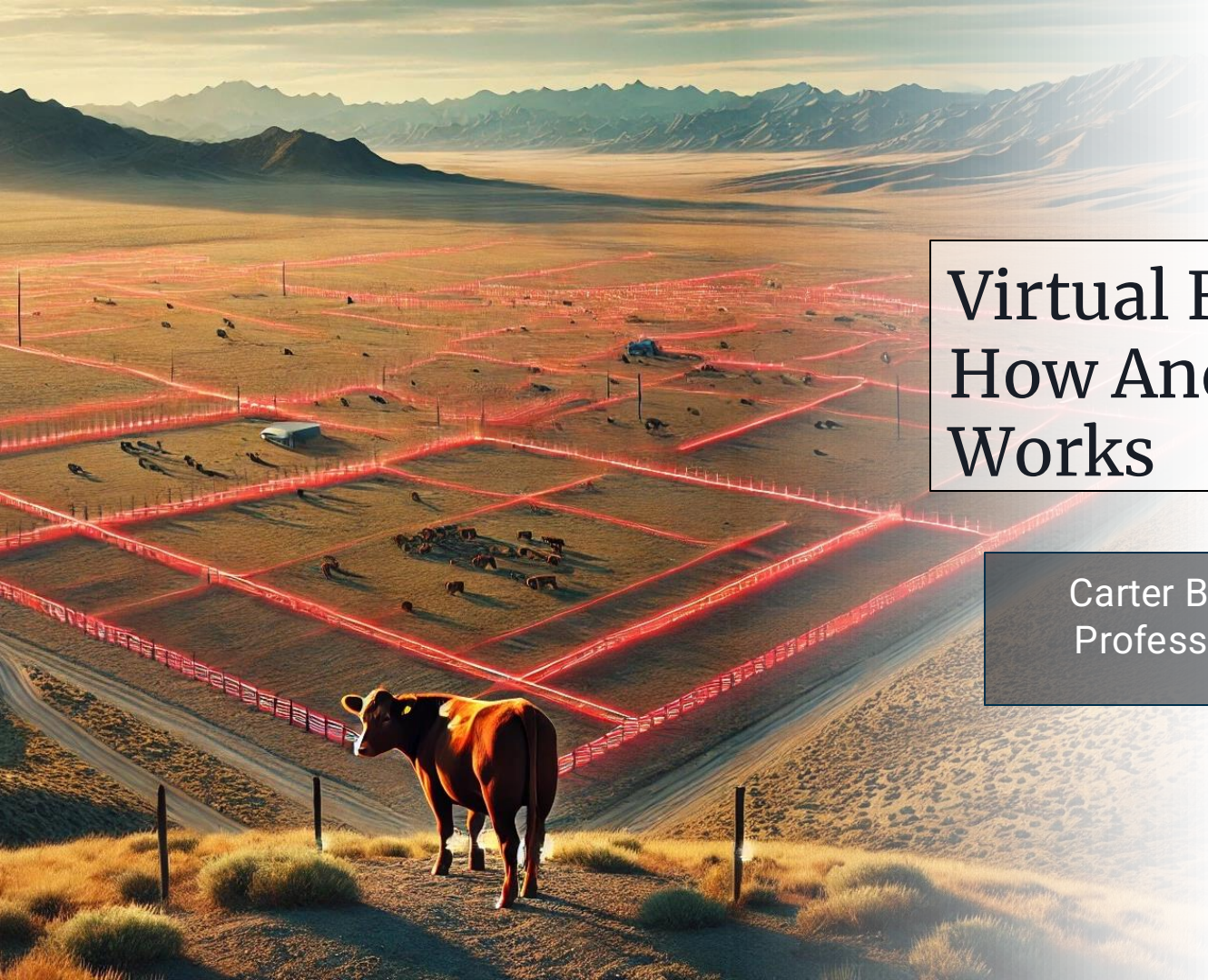
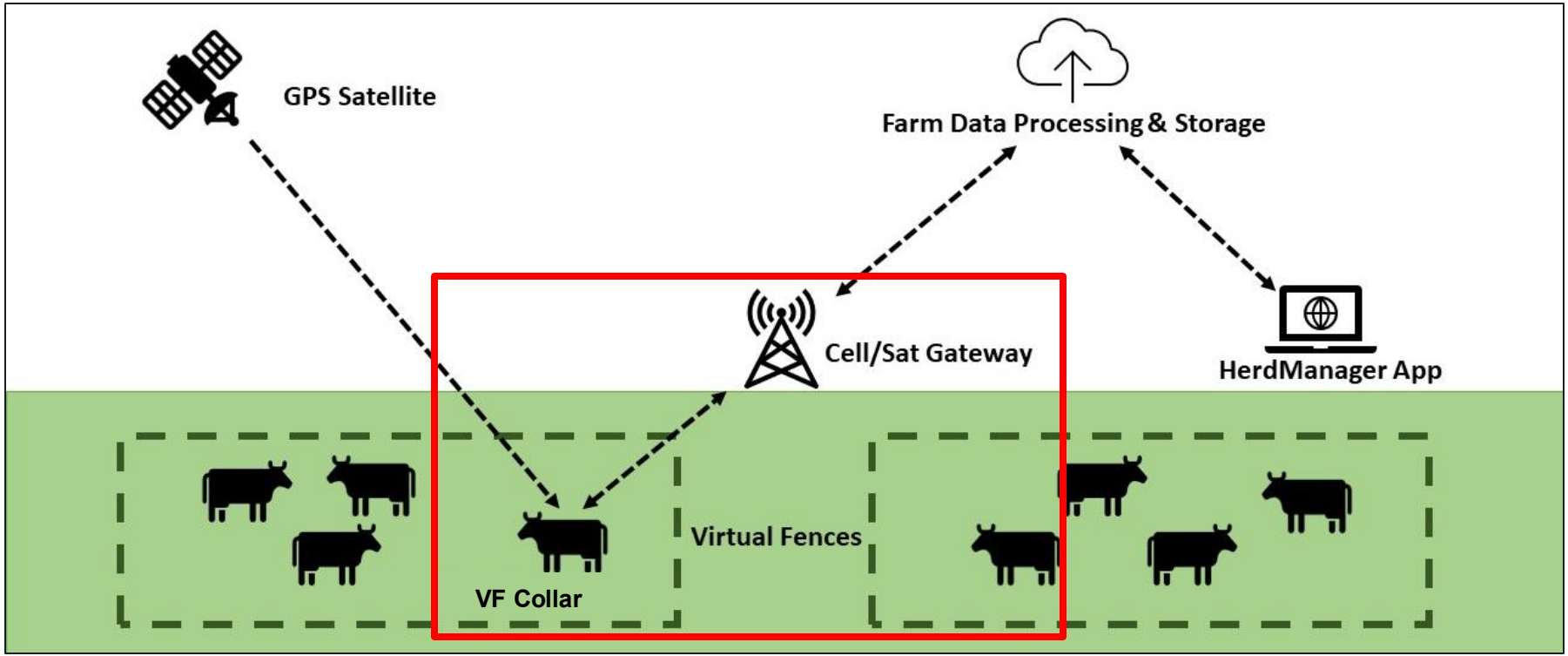


