

LIVESTOCK PREDATION PREVENTION PROJECT (LPPP) CATTLE/SHEEP GPS COLLARS RMP



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Monitoring the location and behavior of a herd/flock is a very important factor in understanding stresses that they are experiencing. Livestock mounted GPS technology and communications which locate the herd and report body temperatures is now possible with your smartphone or computer. With this technology livestock producers should be able to better notice livestock cues indicative of predator stresses and be better able to manage and reduce predator losses.

How does location relate to predation?

Grazing livestock often travel meandering trails and rest in many areas and places. Initially their behavior may

seem erratic and random. However, when a manager can monitor movements and behaviors, patterns start to appear. For example, cattle congregating in a small bluff of trees may be seeking refuge from the hot summer sun. However, if the same group remains in the same bluff during night time, without venturing for grazing or water it may mean that the herd is avoiding predators by bunching up. This behavior can be costly if the cows stop grazing and are fearful.

The GPS collars also report skin temperature, which can be indicative of the effects of sun and cooling, and it can also be a response to fear and stress.



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GPS Collar System Overview

The Digitnimal GPS collar system combines sensors and communication modes to make it robust and appropriate for rural Manitoba needs which could include challenges due to limited cellular communications.

1. Collar on the Livestock

- Collar has a GPS receiver which functions to report location within pasture.
- Temperature sensor on inside of collar, responder against hide.
- Collar transmitter broadcasts a unique signal with GPS coordinates and animal's temperature to a Sigfox antenna.
- Five collars per herd will be initiated which could be mounted on leader females, followers, and bulls/rams.
- Battery life on collars is intended to be greater than one year so animals should not need to be rounded up regularly.

2. The Antenna/Transmitter

- Sigfox antenna receives signal from collar, and converts the information packet to a SMS message that is transmitted to a server through the local cellular network.
- Solar panel, voltage controller and battery power the antenna/transmitter.
- Antenna tower used to raise Sigfox antenna and cell network transmitter above obstacles. This allows for monitoring of pastures which typically do not receive strong cell signal, or otherwise not serviced due to topography, trees, or distance.

3. Your Smartphone or Personal Computer.

- The GPS location packets are delivered to you through the internet to your phone or computer.
- A smartphone app or program will map and document current and past locations and temperatures.

At the completion of the Livestock Predator Prevention Project a report will be written to help guide producers to the most effective predator reduction practices.

For more information of the Livestock Predator Prevention Project and other Risk Mitigation Practices please visit <https://mbbeef.ca/>



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