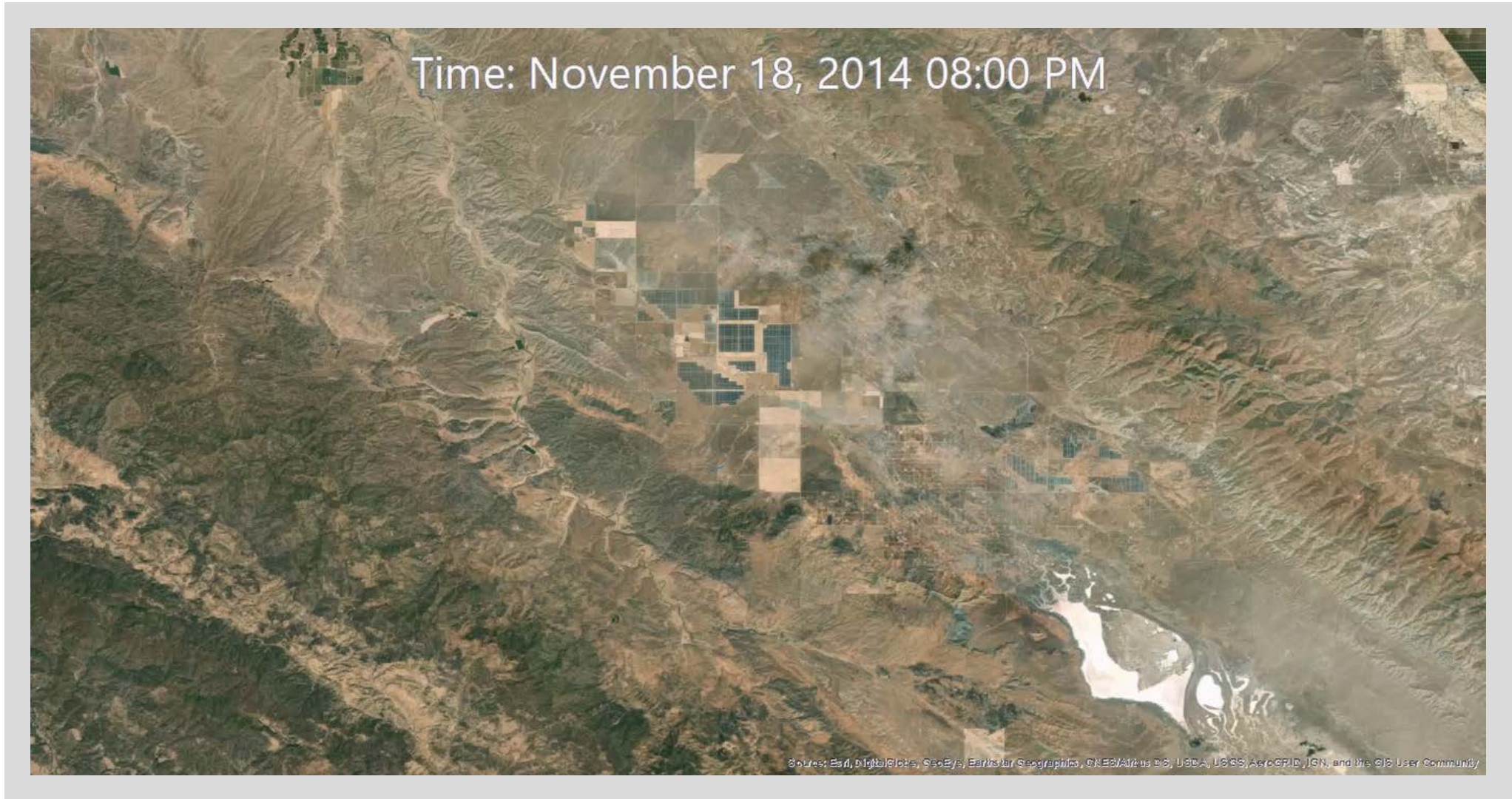


Collaring Study: GPS Pings

- 14,323 GPS points
- 43 foxes (23 Male 20 Female)
- 8 pairs of mates
- 213 captures



