



Grassland Vegetation Inventory (GVI) Grazing and Range Management Applications

What is Rangeland?

Rangeland, or range, is land supporting indigenous or introduced vegetation that is either grazed or has the potential to be grazed and is managed as a natural ecosystem. Rangeland includes:

- Grassland;
- Forestland that can be grazed;
- Shrubland;
- Pastureland; and
- Riparian areas.

Rangelands are an important agricultural resource for livestock grazing. In Alberta, it is estimated that rangelands provide about 14% of the forage required by the Alberta beef cattle herd.¹

Rangeland Management

Range management is about balancing human needs and demands on rangelands with the needs of the range resource (i.e., to protect soil, vegetation and water).

The objective of sustainable rangeland management is to maintain plant vigour, protect and build the soil, perpetuate the forage resource and ensure a stable flow of products and other social benefits.

Sustainable rangeland management applies ecological knowledge, principles and practices. Because rangelands are dynamic ecosystems, the flexible application of rangeland management principles and practices is the best approach to promote sustainable management.

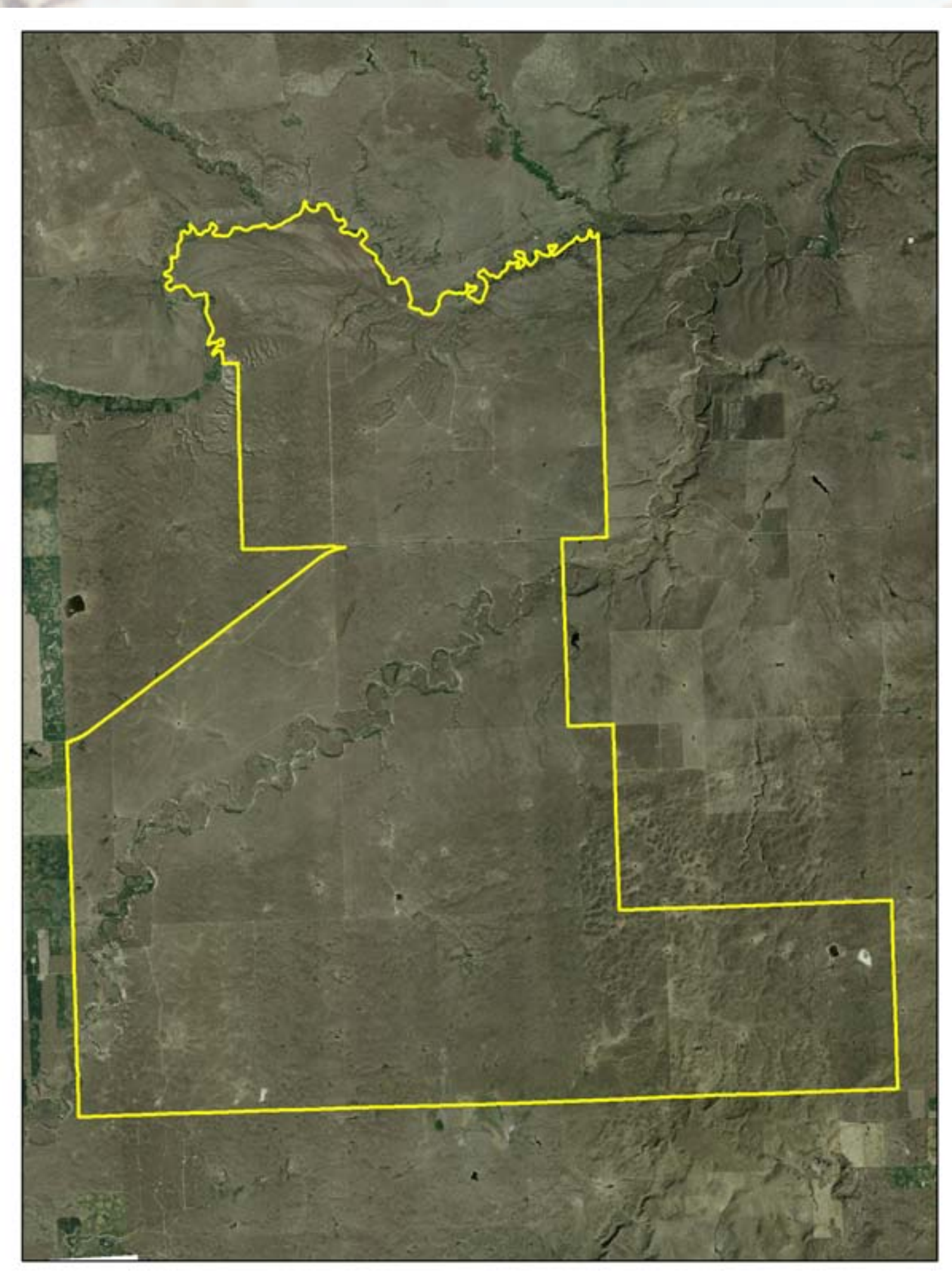
GVI for Range Management

On Alberta rangelands, a planned and balanced cycle of forage harvest and renewal is required to protect the range resource and sustain the many benefits that rangelands provide.