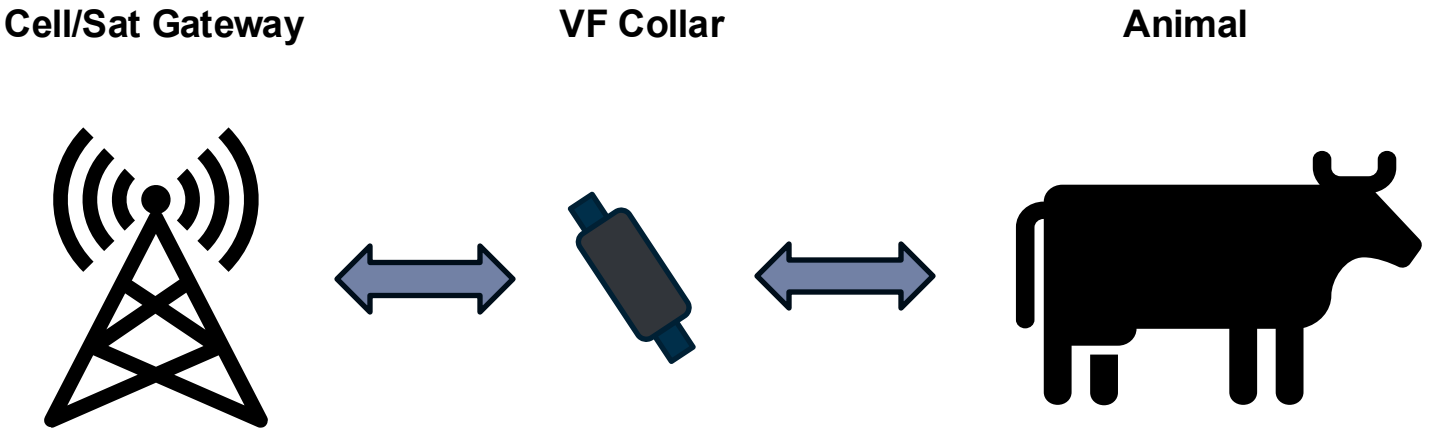
Virtual Fencing 101: How And Why, It Works