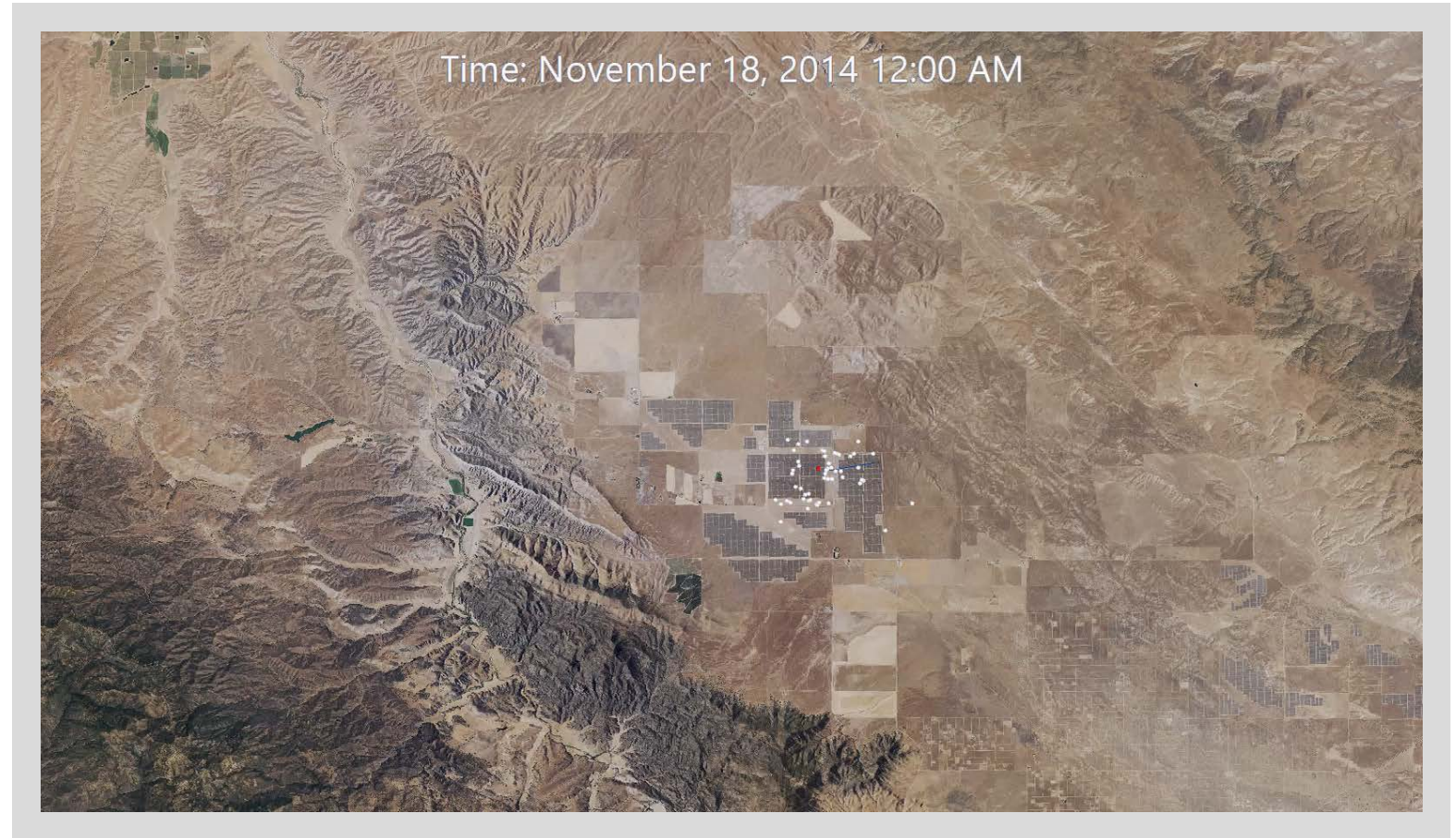
Collaring Study: Tracking Analyst





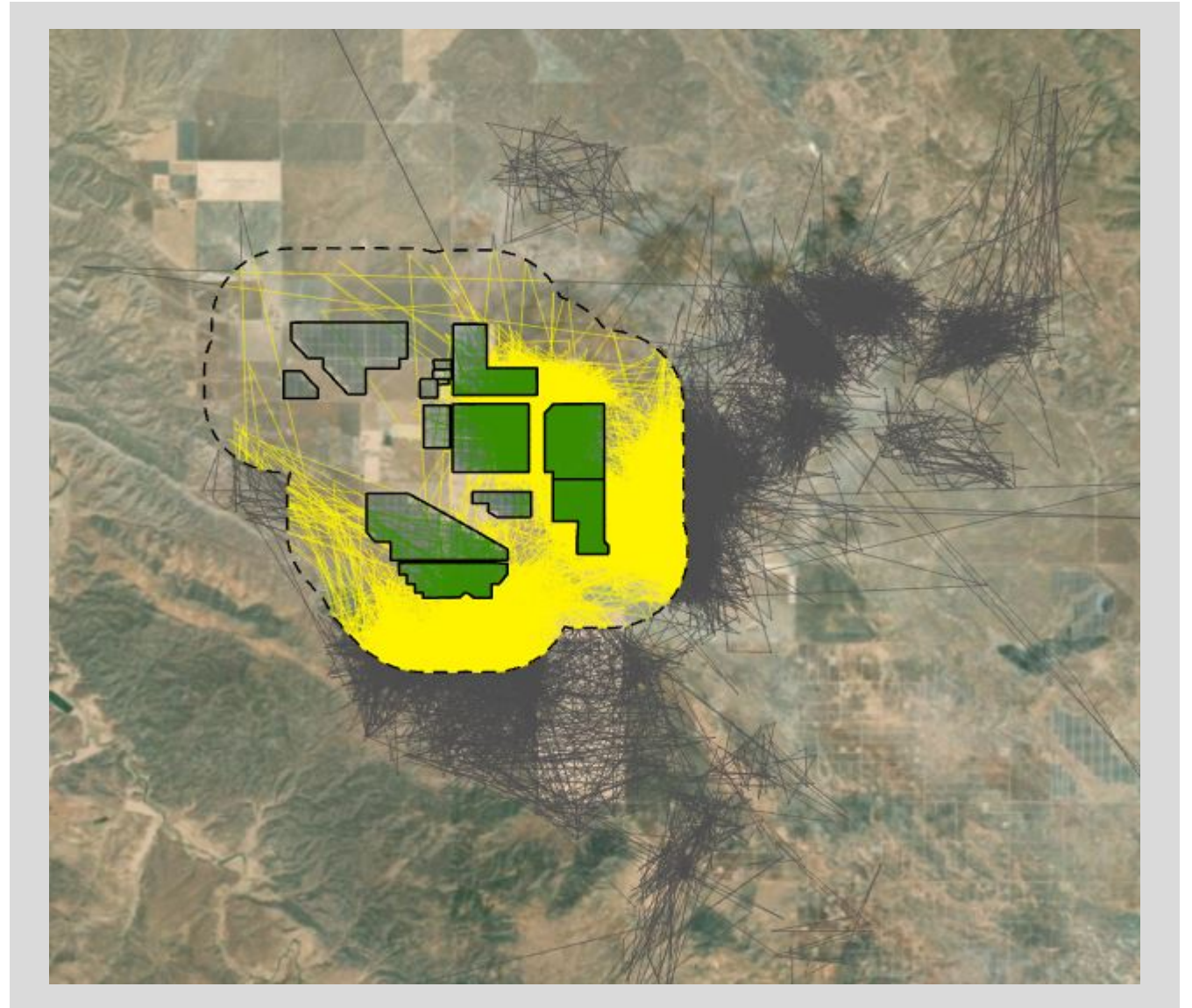
Collaring Study: Mates (Tracking Analyst)

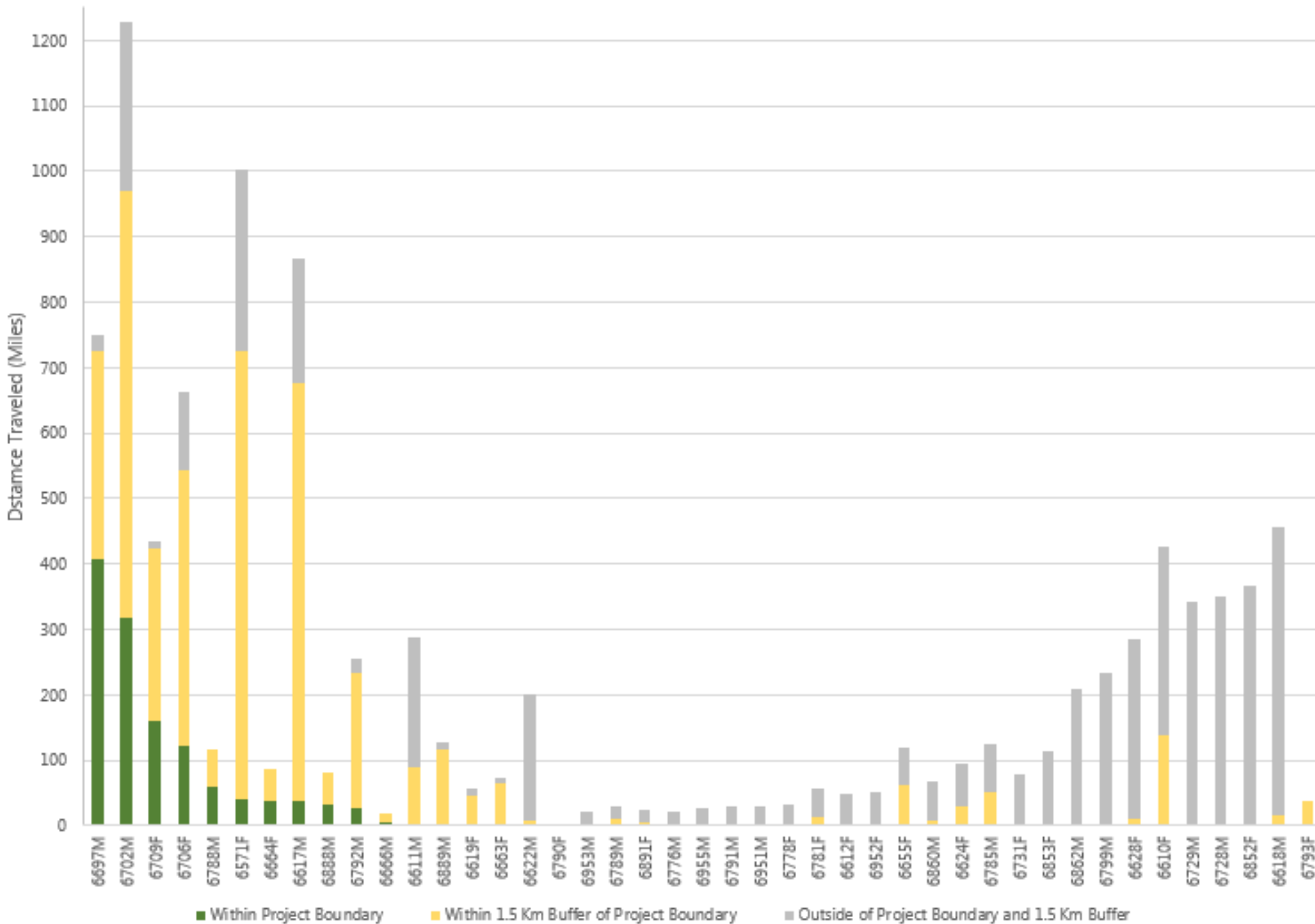
- Male 6697
 - First captured 1/13/2013
 - Last captured 5/24/2016
 - Predated on 8/4/2016
- Female 6709
 - First captured 8/24/2013
 - Last captured 12/13/2017
- Three pups in 2015
- Three pups in 2016
- Den AR13



