

## CHAPTER 4 – MONITORING PLANS

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### 4.1 Tres Rios Field Office Monitoring Plan

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#### ***4.1.1 Implementation of the RMP***

Implementation of the RMP begins once the Record of Decision for the Proposed LRMP is signed. Decisions made through the planning process are implemented over the life of the RMP. Some of the decisions are immediate and go into effect with the Record of Decision, while other decisions would be implemented over time after site-specific environmental review is completed. In addition, specific programs have requirements that must be followed in order to make certain decisions effective. An example of a land use plan decision that requires an additional action for implementation would be a recommendation to withdraw lands from entry under the 1872 mining laws. Formal action requiring Secretarial-level review and decision making would follow if the BLM planning process results in a withdrawal recommendation and the applicable regulations in 43 CFR 2300 are followed.

Any future proposals or management actions will be reviewed against the RMP to determine if the proposal is in conformance with the RMP. While the FEIS for the TRFO RMP provides the compliance with NEPA for the broad-scale decisions that are made in the Record of Decision, it does not replace the requirement to comply with NEPA for most site-specific implementation actions.

During the life of the RMP, the BLM expects that new information gathered from field inventories and assessments, research, other agency studies, and other sources will update baseline data or support new management techniques, BMPs, and scientific principles. To the extent that such new information or actions address issues covered in the plan, the BLM will integrate the data through plan maintenance. In cases where new information would cause a more significant change in planning direction, a plan amendment may be required.

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#### ***4.1.2 Land Use Plan Implementation Monitoring***

Due to staffing and funding levels, monitoring is prioritized consistent with the goals and objectives of the RMP in cooperation with local, state, and other federal agencies.

The TRFO conducts monitoring and evaluation of RMP decisions to measure the effectiveness of the management action and allowable use decisions in achieving the RMP's goal and objectives. Monitoring and evaluation analyzes the current resource conditions as a result of implemented actions and identifies and recommends alternatives or modified actions, as necessary, to reach established objectives and goals. This process provides the optimum means to check the effectiveness of management actions. Because the capability to execute the process at the optimum level can vary from year to year, monitoring will be prioritized. BLM would use data collected by other agencies, local governments, and other sources when appropriate and available.

Plan implementation is a continuous process occurring over the life of the resource management plan that will consider changing circumstances and new information through monitoring. The goal is to maintain a dynamic resource management plan that is evaluated and amended if necessary on an issue-by-issue basis.

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#### ***4.1.3 Data Collection***

In cooperation with local, state, and other federal agencies, the BLM will collect, analyze, and report monitoring data that allow for the determination of cause and effect, conditions, trends, and predictive modeling of land use authorizations. Monitoring methods are implemented to collect data that establish current conditions and reveal any change in the indicators. Monitoring techniques consider when, where, and frequency. The data collected through monitoring provide a variety of information applicable to one or more resource uses. To increase effectiveness, efficiency, and eliminate duplication, monitoring methods

should be designed to address as many uses as possible. The BLM will rely upon cooperating agencies for the funding, facilities, and labor to assist in or perform this data collection.

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#### **4.1.4 Monitoring**

Monitoring is the repeated measurement of activities and conditions over time. Monitoring data gathered over time is examined and used to draw conclusions on whether management actions are meeting stated objectives, and if not, why. Conclusions are then used to make recommendations on whether to continue current management or what changes need to be made in management practices to meet objectives.

Monitoring determines whether planned activities have been implemented in the manner prescribed by the plan. This monitoring documents BLM's progress toward full implementation of the land use plan decision. There are no specific thresholds or indicators required for this type of monitoring.

Monitoring also is used to determine if the implementation of activities has achieved the desired goals and objectives. This requires knowledge of the objectives established in the RMP as well as indicators that can be measured. Indicators are established by technical specialists in order to address specific questions, and thus avoid collection of unnecessary data. Success is measured against the benchmark of achieving desired future conditions established by the plan.