With the understanding of GVI site type distribution landowners can make informed decisions for pasture development (fence lines), water development, salt placement, and avoidance of sensitive areas (e.g., riparian areas, and critical wildlife areas).

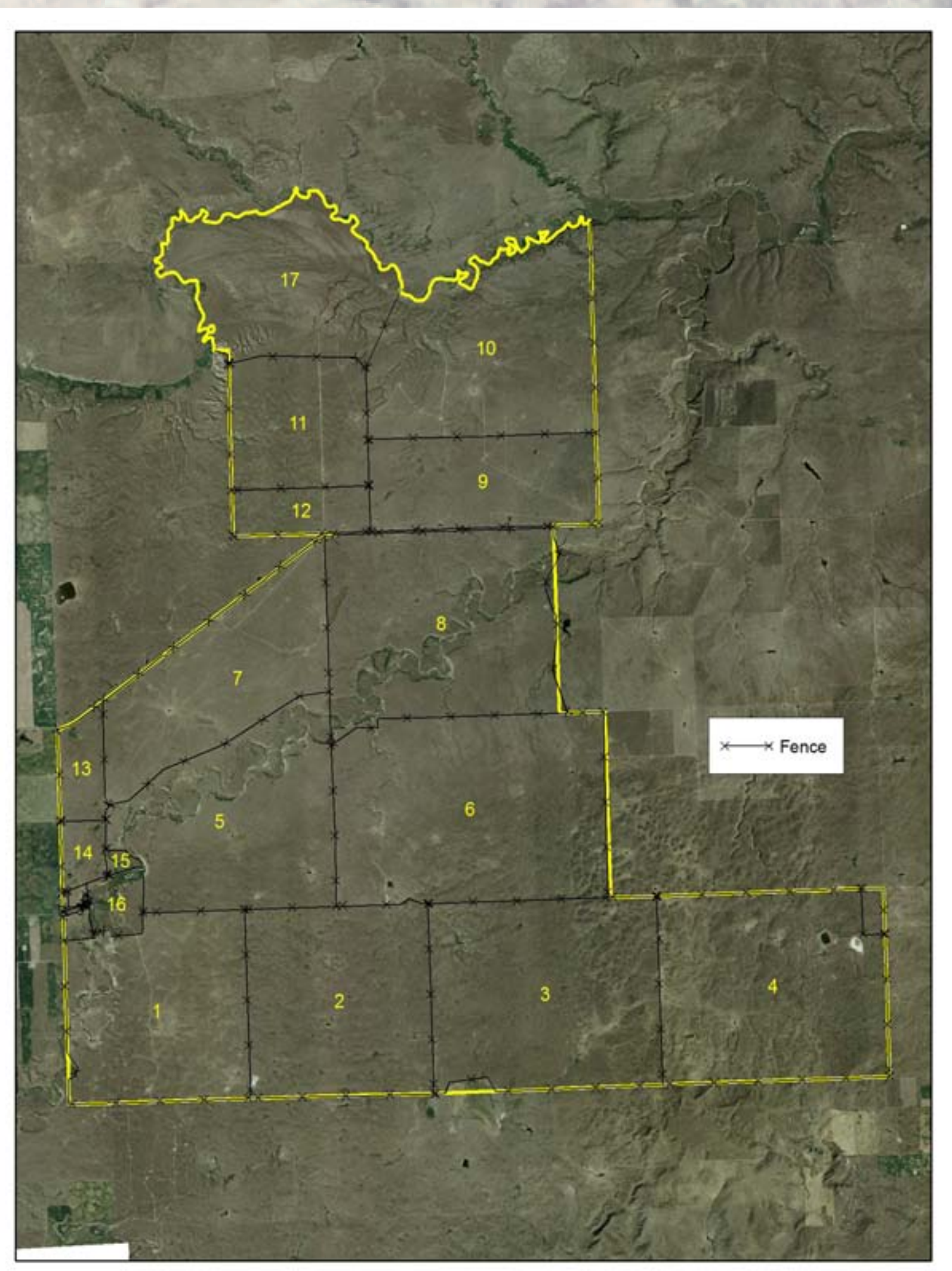
GVI can also help in development of grazing (range) management plans. Plant community composition and range health assessments can be made on GVI polygons to evaluate carrying capacity (forage production) and species composition. With the understanding of plant community distribution, range health and GVI site types, a manager can then apply rangeland management practices suited for each plant community. These practices could include deferred grazing during vulnerable periods, providing effective rest, rotational grazing strategies, and applying ecologically sustainable stocking rates.