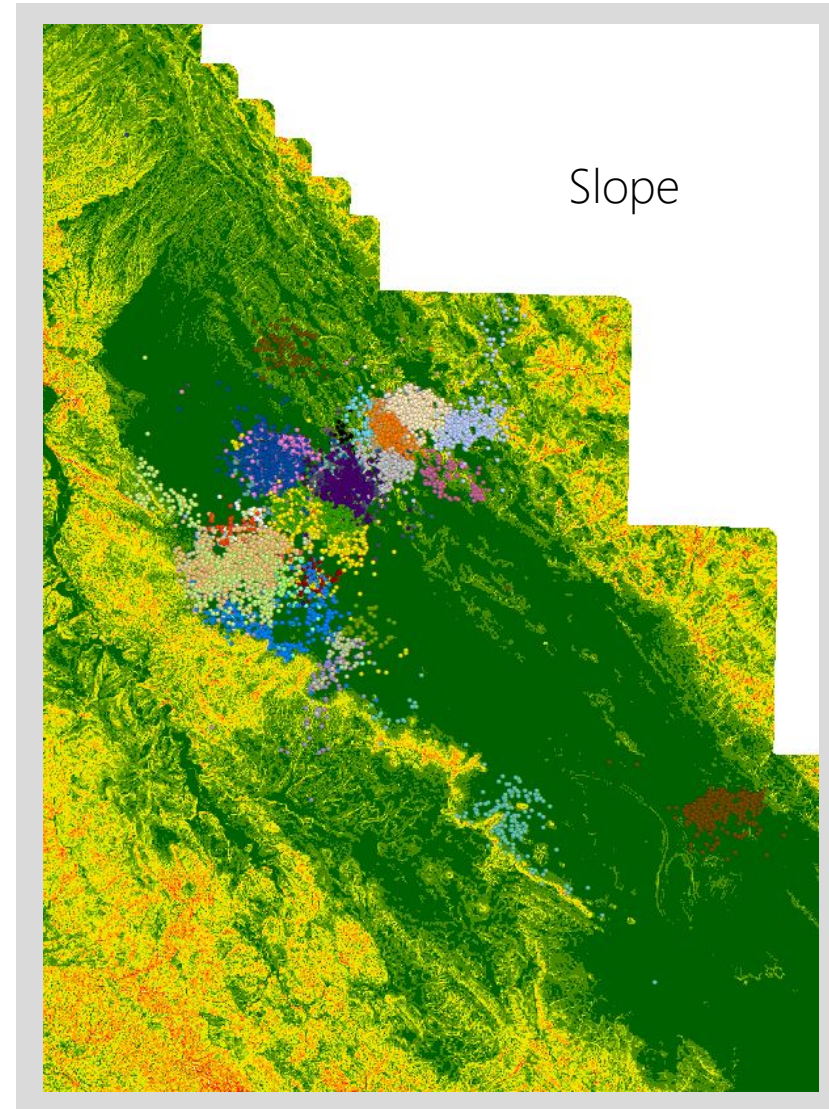
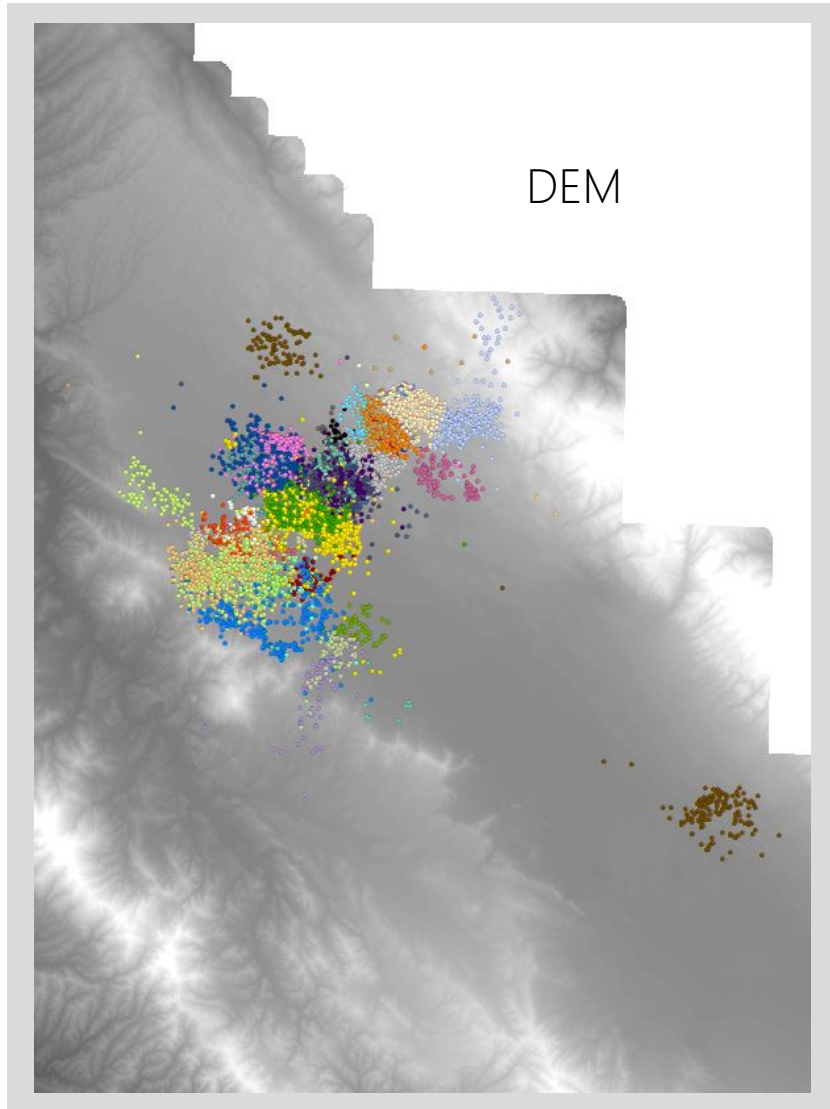
Collaring Study: Ranges

