Extensions roll in Alternatives to Post Fire Recovery and Infrastructure

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Situation Statement

In 2022 New Mexico experienced not only the largest, but second largest wildfire in state history. The Black Fire burned 325,133 acres of the Gila National Forest directly affecting nine active permittees with livestock and approximately 90 miles of fence. As the dynamics to wildfire intensity and size continue to grow and change, so does the recovery efforts to the landscape and livestock producers. Ranching operations are extremely dependent upon the infrastructure available to provide water and management for their livestock. Not only is the cost to repair or replace damaged infrastructure at an all-time high, but the labor to do so is becoming more difficult to find.

2022 Black Fire

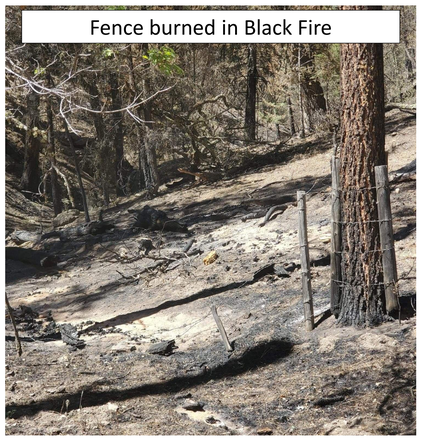
Program Purpose

To determine needs and find alternative solutions for livestock producers on USFS Lands following the 2022 Black Fire to allow them to continue grazing cattle.
Challenges faced by livestock producers:

- Cost to repair fences ($25,000/mi); Total over $2.4 million
- Difficult to manage cattle if infrastructure is not in place
- Ranchers may not be permitted to graze allotments if fences are not up to provide rotation
- Timeline for contracting fence reconstruction could take years

Firefighters wait while cattle are removed from allotments.

Hauling hay for cattle in containment areas.



Fence burned in Black Fire

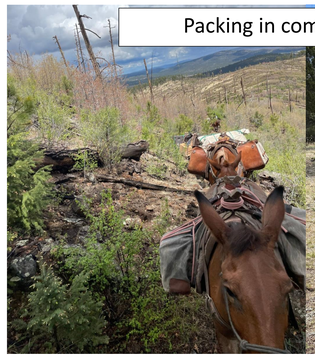
Melted 5000 gal Storage Tank

Program Details

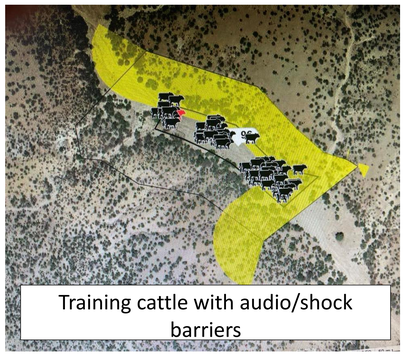
Upon identifying the need during initial fire recover meetings, a Rapid Response to Extreme Weather Events across Food and Agriculture Systems program grant was obtained through USDA NIFA #2023-68016-38885. Multiple meetings and trainings were conducted to educate ranchers on the opportunities offered through precision agriculture such as virtual fencing.

- Conducted multiple educational sessions with ranchers and USFS personnel to train all stakeholders on collar deployment and virtual fence technology
- Created fence boundaries and grazing locations in virtual fence programs for approximately 52,000 acres (coordinated with permittees and FS to address rotation and exclusion needs)
- Deployed 200 collars on cows/bulls and trained stakeholders and cattle in virtual fencing

Deploying collars on cattle.

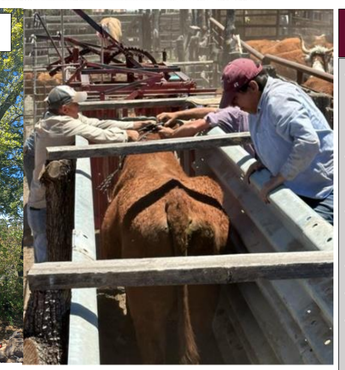


Packing in communication towers



Training cattle with audio/shock barriers

Constructing communication towers



Impacts/Results

- Successful use of virtual fence technology allowed ranching enterprises to sustain their operation. These permittees may have otherwise been required to remove cattle for long periods of time due to extensive infrastructure repair needs.
- Results and lessons learned provide a template for future Extension efforts to support communities after wildfire or other natural disasters
- Virtual fencing can be implemented in remote locations to manage cattle within designated boundaries
- Increased gathering efficiency by 10% for producers in rough terrain
- Virtual fencing worked well for riparian exclusions
- Provided necessary information to begin development of CES “Technology Taskforce” to facilitate technology adoption in New Mexico’s extensive livestock production systems.
- Collars are not successful on bulls
- Approximately 15% of collars were lost or malfunctioned

Partners/Collaborators

The agent initiated coordination meetings with ranchers, United States Forest Service (USFS), NMSU Extension Specialists, New Mexico Department of Agriculture, Sierra Soil and Water Conservation District and Farm Service Agency during post fire recovery efforts to determine alternative solutions that would allow ranchers to graze their allotment's and re-stock their cattle.

Producer Statements

- “We were able to identify patterns in cattle disbursement that indicated predator presence in certain areas.”
- “Another advantage was being able to use pastures in different ways with out the expenditure of building traditional fence. We were able to build a small pasture via virtual fence to keep first calf heifers closer to the house for monitoring.”
- “The main disadvantage is that as with any technology it can fail or break.”
- “Virtual Fencing has helped us in post Black Fire recovery by allowing us to maintain pasture rotation and heard management with out the immediate massive expenditure of time and money of rebuilding burned fence”