Carter Blouin, Research Professional, UArizona

Components of Virtual Fencing

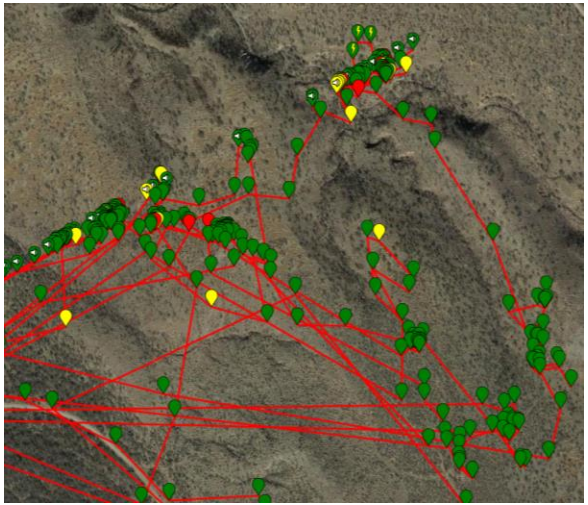


Components of VF: How They Communicate



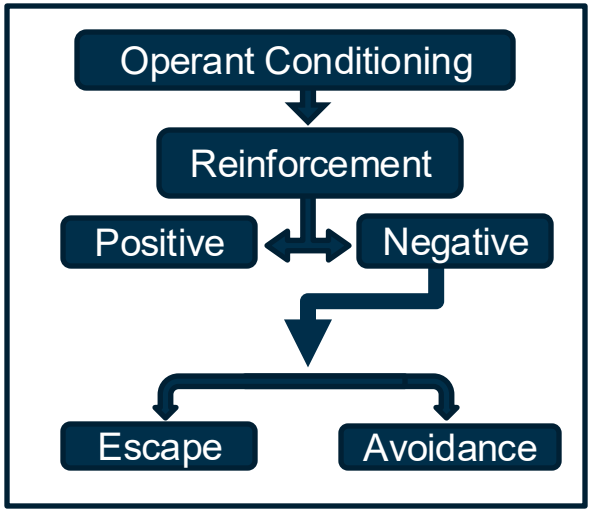
Components of VF: Animal Interface

Collar GPS Location



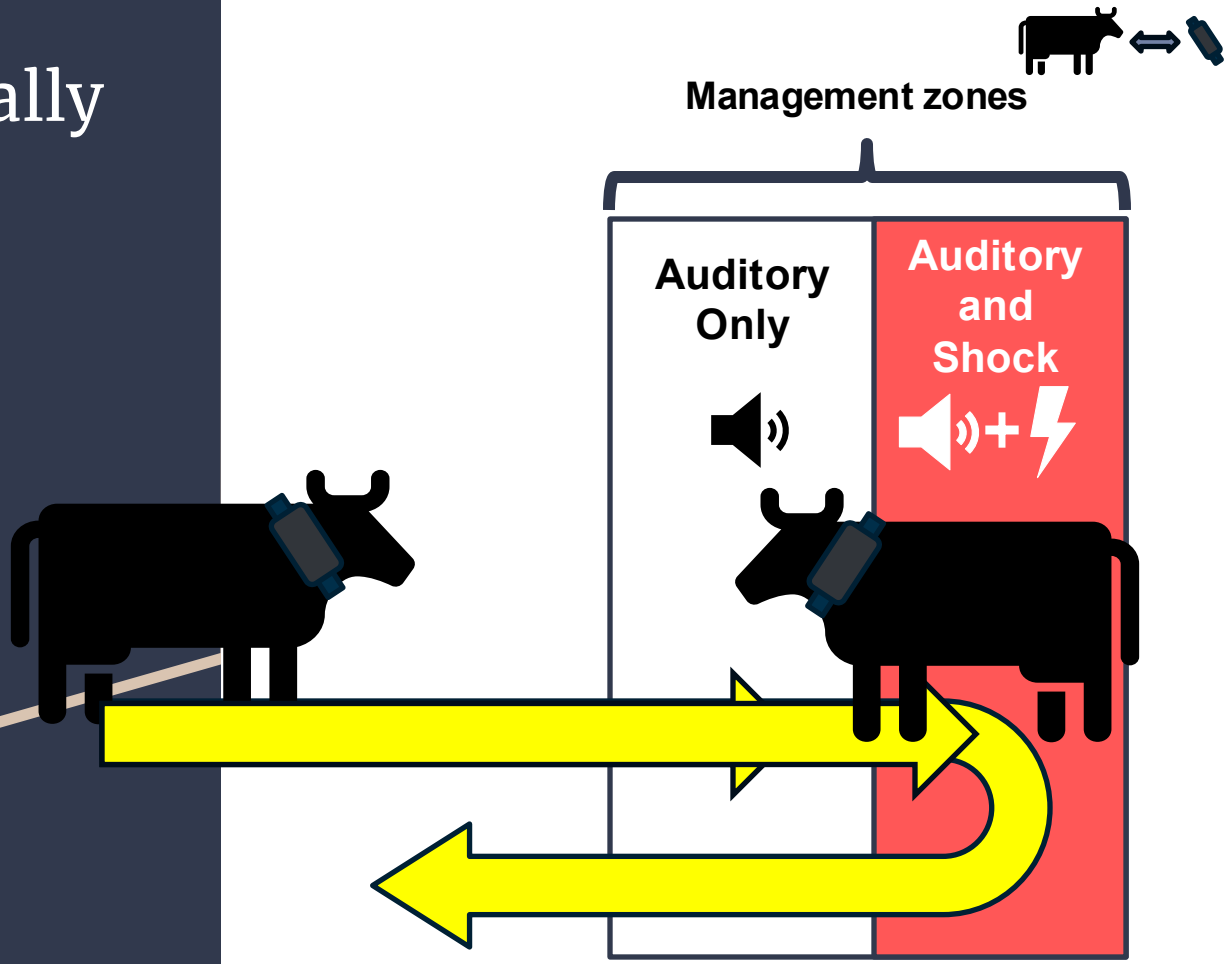
Programmed GPS Boundary

Animal Behavior

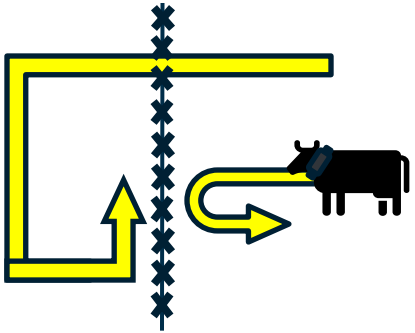


But how does it really work?

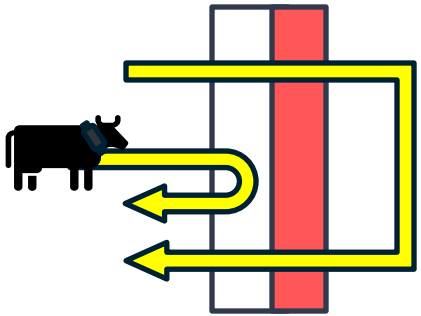
- The virtual fence systems work by associating **auditory and electrical stimuli**
- Trained animals learn to **avoid** fences when prompted with an auditory cue.
- Using an animal's GPS information in relation to the fence boundary, **pressure** can be applied opposing movement through the barrier.