- Distance within blocks: 1257 miles
- Distance onsite: 4062 miles
- Distance offsite: 4614 miles
- Total: 9933 miles
- 50/50 GPS Points

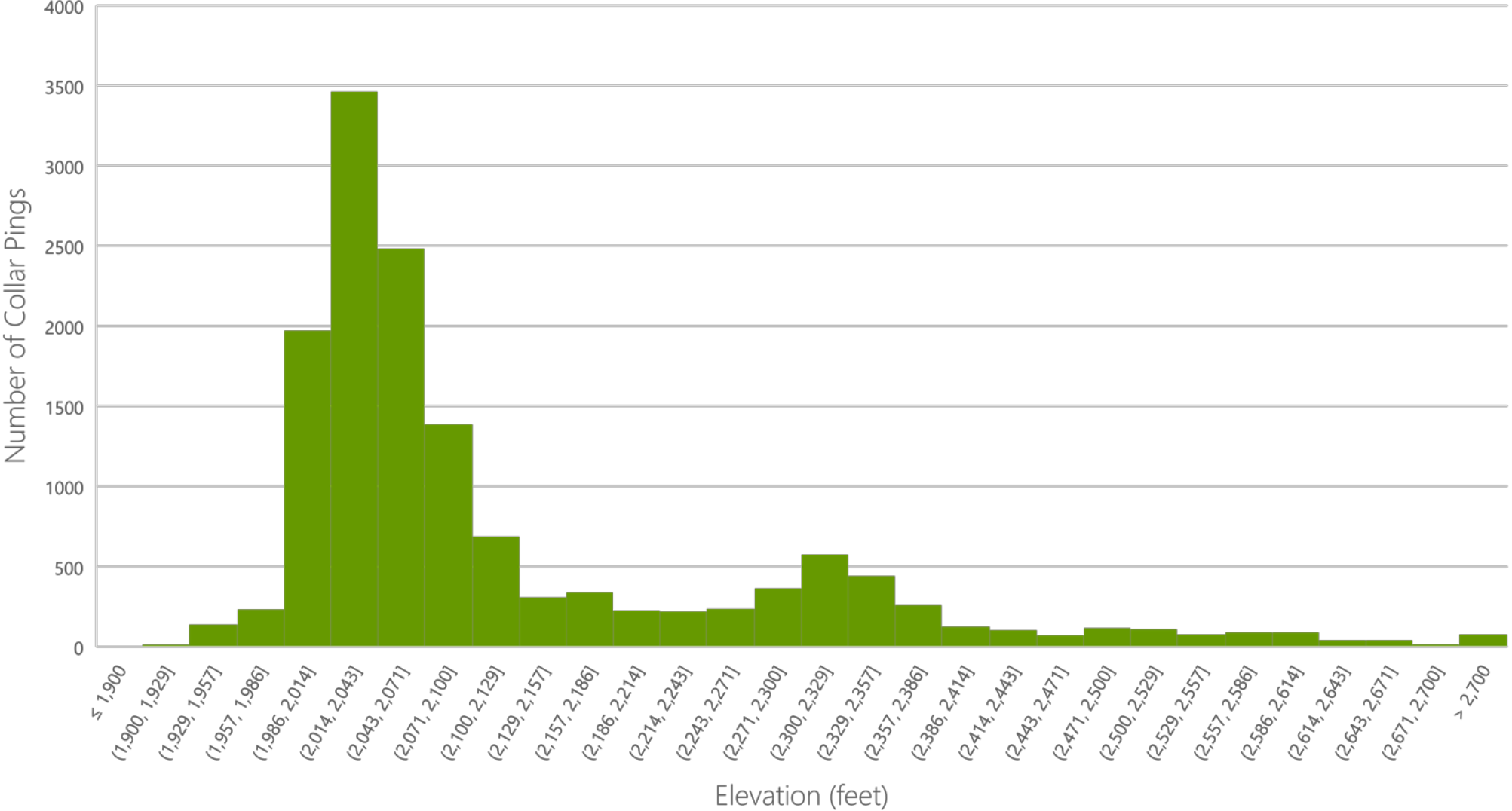




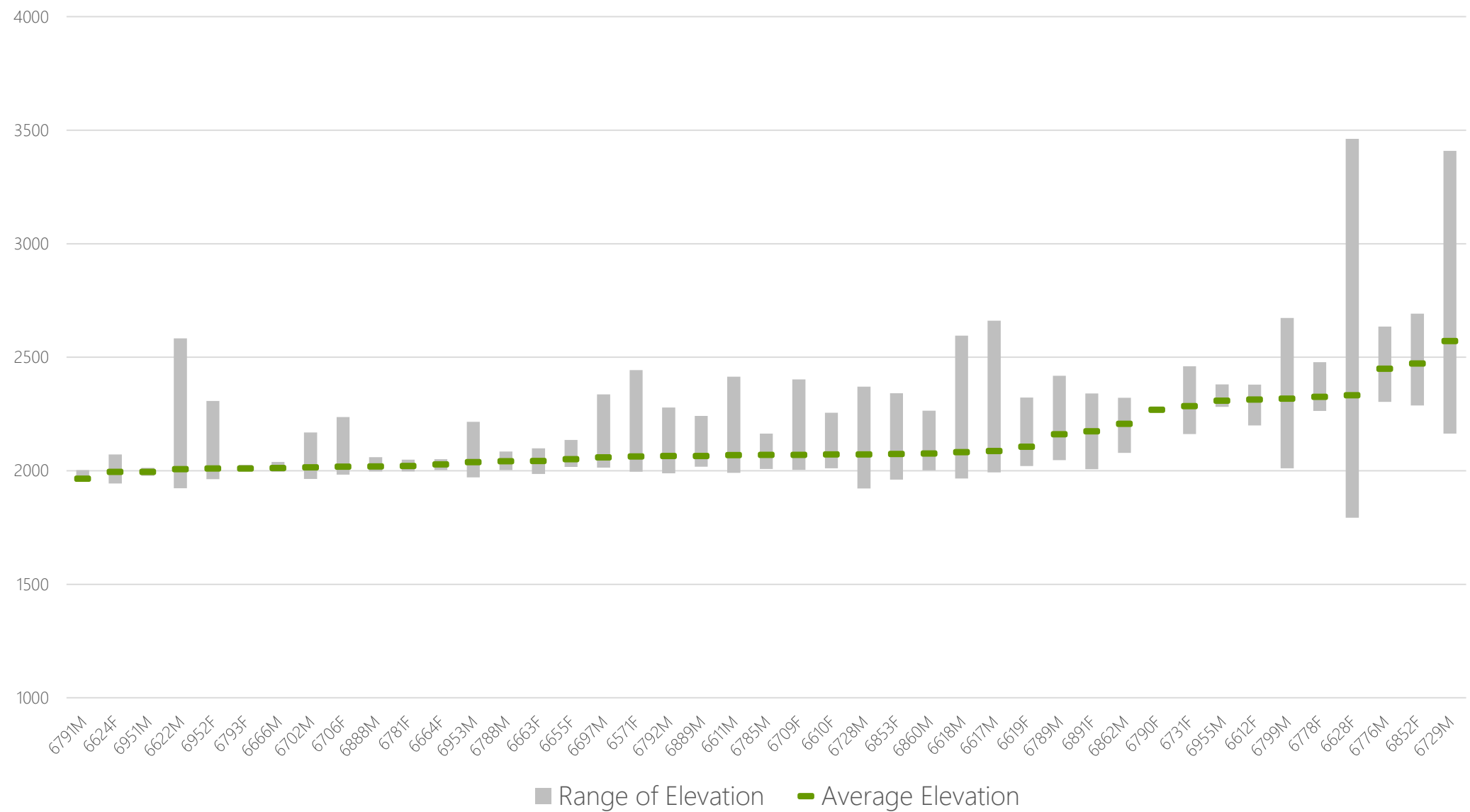
Collaring Study: DEM and Slope (Spatial Analyst)



