

Monitoring Plan for Blacktail Watershed

Introduction

The purpose of this resource monitoring plan is to measure the effectiveness of management changes, structural projects and vegetative treatments in meeting the goals and objectives developed for the Blacktail Watershed (BTW). This plan has been designed to measure progress towards the realization of site specific objectives developed through an interdisciplinary approach to mitigate resource (land health) concerns identified during the BTW Assessment process.

This plan will identify when, where and how new studies will be conducted, as well as the types of data that will be collected, how the data will be evaluated, and who will participate in the process. All monitoring methodologies are accepted BLM monitoring methodologies and are described in various BLM or Interagency Handbooks. All existing monitoring studies that are needed to measure progress towards goals and objectives will continue to be read on the same time schedule as new studies.

Site Specific Objectives

There were two driving issues and three additional resource concerns identified during the BTW Assessment and through public scoping. Other monitoring activities will include critical elements that may be affected by the proposed action. Site specific objectives have been developed for each issue and most resource concerns and/or critical element analyzed in the BTW EA. The amount of change desired for each of the objectives will be determined once additional baseline data is gathered during the next two field seasons. The goal is to make measurable progress towards site specific objectives by 2016.

Issues #1 – Riparian, Wetland and Aquatic Habitat and Associated Species

The objectives for riparian, wetland and aquatic habitat and associated species are:

1. Restore deciduous woody habitat types (aspen, willow) in riparian areas that have been invaded by juniper trees.
2. Increase deep rooted riparian vegetation (sedges, willows) where decreased composition was documented.
3. Restore or maintain stream dimension, pattern and profile to the natural range of variation where concerns were documented.
4. Restore, maintain or enhance native vegetation and hydrology to springs, seeps and wet meadows where concerns were documented.
5. Reduce sediment loads where uses on public lands are causing increased sediment (eg. cattle loitering, road maintenance, etc).
6. Maintain or enhance habitat for WCT in the following occupied streams within the watershed: Cottonwood, Jake Canyon, Teddy, Rock, Alkali, and Robb Creeks
7. Maintain or enhance habitat for cold water fisheries in occupied streams within the watershed.
8. Maintain or improve conditions on riparian/wetland habitat that is in properly functioning condition.
9. Repair and maintain existing spring developments, troughs and spring exclosures.
10. Prevent spread of noxious and invasive species into and within the watershed and reduce or eradicate existing infestations.

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Monitoring Activities to measure progress towards meeting Riparian, Wetland and Aquatic Habitat and Associated Species objectives:

- Continue monitoring westslope cutthroat trout population and distribution in coordination with FWP.
- Continue prevention, early detection, treatment and monitoring of noxious weeds in cooperation Beaverhead and Madison counties and other partners.
- Continue monitoring existing riparian studies as applicable.
- Photos will be taken at each spring prior to and after development/redevelopment.

Table 1. Site specific Riparian and Wetland Habitat and Associated Species Monitoring Objectives

| Allotment Name | Stream and Stream Reach | Objective | Monitoring Methodology |
|-------------------------|--|---|--|
| Blacktail Road Trailing | Blacktail Deer Creek BT-2 | <ul style="list-style-type: none"> • Improve streambank stability and channel morphology by reducing trampling impacts. • Increase sedges along the greenline | <ul style="list-style-type: none"> • Photo point • Greenline |
| Sweetwater AMP | <p>Elk Gulch (RU12A)</p> <p>Little Elk Gulch (RU13A and/or RU13B)</p> <p>Moose Creek (RU 17B and/or RU18)</p> <p>Photopoints on any of the upper reaches of these streams may also be established.</p> | <ul style="list-style-type: none"> • Collect baseline data on migratory bird use and document shift in species use in conjunction with riparian restoration treatments. • Improve streambank stability and channel morphology • Increase willows, aspen, red osier dogwood and sedges along the greenline in juniper treatment areas. • Maintain willow canopy cover in pasture 1 | <ul style="list-style-type: none"> • Bird point count transects pre and post treatments* • Photopoints and/or modified Rosgens (cumulative width/depth ratio) • Greenline, photo point, woody browse regeneration; • Cover board transects along upper reaches of Elk Gulch and Little Elk Gulch |
| Timber Creek AMP | Timber Creek (RU36, RU48, | <ul style="list-style-type: none"> • Collect baseline data on migratory bird use and document shift in species use in conjunction with riparian restoration treatments. • Improve streambank stability and channel morphology • Increase willows, aspen, red osier dogwood and sedges along the greenline | <ul style="list-style-type: none"> • Bird point count transects pre and post treatments* • Photo point • Greenline, woody browse regeneration, photo point |
| Spring Brook | <p>Wood Canyon Pasture RU81</p> <p>Pappy's Gulch Pasture RU83</p> | <ul style="list-style-type: none"> • Improve streambank stability and channel morphology by reducing trampling impacts. • Increase sedges along the greenline • Improve streambank stability and channel morphology by | <ul style="list-style-type: none"> • Photo point • Greenline • Photopoints (RU83 and RU84) |