Theoretical ranch



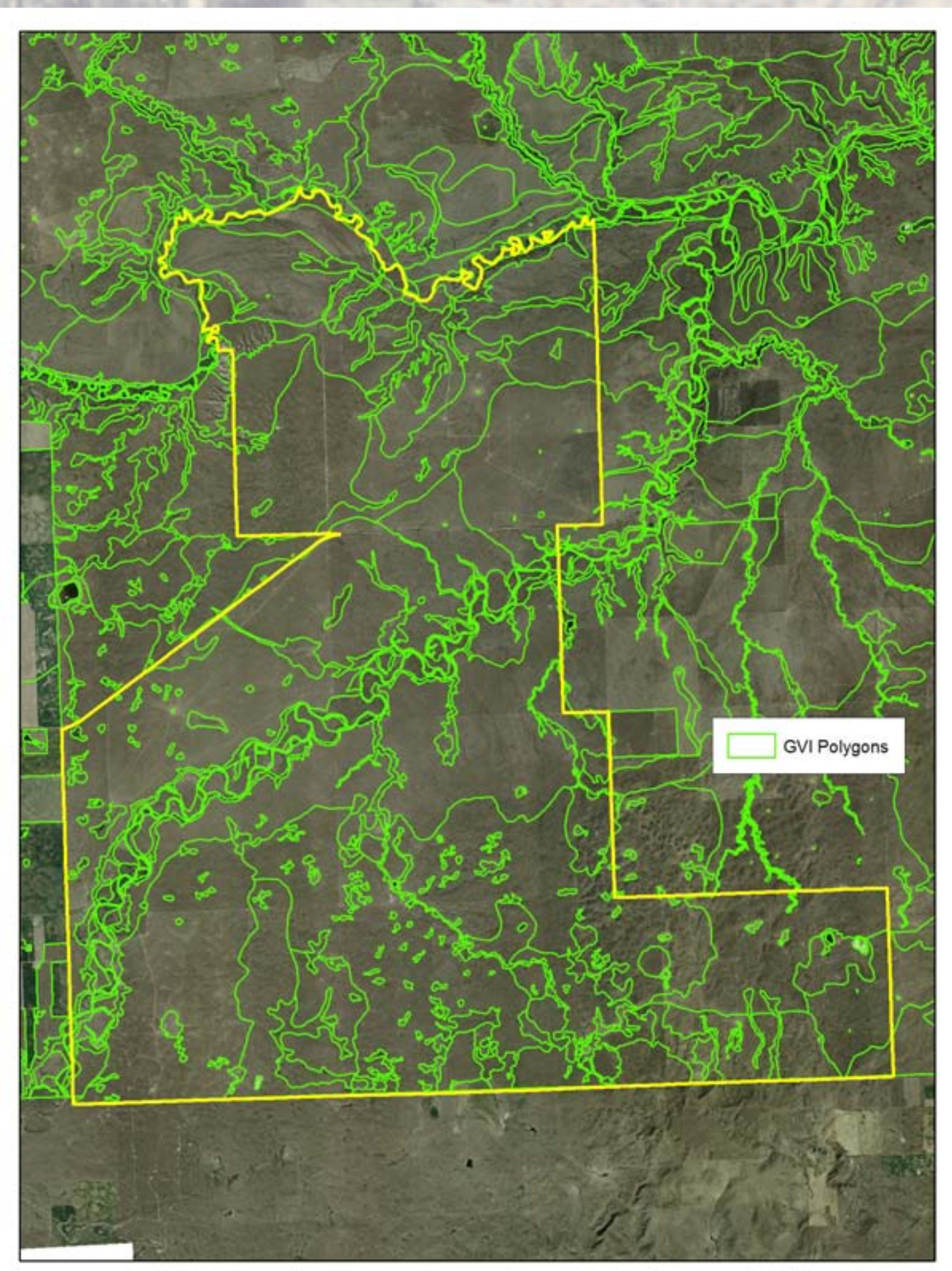
Prior to GVI, traditional range management planning involved a significant amount of ground truthing and field assessments to understand range sites and plant community distribution.