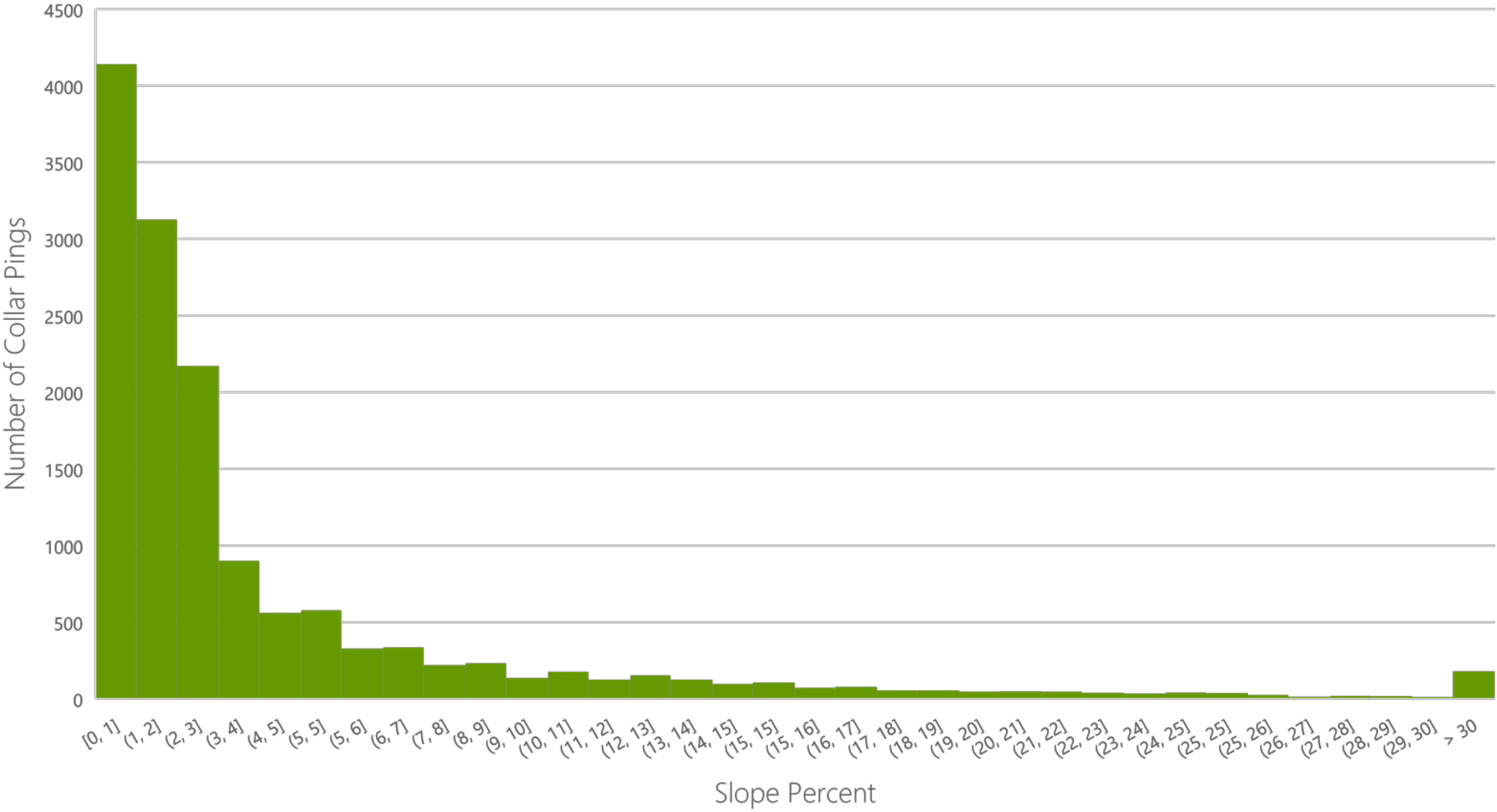
Collaring Study: Elevation (Raster to Point)



