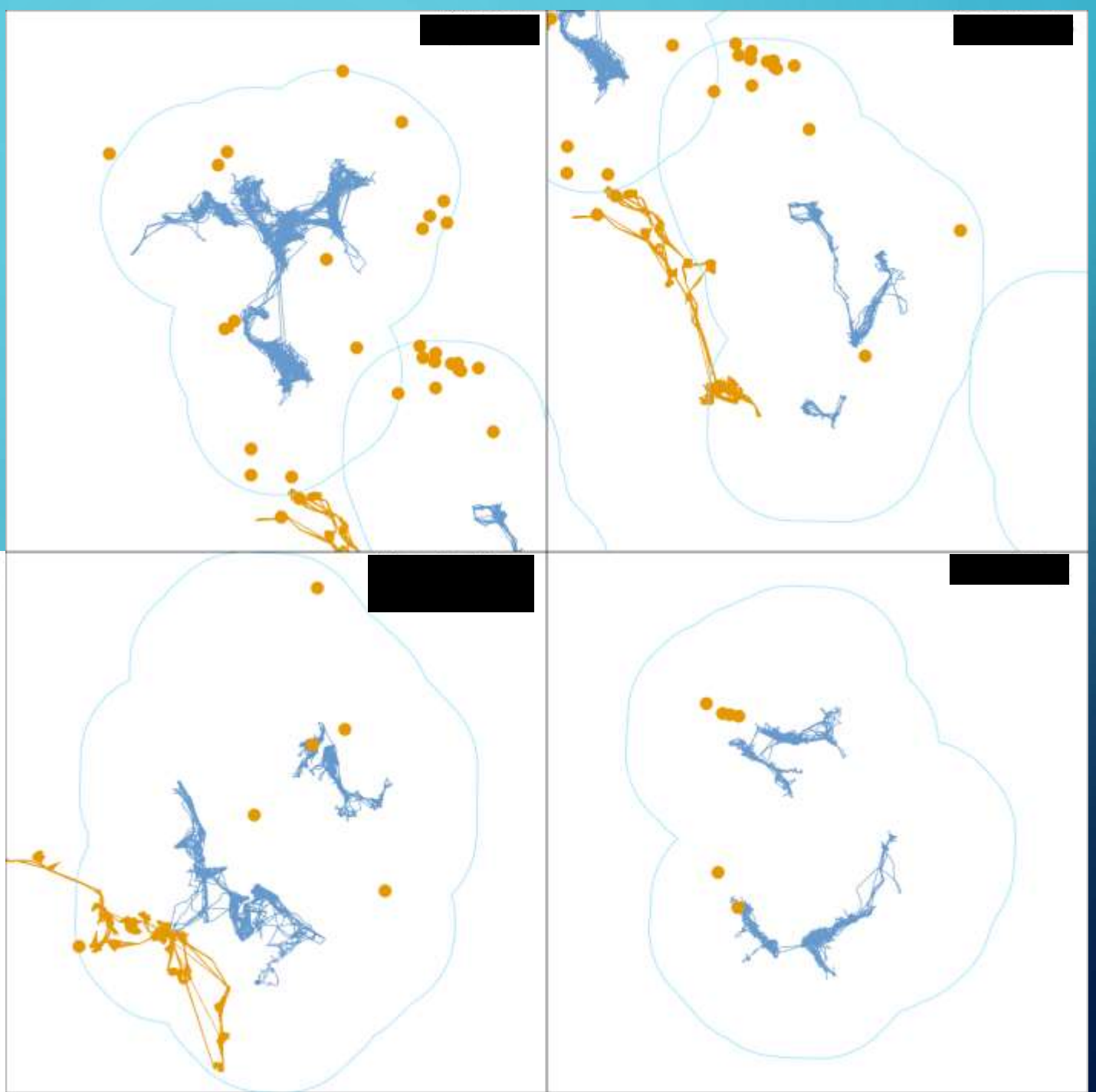# NEW AND EMERGING TECHNOLOGIES

BRENT ROEDER

MONTANA STATE EXTENSION SHEEP AND WOOL

PERC COUNCIL, ASI 2025 SCOTTSDALE
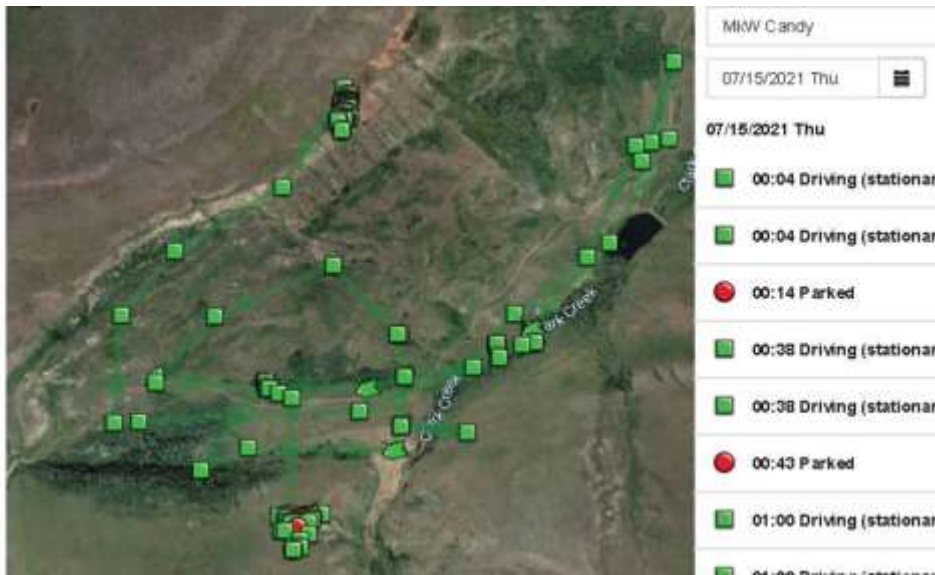
Bighorn Domestic Sheep Comingling Research
475 Lotek Collars deployed on BHS, Domestics and LGD
Geofencing properties
Collars are several thousand $
Dec 2023 – July 2024

Bighorn Sheep
Domestic Sheep
Domestic Sheep or Goats (operation centroid)
Study Area

LONESTAR TRACKING AND SPOT ON VIRTUAL FENCE

- Spot On Operates on satellite system, moderately expensive, but cheaper than a lawsuit, no location history, battery life of days, effective virtual fence.

- Lonestar Tracking operates on cellular system, relatively cheap, location history and travel speed, battery life for many months.

VIRTUAL FENCE FOR SHEEP

- High cost when adopting cattle technology at a 6 to 1 AU ratio.

- Needs have a three-month battery life.

- Needs to have a good cell app with integrated AI that sends alerts.

- May never get to a solar powered, re-usable, satellite or Starlink operated ear tag.

- Average herder costs approximately $45,000/year for 1200 ewes.

- $37.50/ewe/year at 4.5 years/ewe=$168.75 cost/ewe lifetime.

- Current commercial system Vence would be $70.83/ewe setup and $50/year=$306.94 cost/ewe lifetime if you collared all 1200 ewes.

GAME CAMERAS AND THERMAL SCOPES

- Game cameras are cheap investment in knowing what, when and were predators are.

- Prices for thermal and night vision scope are coming down rapidly and are an effective tool being widely used for predator management.

HANDLING EQUIPMENT

- **Producers who make the investment in handling equipment seem to have more interest in the next generation taking over.**

DATA COLLECTION

- Barcode scanner linked to scale to collect TSU data for DNA samples.

- Stick reader linked to Bluetooth printer to follow fleeces with bar code.

- OFDA2000 connected to a scale to collect wool data and weight for NSIP. Max 120/hr.