



Grazing Management Plan Bijou Basin Open Space

Purpose and Scope

This Grazing Management Plan provides an adaptive framework to manage livestock grazing at Bijou Basin Open Space to:

- Sustain a working ranching landscape while protecting natural resources and conservation-easement values
- Maintain and improve shortgrass prairie, ravines/canyons, and the West Bijou Creek riparian corridor (intermittent/dry much of the year)
- Reduce conflicts with public access as the site is developed for outdoor recreation (hiking and equestrian use; no bikes and no dogs per current plan direction)

Planning horizon: 2026–2036, updated annually through Annual Operating Instructions (AOI).

AOI: Annual Operating Instructions (AOIs) are yearly, site-specific guidelines from the land management agency, Arapahoe County Open Spaces, detailing how lease holders (grazing) must manage land for that year, adapting long-term leases to current annual site conditions to provide for resource protection (riparian health, forage use) or management needs, and are governed by the agricultural lease for the property.

Site Context and Constraints

- Bijou Basin is a large eastern-plains open space acquired and managed as a working ranch with active grazing and dryland farming, with outdoor recreation being added as a land use in the future.
- Property size is 3,216 acres.
- The site includes ~3 miles of West Bijou Creek and cottonwood bottomlands, with upland shortgrass pastures.
- Grazing occurs only as authorized by County Open Space rules, and are defined by grazing units.

Management Goals and Measurable Objectives

Rangeland health & soil protection

- Maintain adequate residual vegetative cover to prevent erosion and protect biological soil crusts on uplands.
- Avoid repeated, season-long use of the same pasture in a single growing season.

Riparian protection (Creek corridor)

- Maintain stable streambanks, cottonwood regeneration opportunities, and ground cover.
- Prevent concentrated loafing impacts near water points.

Wildlife and habitat

- Maintain heterogeneous structure (some shorter and some taller grass) across the landscape of the site.
- Reduce disturbance in sensitive areas during priority periods (e.g., during bird nesting) through timing and pasture selection.

Agricultural viability & operational safety

- Provide predictable livestock access, water, and handling.
- Minimize conflict with future visitors through infrastructure, signage, and operational protocols.

Grazing System Design

Pasture Framework

Use existing fences where possible and plan for 4–8 management units across all 3 zones.

Zone A — Uplands (deferred-rotation with rest)

- Rotation goal: do not graze the same upland pasture during the same growth window year after year.
- Rest goal: at least one upland pasture receives full growing season rest each year (rotate which one).
- Distribution tools: move mineral/salt frequently; avoid placing attractants near riparian zone.

Zone B — Riparian corridor (tight prescription)

Use short-duration, high-control grazing only when conditions are appropriate.

- Prefer firm soil periods; avoid wet/soft-bank conditions.
- Trigger-based removal: if you see bank shear, pugging, or trails forming, rotate out immediately.

Zone C — Agricultural land (only if authorized)

- If the agriculture lease allows residue grazing:

- Allow post-harvest use only, with a firm-soil requirement.
- Prohibit feeding/hay placement unless explicitly approved on a hardened site.
- Maintain buffers between crop ground and riparian areas.

Infrastructure Priorities

- Water distribution: multiple stock tanks to reduce pressure on the creek corridor, located along existing water line (especially since the creek is often dry).
- Fence & access control: lockable gates/cattle guards where needed.
- Handling/working area: use an existing or designated low-impact trap/pen site; avoid riparian placement. 90% of riparian corridor to be an exclusion zone.

Stocking Rate and Annual Authorization (AUM method)

Because forage production varies widely year-to-year on the eastern plains, stocking is set annually using a forage inventory (CSU and NRCS) and drought conditions.

Annual Stocking Calculation (AOI)

- Map grazeable acres by pasture and identify non-grazeable areas (riparian restoration areas, steep/erosion-prone slopes, infrastructure buffers).
- Estimate forage production (lbs/acre) using:
 - Prior utilization records and precipitation, and/or
 - Clip-and-weigh transects in key ecological sites (preferred).
- Apply a conservative harvest coefficient and required residual cover standard.
- Convert to AUMs and distribute across pastures based on water and access.

Forage Inventory and Forage–Animal Balance (NRCS CPS 528)

Annual AUM authorization will be supported by a documented forage inventory and a forage–animal balance that compares:

- Forage supply (estimated available forage by pasture/unit and season of use, considering desired residual and resource limitations), and
- Forage demand (class of livestock, numbers, expected intake/animal unit equivalents, and planned days of use).

The forage–animal balance will be included in the AOI packet and will reflect the planned rotation, timing, and any planned deferment/rest.