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| Allotment Name | Stream and Stream Reach | Objective | Monitoring Methodology |
|-----------------------|--|--|--|
| | Lower Virginia Pasture RU84 | reducing trampling impacts | |
| Spring Brook Isolated | Sweetwater Creek RU101 | <ul style="list-style-type: none"> • Improve streambank stability and channel morphology by reducing trampling impacts. Widen the riparian zone • Increase sedges along the greenline | <ul style="list-style-type: none"> • Photo point • Greenline |
| Red Canyon | Springs BT299 | <ul style="list-style-type: none"> • Reduce trampling impacts to springs | <ul style="list-style-type: none"> • Photo point |
| Sweetwater Basin | Red Canyon RU173 | <ul style="list-style-type: none"> • Improve hydrology, reduce trampling impacts to spring • Increase riparian vegetation (willows, sedges) | <ul style="list-style-type: none"> • Photo point |
| Steamboat | Cooks Lake BT60 Teddy Creek BT31 Granny Spring BT95 | <ul style="list-style-type: none"> • Reduce trampling impacts to lake shore • Improve composition of willows and sedges and willows along the greenline. • Reduce trampling impacts to spring and increase sedges along the greenline | <ul style="list-style-type: none"> • Photo point • Photo point, greenline • Photo point |

* This inventory is subject to funding and a cooperative agreement with Avian Science Center at University of Montana

Issue #3 – Upland Health, Upland Habitat and Associated Species

The objectives for upland health, upland habitat and associated species are:

- Increase cover and frequency of native perennial cool season herbaceous species where concerns were documented.
- Prevent and reduce noxious weed and invasive species infestations.
- Maintain residual herbaceous cover for ground nesting birds, specifically sage grouse.
- Manage sagebrush habitats so that 70% or more of potential big sagebrush communities provide the vegetation composition and structure to sustain sage grouse populations and other sagebrush obligate species such as antelope and pygmy rabbits.
- Maintain 15-25% sagebrush canopy cover and herbaceous cover conducive to nest and brood rearing success surrounding leks, as applicable within site potential.

Monitoring Activities to measure progress towards meeting Upland Health, Upland Habitat and Associated Species objectives:

- Continue prevention, early detection, treatment and monitoring of noxious weeds in cooperation Beaverhead and Madison counties and other partners.
- Continue existing upland trend studies (Daubenmires) within the Blacktail Watershed, as applicable.

- Maintain winter use big game utilization studies to continue monitoring the habitat quality and determine if management of these areas is providing the seasonal habitat requirements of existing populations and population objectives of big game.

Table 2. Site Specific Upland Objectives

| Allotment Name | Objective | Monitoring Methodologies |
|----------------|---|---|
| Spring Brook | Increase frequency and cover of cool season perennial bunchgrasses to protect soil, allow for more efficient precipitation infiltration, provide cover for sage grouse and other wildlife species and provide forage for wildlife and authorized livestock. | - Daubenmire and/or - Quadrat (nested) Frequency |

Table 3. Site Specific Objectives for Sagebrush Habitat

| Allotment Name | Objective | Monitoring Methodologies |
|------------------|---|--|
| Spring Brook | Delineate seasonal habitats of sage grouse. | Habitat Characterization Monitoring; This methodology may combine telemetry study* (radio collar and tracking of hens to identify nesting and brood-rearing habitats) with Line Intercept and Daubenmire plots to measure canopy cover of sagebrush and herbaceous understory. Forage utilization and herbaceous understory cover will be measured annually within time constraints of staff. |
| Sweetwater AMP | Maintain nesting canopy cover of 15–25% sagebrush on the majority of the area within two miles of leks. | |
| Red Canyon | Maintain adequate herbaceous understory on the majority of the area within two miles of leks during nesting /early brood rearing (typically April through mid-June). The herbaceous understory objective is an average of 6 to 7 inches within site potential. | |
| Sweetwater Basin | | |
| Steamboat | Maintain brood rearing canopy cover of 15–25% sagebrush near riparian areas or wet meadows while maintaining available forbs in the wet meadows. Maintain or increase composition of highly nutritious forbs (ie composites and legumes) in nesting/early brood rearing habitat. | |

Special Status Species

Threatened species include Gray wolf, bald eagle, and grizzly bear. Monitor species activity in cooperation with MT FWP, and ensure that habitat requirements are met.