Physical Fencing Vs Virtual Fencing



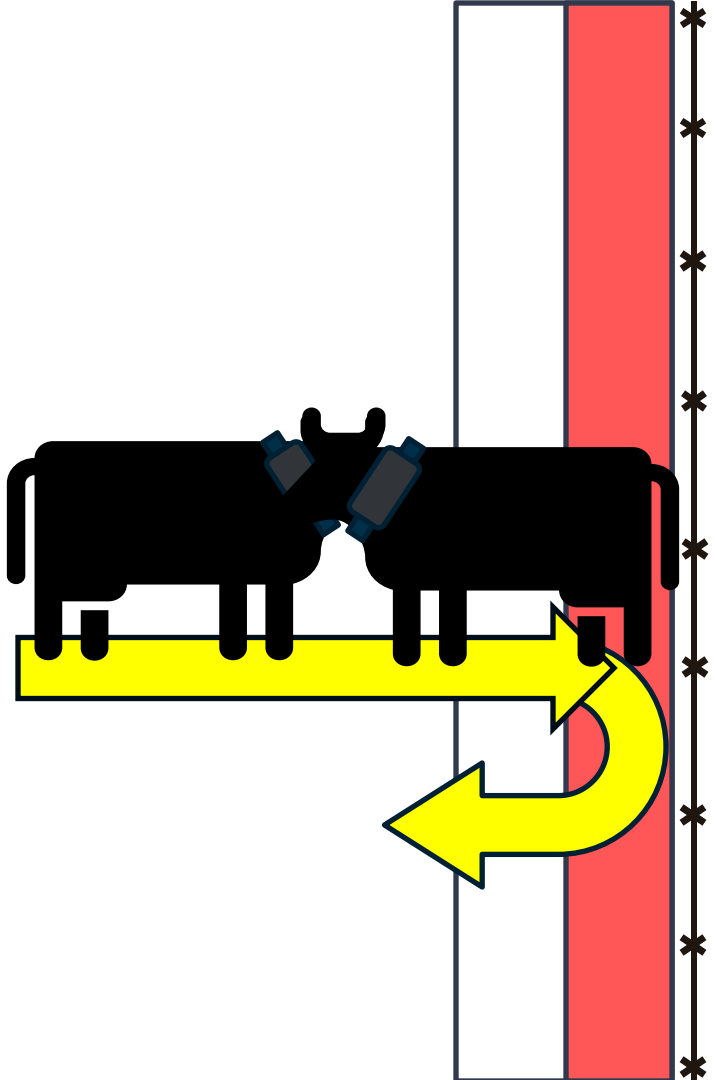
- Nearly 100%
- Potential for entrapment



- Less than 100%
- No risk of entrapment

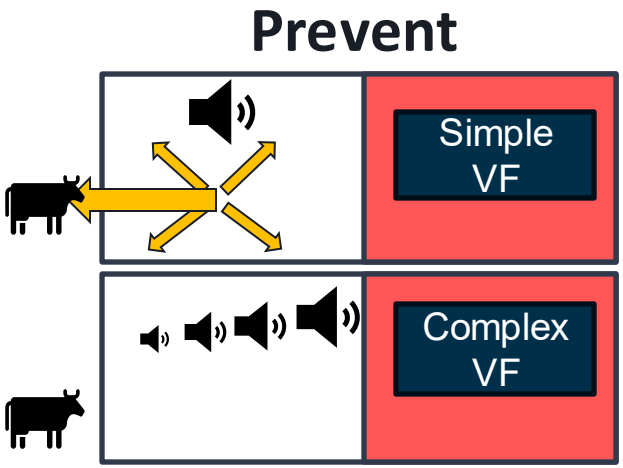
Training

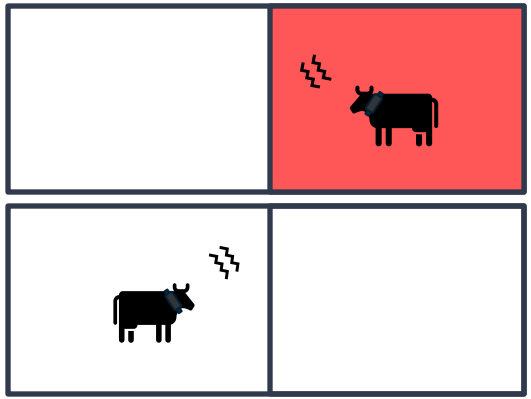
- Location of training
  - Perimeter to area ratio
  - More fencing per area
- Time for training
  - Vender specific
- Variation in expectations depending on collar provided information
  - More information = clearer communication of sound shock relationship