Required AOI Packet Components (NRCS CPS 528)

At minimum, each annual AOI packet will include:

- Resource inventory/assessment (current conditions, primary resource concerns, pasture readiness, infrastructure condition, and seasonal water availability/quality).
- Forage inventory (benchmark and planned year estimates, with assumptions documented).
- Animal inventory (class, number, and planned use period).
- Forage–animal balance (supply vs. demand).
- Planned grazing schedule (pastures/units, dates or windows, and rest/deferment).

- Contingency plan (drought, wildfire, flooding, insects, infrastructure failure) including decision rules for in-season adjustment.

Starting point (until monitoring data matures):

Use historic lease stocking and timing as an initial ceiling, then adjust downward if utilization or ground cover targets are not met.

Grazing Prescription (timing, duration, intensity)

Rotation approach

Adopt a deferred-rotation system with planned rest:

- Move livestock through multiple pastures each season; avoid grazing the same pasture in the same growth period year after year.
- Build in full growing season rest for at least one pasture annually (rotating which pasture gets rest).

Season of use (adaptive)

Set “windows” in the AOI each year based on precipitation, plant phenology, and operational needs:

- Uplands: flexible spring–fall use with rotation and rest.
- Riparian corridor: prefer **short-duration** use when soils are firm; avoid prolonged use during wet periods and during sensitive regeneration periods.

Utilization & stop-grazing triggers (field-based)

Use conservative, field-checkable triggers:

- Upland shortgrass: stop/rotate when average use approaches the year’s allowable use level *or* when residual cover is trending toward erosion risk.
- Ravines/breaks: stop/rotate at first signs of trailing, slumping, or rilling.
- Riparian: stop/rotate immediately if bank shear, pugging, or concentrated loafing is observed.

Decision Rules: Start/Stop and Recovery (NRCS CPS 528)

In addition to site protection triggers (e.g., excessive trailing, pugging, bank shear, concentrated use, wet soil vulnerability), rotation timing will be guided by:

- Start/stop grazing heights and/or plant growth stage considerations for key forage species, and
- Adequate recovery periods to support plant vigor and desired species dominance.

These values and the specific indicators used for the season will be documented annually in the AOI. If indicators show declining plant vigor, excessive use of key species, or inadequate

recovery, the County/Operator will adjust timing, duration, or stocking to improve recovery and meet objectives.

Riparian and Water Protection Practices

- Off-stream water only
- Place salt/mineral >¼ mile from the creek (or as far as practicable) and rotate sites to prevent bare ground. - Lessee
- Consider riparian enclosures with hardened, limited-access water crossings if livestock must access the corridor.
- No feeding/hay placement in riparian areas (unless emergency-approved and on a hardened site).

Weed and Vegetation Management (integrated with grazing)

Annual noxious weed survey (spring and late summer) along disturbed corridors: gates, trails, tank sites, and riparian edges.

Use grazing to support desired conditions (e.g., avoid repeated heavy use that favors noxious weeds).

For problem species (example: common mullein), integrate:

- prevention (clean equipment, manage disturbed soils),
- targeted mechanical/spot treatment where feasible,
- reseeded/soil cover restoration on bare patches.

Woody/Brush Management (NRCS CPS 314)

Woody plant/brush management will be implemented where needed to achieve or maintain the desired plant community and support grazing distribution, ecological function, and other open space objectives. Objectives will be expressed in terms of the desired plant community's composition, structure, density, canopy/foliar cover, and/or height.

Planning and Method Selection

Brush management planning will consider ecological site potential and expected vegetation dynamics (including state-and-transition concepts where available). Methods will be selected to:

- Minimize soil disturbance where erosion risk is elevated or revegetation potential is uncertain,
- Avoid or minimize adverse effects on desirable plants and habitat values, and
- Integrate with grazing management so recovery is supported (timing/deferral/rest coordinated with the AOI).

Follow-Up and Maintenance

Brush management will include an expectation of follow-up treatments, as needed, as part of a complete control strategy. Monitoring will be used to evaluate outcomes relative to objectives and to schedule follow-up actions.

Herbicide Risk Screening (If Applicable)

If herbicides are used as part of brush control, the County/Operator will conduct WIN-PST screening (or an equivalent water-quality risk screening process) and implement any recommended mitigation measures where risks are identified.

Wildlife and Pollinator Considerations

Timing of brush management will consider wildlife and pollinator life-cycle needs (e.g., nesting/breeding seasons and key forage/flowering periods) when practicable and consistent with safety and operational constraints.

Recreation Interface and Public Safety (post-opening)

The master plan direction anticipates hiking and equestrian use, with **no dogs and no bikes** to reduce conflicts with grazing and protect resources. Amenities, public access, and rule/regulations are subject to change at the discretion of the county

Operational protocols

- Post clear signage at trailheads and pasture gates: “Working ranch—livestock present.”
- Maintain visitor-safe fence crossings (if any) and keep gates functional/latched.