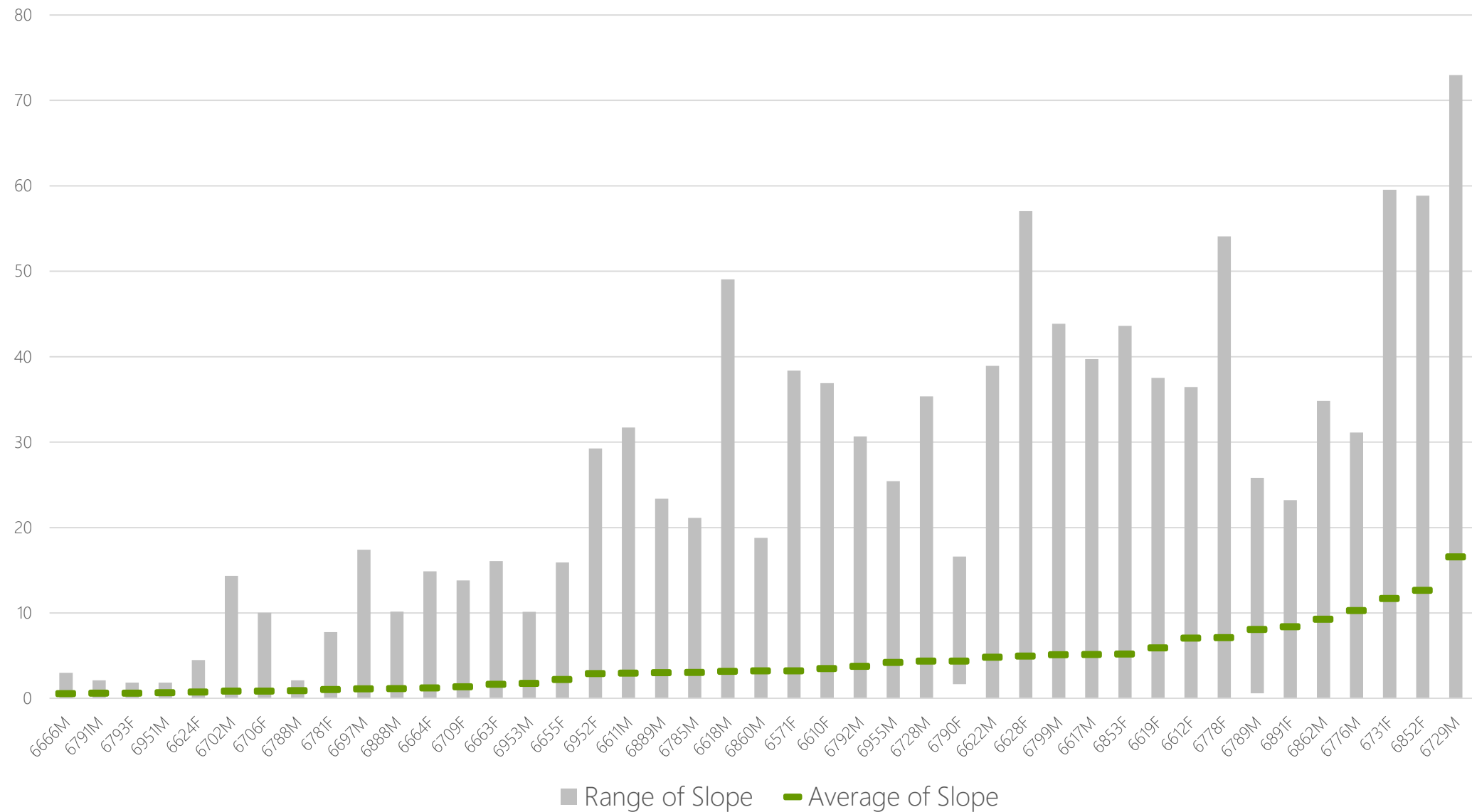
Collaring Study: Elevation (Zonal Statistics)



Collaring Study: Slope (Raster to Point)



Collaring Study: Slope (Zonal Statistics)



Collaring Study: Award Ceremony!

Mountaineer



6628F

Ultra Marathoner



6702M

MIA



6610F

Solar Star



6788M

Wildling



6852F

Rock Climber



6729M



Conclusions

Althouse and Meade, Inc.: (805) 237-9626

Mallory Patino: malloryp@alt-me.com

Gabe Rudy: gaber@alt-me.com