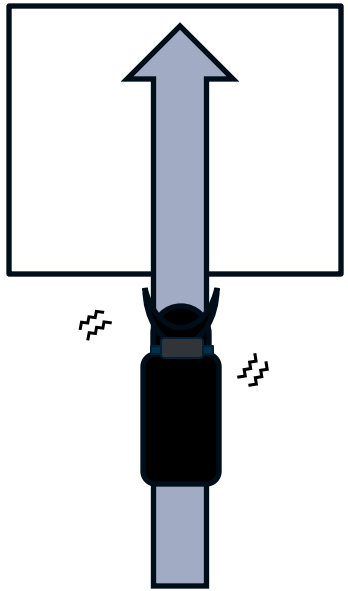


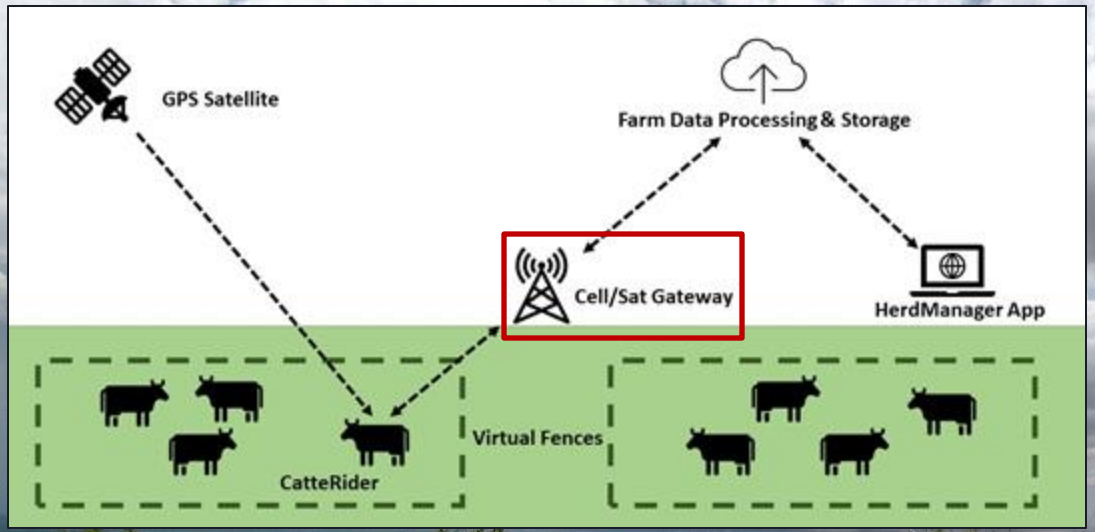
Differences in VF Approaches

- Prevent and Promote
- Audio and Vibrations
- Verify with Vender to know what you're working with