Ranch with existing infrastructure and grazing pastures



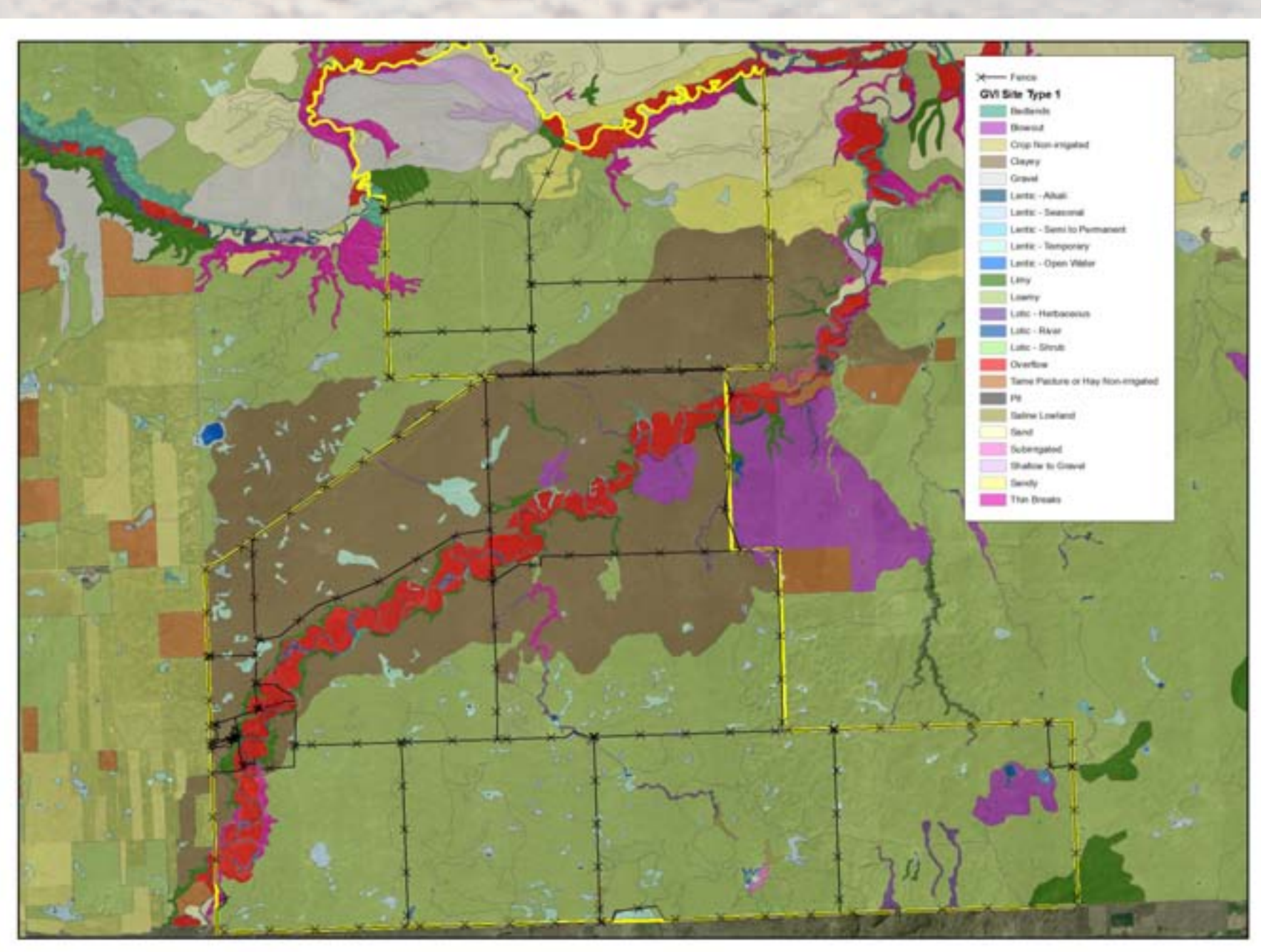
Most of the original range management plans did not incorporate the ecology and spatial distribution of range sites on the ranch. Therefore, fences and other infrastructure were developed without an understanding of range sites.

Ranch with GVI polygons overlaid



Landscape polygons are the basic map units in the GVI and they represent interpretations of relatively uniform biophysical or anthropogenic areas. Ranches contain one or more GVI site types, each with associated land that has specific physical characteristics and produces a distinct kind and amount of vegetation.

Ranch with GVI rangeland view and infrastructure



GVI facilitates the understanding of the kind, amount, and distribution of range sites throughout the ranch. It also enables beneficial management practices and recommendations to landowners to be refined and range management principles can then be applied to maintain or foster healthy productive rangeland.

Summary

With the understanding of GVI site type distribution, ranchers can implement improved range management principles and practices such as:

- Balancing livestock demands with the available forage supply (i.e., the rancher harvests forage to produce healthy livestock but leaves adequate ungrazed residue to protect plants and soil);
- Promoting even livestock distribution by using tools like fencing, salt placement and water development to spread the grazing over the landscape and minimize disturbance of sensitive habitats;
- Providing effective rest periods after grazing to allow range plants to recover from the stresses of grazing; and
- Applying ecologically sustainable stocking rates and distribution of livestock grazing effectively.²

References

1. Alberta Government Website: www.srd.alberta.ca/BiodiversityStewardship/GrazingRangeManagement/Default.aspx
2. Grassland Vegetation Inventory (GVI) Specifications Alberta Sustainable Resource Development, Government of Alberta 5th Edition June 29, 2010. revised July 13, 2010.