Use temporary closures or re-routes during:

- cattle drives
- prescribed maintenance
- (potentially) limited hunting programming in December if implemented.

Monitoring, Reporting, and Adaptive Management

Baseline (Year 1)

- Establish permanent **photo points** (at least 2 per pasture + riparian points, performed by county technicians).
- Identify **key areas** (representative upland sites, problem spots, riparian reaches).
- Record existing fence/water condition and livestock distribution issues.

Annual monitoring (each grazing season)

- Utilization checks during use and at end of season.
- Ground cover / bare soil estimates on key upland sites.
- Riparian condition checks: bank stability, hoof shear, trailing, woody regeneration.

Monitoring locations

Establish permanent points:

- 2 photo points per upland pasture (key areas representative of grazing),
- 3–5 riparian photo/condition points (upstream/mid/downstream; include any crossings/water access),

- 1–2 points per ag field if residue grazing occurs.

Pasture Condition Score (PCS) Monitoring (NRCS CPS 528)

The County/Operator will complete a Pasture Condition Score Sheet (PCS) baseline for each grazing management unit/pasture prior to turnout (or during the first authorized grazing season if baseline is not yet available). PCS will be re-scored at least annually (end-of-season preferred) and used to evaluate trend and inform annual AOI decisions.

Minimum performance thresholds (adaptive management triggers): PCS category scores will be maintained at ≥ 4 for:

- Percent desirable plants
- Live/dormant plant cover
- Grazing utilization/severity
- Livestock concentration areas
- Plant vigor
- Erosion

If any management unit scores < 4 in one or more categories, the County/Operator will implement adaptive management (e.g., reduce stocking rate, shorten grazing duration, increase rest/deferment, improve distribution with water/mineral placement, adjust timing of use) and document changes in the AOI and end-of-season report.

Documentation: PCS sheets, utilization notes, photo points (if used), and grazing records (dates, pasture/unit, class of livestock, numbers, notable conditions) will be retained as part of the annual grazing file.

Decision rules

- If a pasture misses ground cover or riparian condition targets: reduce duration/stocking next season and/or increase rest.
- If drought intensifies (see Section 11): implement early destocking triggers.

Annual report

- Pasture use record (dates, head count, class of livestock).
- Monitoring summary and recommended AOI changes.

Operation and Maintenance (NRCS CPS 528)

Prescribed grazing will be implemented on a continuing basis during the lease term, with monitoring results and grazing records used to verify progress toward objectives. The County/Operator will maintain supporting infrastructure (fences, water developments, and related distribution tools) in operable condition and will document adaptive management decisions and AOI revisions when monitoring indicates objectives are not being met.

Drought, Wildfire, and Emergency Response

Because eastern Colorado forage is precipitation-driven:

- Use a pre-season forage inventory and monthly check-ins during drought.

- Triggers may include:
- poor green-up by a set date,
- forage production <X% of average (as measured),
- water point failures,
- extreme fire weather.

Drought actions (in order)

1. Shorten grazing periods; increase rest.
2. Reduce numbers (partial destock).
3. Full destock if resource damage is imminent.

Designated Sacrifice Area (Emergency Use Only) (NRCS CPS 528)

If extreme conditions require confinement to protect the broader property (e.g., severe drought, wildfire impacts, prolonged saturation, infrastructure failure), a designated sacrifice area may be used short-term. The sacrifice area will be mapped and documented in the AOI, and managed to minimize offsite impacts (runoff, erosion, manure concentration near water).

Following use, the sacrifice area will be deferred until recovered. If vegetative ground cover is reduced to approximately < 50%, recovery actions may include reseeded and/or other stabilization measures as appropriate to restore cover and function.

Emergency coordination/response

- Coordinate with County Open Spaces Operations and Sheriff/dispatch protocols for incidents and access.

Roles and Responsibilities

County (Lessor/Manager)

- Sets AOI.
- Approves stocking.
- Maintains perimeter access controls.
- Performs monitoring duties.

Lessee/Operator

- Provides livestock, daily care, move implementation, recordkeeping, and immediate reporting of issues (fence, water, noxious weeds, public conflicts).
- Ensures all salt/mineral placement is >¼ mile from the creek (or as far as practicable) and rotate sites to prevent bare ground.

Annual Operating Instructions (AOI) template

Property: Bijou Basin Open Space

Year: ____

Operator: _____ **Contact:** _____

Authorized class of livestock: _____

Total authorized AUMs: _____

Pastures to be used & sequence:

• Pasture 1: dates _____ to _____ | head _____

• Pasture 2: dates _____ to _____ | head _____

• ...

Pastures resting full growing season: _____

Riparian restrictions: _____

Water points in service: _____

Mineral/salt locations: _____

Monitoring dates & staff: _____

Special conditions (recreation/hunting closures, construction): _____