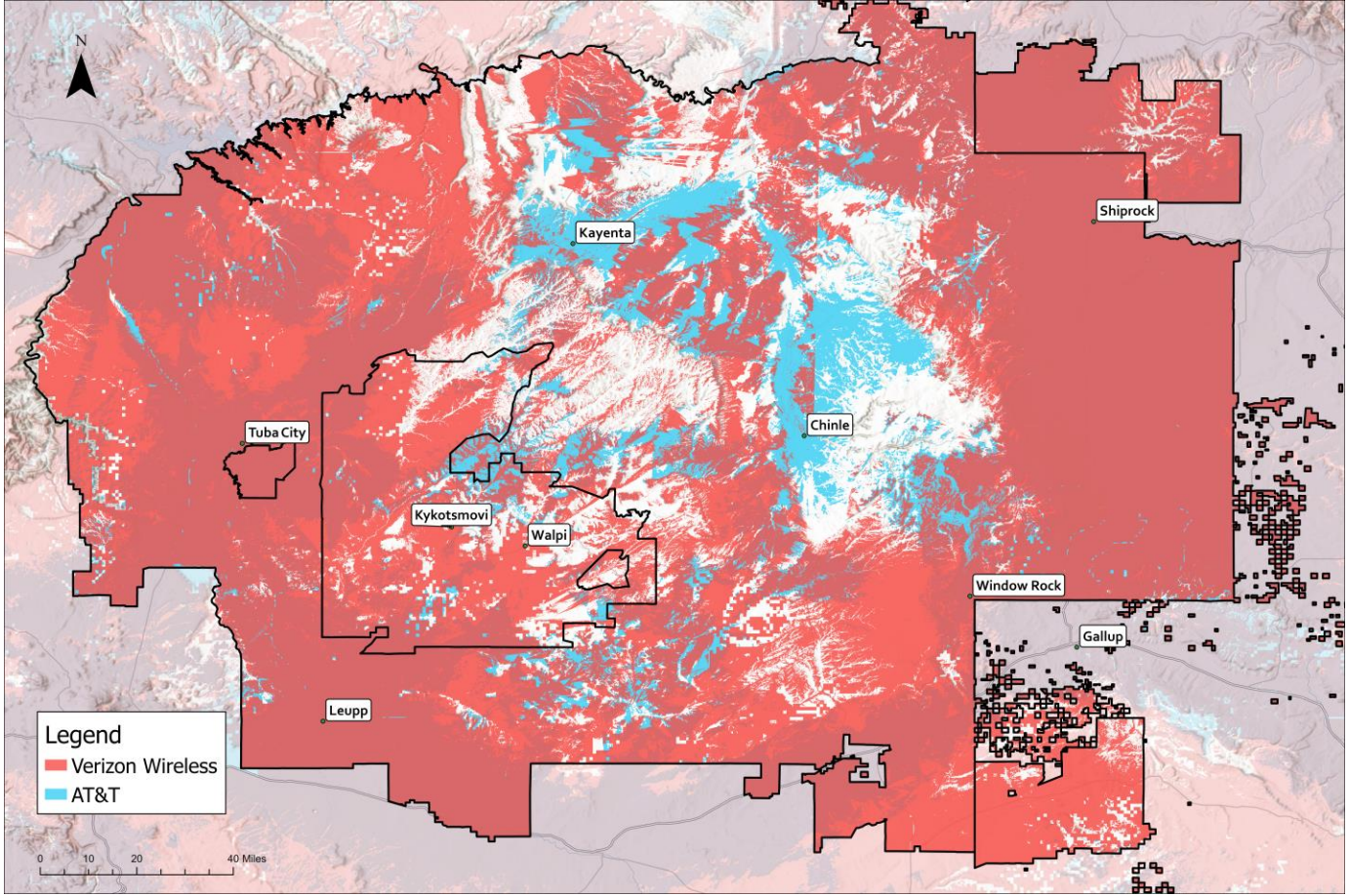




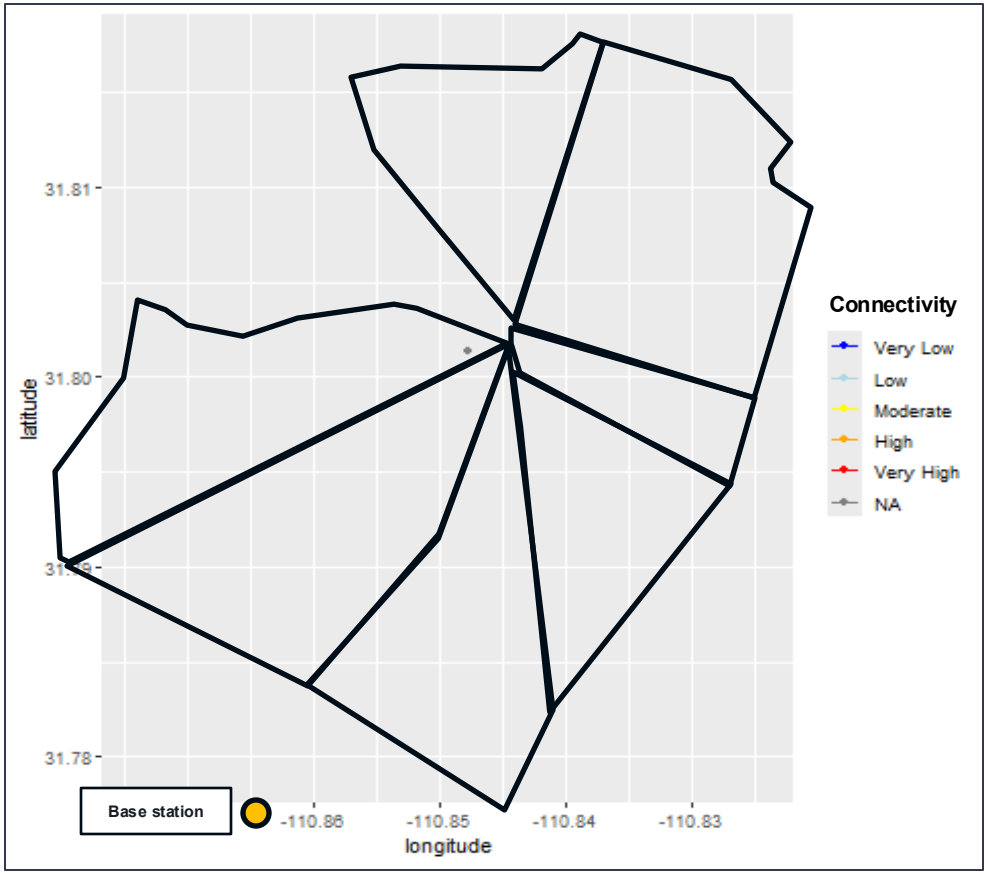


Gateway Placement

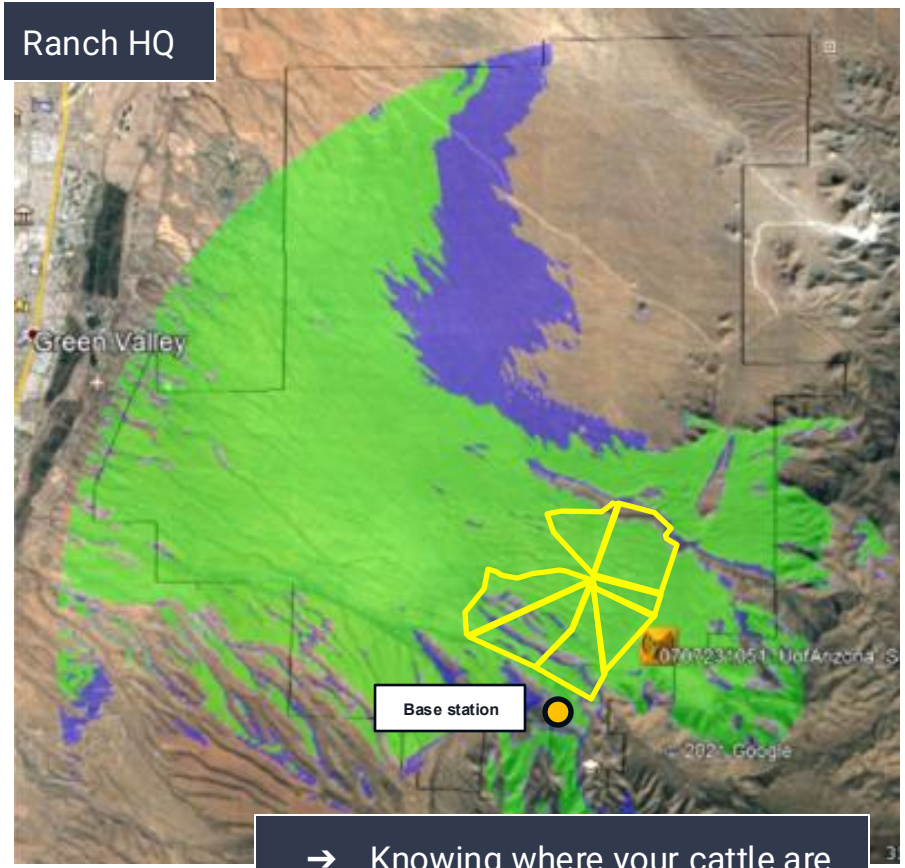
- Cellular Service
- LoRa connection



AT&T and Verizon Arizona Coverage Map



Ranch HQ



- ➔ Knowing where your cattle are
- ➔ Exclusions
- ➔ Separating existing pastures
- ➔ Remotely moving your herd

LoRa Coverage and Topography

Welfare Concerns

- Electrical cue can be disabled manually
- Built in safety protocol
- Creates acute stress
- Electrical cue did increase heart rate but returned to normal after 30 sec to 4 min
- Goal is to avoid chronic stress

- Properly train animals
- Create predictable, controllable, and consistent relationship with VF to avoid chronic stress
- Avoid sharp angles or corners

The University of Arizona

Virtual Fence Program

THE UNIVERSITY OF ARIZONA
Arizona
Experiment Station

Cooperative Extension

COLLEGE OF AGRICULTURE, LIFE & ENVIRONMENTAL SCIENCES
Natural Resources
& the Environment

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