Sage grouse and pygmy rabbit habitat characterization monitoring is identified in table 3 above. Sage brush habitat needs for both species are similar. Monitoring and inventory data collected for sage grouse has documented pygmy rabbits utilizing the same habitat in the DFO. Therefore, data collected for sage grouse can also be extrapolated for pygmy rabbits.

Monitor ferruginous hawk, golden eagle, and prairie falcon nests in the Sweetwater Breaks raptor management area to document occupancy and productivity. Sampling should occur on a 5-year basis following inventories in 2005 and 2006.

A habitat management plan (HMP) is scheduled to be completed for Idaho sedge (*Carex idahoensis*) in 2007. Both known populations of Idaho sedge in the BTW will be revisited, photographed and mapped prior to the preparation of the HMP. Numbers of Idaho sedge plants will be counted or estimated to serve as the baseline for the HMP. Additional monitoring of Idaho sedge may be accomplished through such things as demographic studies, density, cover, and frequency (inside enclosures versus open areas). Specifics will be worked out and detailed in the HMP.

Cultural Resources

The goals and objectives for cultural resources in the watershed are to maintain the integrity of existing cultural resources; mitigate potential adverse impacts of any proposed range or habitat improvement projects through project redesign or abandonment; and to record the presence and location of any previously unreported cultural and paleontological resources on public lands.

A review of previously recorded cultural resources has determined that properties in six allotments have potential to be affected by cattle grazing or trampling. Approximately 30% (n=5) of the 16 previously recorded cultural resources in the study area are eligible or potentially eligible for the National Register of Historic Places and should be revisited in order to determine if adverse impacts associated with grazing management are occurring.

Socioeconomics

The objective for socioeconomics is:

- Continue to contribute to the local economy by providing an opportunity for sustainable uses on public land (primarily livestock grazing, hunting and fishing within the Blacktail Watershed).

Trends in socioeconomics will not be monitored by the local BLM office.

Recreational Opportunities and Public Access

The objectives for motorized access are:

1. Implement the Dillon RMP Travel Management Plan. Close new unauthorized roads and trails when they are discovered. Rehabilitate as necessary to discourage future use and prevent weed spread.
2. Maintain motorized wheeled vehicle access to those areas where it already exists, and improve access across private lands where opportunities are currently limited.
3. Maintain opportunities for big game hunting, fishing, wildlife viewing, horseback riding, and other backcountry recreation.
4. Reduce unauthorized motor vehicle use, especially during the hunting season, and within the Blacktail Mountains WSA.

Monitoring will consist of compliance checks to determine if closed roads show signs of use and hunting season compliance visits to monitor and enforce the travel management plan.

Wilderness Characteristics

The objectives for wilderness characteristics are:

- Maintain or improve the wilderness characteristics that were present at the time of the wilderness inventory (1979-80)
- Reduce occurrence and impacts of unauthorized motor vehicle use.

Planned monitoring will consist of compliance checks and continuation of existing monitoring. WSA monitoring forms will be completed, and photographic documentation will be used where applicable.

Types of Data Collected

Most established permanent vegetative and physical trend transects in the BTW were read and data was updated during 2006. However, to adequately measure progress towards site specific objectives, additional studies will be established in key areas during 2007 and/or 2008. Baseline data will be gathered during or prior to 2008, as necessary to adequately measure progress towards meeting objectives. The baseline data will be considered the starting point from which to measure progress towards meeting objectives or effectiveness of management changes. Monitoring Methodology descriptions are available at the Dillon Field Office.

Key areas are defined as relatively small areas that reflect or have the capability to reflect the effectiveness of management of the resources of a larger area. Depending on management objectives, a key area may be a representative sample of a large stratum, pasture, allotment, or a particular management area. Key areas or monitoring sites should represent the high variability of riparian, upland and forest habitat types, patterns of use, and conditions of forest, rangeland or riparian health. Over the next several years the following data will be collected (See Table 4).

