

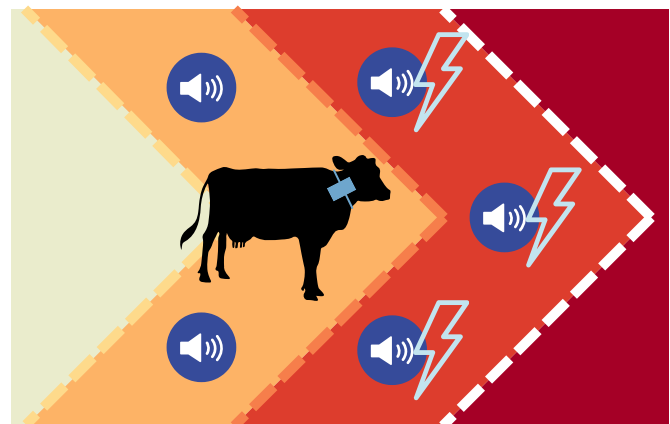
Foundations of Virtual Fence: Complexities and Challenges

Considerations

Virtual fence (VF) systems are complicated. Special consideration is needed when designing boundaries, managing incentives, and gathering livestock with VF systems.

Fence Design

- **Simple designs** (straight lines, no acute angles) reduce confusion and increase compliance
- **Avoid placing boundaries near key infrastructure** (water, gates) to prevent negative associations
- **GIS accuracy is critical** to avoid errors in VF placement



Livestock may enter the exclusion zone if **strong incentives** (e.g., water, forage, calves) exist outside the grazing area

Strategic placement of incentives inside the grazing area improves compliance

Passive Capture

VF can support livestock gathering by guiding movement through one-way VF boundaries. However, it requires proper planning as updates to VF boundaries are not instantaneous.

For more information, read *Exploring the Complexities and Challenges*

Access VF resources at rangelandsgateway.org/vf

Developed by the University of Arizona with supported from
USDA NIFA WSARE (WPDP22-016) and
AFRI IDEAS (2023-68014-39715)

