



BROADWATER
— SYSTEMS GROUP —

Architecting Operational Advantage.

CATTLE & LIVESTOCK MONITORING

Eyes on the Operation. Even When You're Not.

Cattle ranching in Montana means scattered infrastructure across thousands of acres, much of it where cellular service doesn't reach. Calving sheds need to be checked at 2 AM. Water troughs freeze, leak, or run dry without anyone knowing. Gates get left open during hunting season. And in the fall, locating cattle on summer range can take days. BSG deploys industrial-grade monitoring across your operation — calving barns, water sources, gates, range — with alerts that reach you wherever you are.

The Problem We Solve

Cattle operations face operational pain that cellular-dependent monitoring products can't address:

- Spring calving losses from temperature swings in barns and warming sheds. A heat lamp that fails or a door left open during a cold snap can cost calves overnight.
- Water trough failures discovered hours or days late. A frozen line, a leak, an empty tank — all invisible until cattle are stressed or dehydrated.
- Gates left open during hunting season or by passing traffic. Cattle walk out, and you find out when they're three pastures over.
- Summer range cattle that need to be located in the Fall. The annual gather can take days when cattle have spread across high country with no easy way to know where they are.
- Existing virtual fencing systems (Halter, Vence, Nofence) that solve grazing management but cost \$7–\$10 per head per month plus \$10,000+ per base station — a different scale of investment than basic infrastructure monitoring.

What BSG Deploys

BSG is not a virtual fencing system. We focus on monitoring the infrastructure around your operation — the buildings, water sources, gates, and (where applicable) cattle locations — at a cost that scales with what you actually need:

- Calving barn and warming shed monitoring. Temperature, humidity, door open/close status. Real-time alerts when a heat lamp fails or a door is left open during a cold front.
- Water trough sensors. Level, temperature, leak detection. Know when a trough is dropping faster than expected, when ice is forming, or when a line has frozen.
- Gate sensors. Magnetic or contact-based monitoring on high-risk gates — hunting season access points, high-traffic areas, anywhere a left-open gate costs you cattle.
- Pasture weather stations. Field-specific temperature, wind, and precipitation data — useful for grazing rotation decisions and calving-season risk assessment.
- Summer range cattle tracking via LoRaWAN GPS collars. Mountain-mounted gateways extend coverage into high country where cellular doesn't reach. Battery life of 4–6 months on solar-harvesting collars (validated in published research on alpine pasture deployments).

- RFID ear tag integration. Cattle health monitoring works best in moderate temperatures — BSG is honest that ear tag accuracy degrades in winter cold, so we recommend deployment for summer range and shoulder-season use.

Mountain Range Coverage

Cellular service is unreliable or absent in much of Montana's summer grazing country. BSG addresses this with a different network architecture:

- Solar-powered LoRaWAN gateways mounted on high points adjacent to summer pasture allotments. Each gateway covers up to 6,000–10,000 acres in line-of-sight terrain.
- Partnerships with local Wireless Internet Service Providers (WISPs) for backhaul where their coverage reaches — BSG co-locates gateways at existing WISP tower sites.
- Satellite backhaul (Starlink or Iridium) at remote sites where no terrestrial connectivity exists — priced separately and quoted by site after a coverage survey.
- Honest scoping: we will tell you which parts of your range we can cover and which we can't, before you spend money.

Investment Range

Pricing scales with what you deploy. Most cattle operations start with calving barn or water trough monitoring and expand based on what proves valuable.

Deployment	Typical Install	Monthly Service
Calving barn / shed monitoring (temperature, humidity, doors)	\$2,000 – \$3,500	\$79 – \$149
Water trough monitoring (per trough, with level + temp)	\$400 – \$700 each	Included in tier
Gate sensors (per high-risk gate)	\$300 – \$500 each	Included in tier
Summer range cattle tracking (per head, GPS collar)	Custom — site survey required	\$10 – \$20 / head / mo
Whole-ranch infrastructure deployment	\$8,000 – \$20,000+	Custom quote

Comparison: Virtual fencing systems (Halter, Vence, Nofence) typically require \$4,500–\$25,000 in base infrastructure plus \$40–\$84 per head per year in collar leases or subscriptions. BSG infrastructure monitoring is a different and complementary product — lower cost, focused on the operational pain points around your cattle, not on virtual containment.

What You Keep

- Calves that survive spring storms. Real-time alerts on barn temperature and door status mean intervention before losses, not after.
 - Hours of windshield time saved. Stop driving the daily water-check loop. Drive when something needs attention.
 - Gates closed during hunting season. Sensors on high-risk gates flag when they're left open, before cattle wander.
 - Faster Fall gathers. Knowing where the herd is on summer range — even approximately — turns a multi-day operation into a focused one.
 - A foundation for future expansion. Start with calving barn monitoring. Add water troughs. Add gates. Add summer range tracking when the timing is right. The platform grows with your operation.
-

Schedule a Site Walk-through

BSG site visits are no-pressure. We come out, walk your operation, listen to where the pain is, and tell you honestly which sensors would help and what it would cost. If summer range coverage isn't feasible at your site, we'll say so up front.

Joseph Gill, Systems Architect

Broadwater Systems Group

62 Jack Farm Road, Townsend, MT 59644

406.241.2087 • joe@broadwatersystemsgroup.com

www.broadwatersystemsgroup.com