- Actual livestock and wildlife use. Actual use is the grazing use made on an area by all classes of forage consumers. This information is necessary to provide a correlation between utilization and trend data. Considered alone, actual use data are essentially meaningless. However, when considered in conjunction with climate and utilization data, this data is necessary to interpret trend data accurately.
- Annual monitoring/compliance, including utilization of upland forage, browse levels on willows and aspen, measurement of sedge stubble heights and measurement of stream bank alteration, where applicable. This monitoring will occur primarily at established key areas, but may occur in other areas as well. In areas where competition for resources may occur between livestock and big game, pre-livestock data may also be collected. This annual data will be used to help accurately interpret trend data.
- Local precipitation and temperature. This data is necessary to interpret trend data accurately.
- Long term trend. Trend data will be used to measure progress towards meeting objectives as described above.

Trend refers to the direction of change and indicates whether the forest, rangeland, riparian area or other resource is being maintained or is moving toward or away from the desired plant community or other specific management objectives. Trend studies are important in the long term for determining the effectiveness of management actions toward meeting management objectives.

Trend data will be collected again in 2016 unless specified otherwise for specific objectives. The BTW will be re-assessed or evaluated during the winter of 2016/2017. In this process, all monitoring data will be summarized, analyzed, interpreted, and evaluated to measure progress toward meeting objectives. Trend data gathered in 2016 will be compared to baseline and existing trend data. The measured change in the data will be used to measure progress toward meeting objectives, thereby evaluating management and making informed decisions regarding subsequent management (continuation or change). For example, if monitoring data shows that progress is being made toward established objectives, current management will be continued or modified slightly as warranted or allowed according to the data. However, if data shows a downward trend (change away from objectives) or does not show any progress toward meeting objectives by 2016, and it is determined that current livestock management is a significant factor in precluding progress toward meeting objectives, then management will be adjusted by implementing an alternate system, changing the season of use and/or reducing authorized AUMs. The level of adjustment will be determined by the degree of divergence from the objectives.

Table 4. Planned Resource Monitoring Activities

| Type | Method | Responsibility | Frequency |
|-------------------------------------|---|---|--|
| Actual Use | Actual Use Reports submitted by permittees; Wildlife observation forms; Wildlife population monitoring in cooperation with the MFWP. Recreation user days | Range, Wildlife and Recreation Staffs | Annually; |
| Compliance/ Annual Monitoring | Utilization – Grazed/Ungrazed Method; Key Forage Plant method or Height/weight method | Range, Wildlife or Fisheries Biologist, Hydrologist, Recreation Staff, Law Enforcement Officer. | Annually and seasonally, as applicable |
| | Stubble height – Stubble Height Method | | |
| | Bank alteration – Stream bank Alteration Methodology as defined by Idaho State Office BLM, 2000 | | |
| | Browse use – To be determined | | |
| | Compliance checks to monitor and enforce Travel Management Plan | | |
| | Compliance Checks, aerial and ground, in WSAs; photographic documentation. (Wilderness Monitoring Forms). | Recreation Staff | Annually and seasonally, as applicable |
| Climate | Precipitation data available from National Oceanic and Atmospheric Administration and other sources | Available from external sources | Annually |

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| Type | Method | Responsibility | Frequency |
|--------------------------|---|---|--|
| Habitat Characterization | Sage grouse telemetry study. Herbaceous understory measurements along established transect within nesting and early brood-rearing habitat. | Wildlife Staff | Annually, as resources allow. |
| Trend (also see Table 3) | <p>Biotic (vegetative)</p> <p><i>Quadrat Frequency</i></p> <p><i>Daubenmire</i></p> <p><i>Line Intercept</i></p> <p><i>Cover Board</i></p> <p><i>Woody Species Regeneration</i></p> <p><i>Greenline</i></p> <p><i>Macroplots/Belt Transects</i></p> <p><i>Population Census (sensitive plants)</i></p> <p><i>Fire Regime Condition Class (FRCC)</i></p> <p><i>Satellite Imagery (as applicable)</i></p> <hr/> <p>Physical</p> <p><i>Cross section</i></p> <p><i>Rosgens</i></p> | Range, Wildlife or Fisheries Biologist, Botanist, Hydrologist, Forester, Fuels Specialist | Establish baseline by 2008 where needed. Trend data will be duplicated in 2016 and may be duplicated during additional years prior to 2016 as determined by need, priorities and available resources. |
| Watershed Evaluation | Analysis, Interpretation, Evaluation and Recommendations | ID team | FY2016/2017 |

Budget Requirements

This monitoring plan was prepared with the assumption that funding will remain at or near existing levels for the foreseeable future. In this light, it is anticipated that the bulk of the monitoring load will have to be borne by the existing range, wildlife, fisheries, forestry, fuels, hydrology, recreation, wilderness and cultural resource specialists along with a minimum of six seasonal employees (technicians) each field season for the duration of this plan.