Monitoring is also used to ascertain whether a cause-and-effect relationship exists among management activities or resources being managed. It confirms whether the predicted results occurred and if assumptions and models used to develop the plan are correct. This type of monitoring is often done by contract with another agency, academic institution, or other entity, and is usually expensive and time consuming since results are not known for many years.

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#### **4.1.5 Components of the Monitoring Plan**

The monitoring plan presented in the tables below contains seven components that link monitoring efforts directly to the plan components presented in this RMP, and guide monitoring activity for each element of the plan. These components are focused around selected desired conditions and are designed to test relevant assumptions, track relevant changes, and measure management effectiveness and progress towards achieving or maintaining the RMP's desired conditions.

1. **Program Element:** BLM program elements are defined as specific activities or products for which the BLM captures cost data (i.e., determines cost "drivers," collects activity data, calculates the cost of delivering that activity or product). The description of each program element is followed by its two-letter code.
2. **Frequency of Reporting:** Frequency of reporting describes the timing of monitoring and evaluation efforts. Much data are collected annually, while other data are collected at longer or shorter intervals based on the length of time needed to discern a measureable change.
3. **Desired Conditions:** The desired conditions are selected from Chapters 2 and 3 of the RMP and serve as the basis for the monitoring plan. These are the "drivers" of the monitoring plan and provide the "questions" that this monitoring plan seeks to answer.
4. **Objectives:** The objectives are projections of measureable and time-specific outcomes or accomplishments that, if achieved, would contribute to maintaining or reaching desired conditions during the life of the RMP. They relate directly to the desired conditions and are also selected from Chapters 2 and 3 of the RMP.
5. **Scale:** Scale describes the level of analysis with respect to land size or level of application. This measure is important in describing impacts dealing with habitat heterogeneity and population viability issues, as well as describing cumulative impacts related to, or resulting from, management actions.
6. **Performance Measures and Indicators:** This column identifies indicators that will be used to gauge or track accomplishments that lead the TRFO toward meeting objectives and desired conditions. These indicators provide a measureable quantitative or qualitative parameter.
7. **Sources and Partners:** Potential data sources for information and partners that may be involved in providing input into the monitoring process or identifying areas where research may be needed.

**Table 4.1.1: Terrestrial Ecosystems**

<b>Program Element</b>	<b>Frequency of Reporting</b>	<b>Desired Condition</b>	<b>Objectives</b>	<b>Scale</b>	<b>Performance Measures/ Indicators</b>	<b>Sources and Partners</b>
Monitor Fuels Treatment (MT), Evaluate Rangeland Health (MJ), Monitor Terrestrial Habitat (MQ), Monitor Fuels Treatment in Wildland Urban Interface (LC)	10 years  15 years	<b>2.2.1</b> The composition, structure, and function of terrestrial ecosystems are influenced by natural ecological processes, including disturbance events such as fire, infestations by insects or disease, winds, and flooding.	<b>2.2.44</b> Within 10 years, inventory and map stand structure changes that have resulted from spruce beetle mortality and wildfire.  <b>2.2.52</b> After natural disturbance events or during restoration projects over the next 15 years, increase the variety of native non-commercial tree and shrub species on a minimum of 25 acres of TRFO lands.	Landscape	Acres	Rangeland Improvement Project System (RIPS), NFPORS
Monitor Terrestrial Habitat (MQ), Evaluate Weed Treatments (MK), Monitor Fuels Treatment (MT)	15 years  30 years of review at 10-year increments  15 years	<b>2.2.4</b> Future biodiversity, especially for endangered, rare, or dwindling species, is protected in the face of a changing climate by safeguarding habitats, preserving genetic diversity, and cooperating with seed banking efforts that provide secure, long-term storage of plant genetic resources.  <b>2.2.16</b> Local seeds of desirable native plant species are available for revegetation and restoration efforts.	<b>2.2.49</b> Over the next 15 years, secure a reliable source of local seed stock for eight or more native grass, forb, and shrub species (including Arizona fescue ( <i>Festuca arizonica</i> )) for use in revegetation and restoration projects.  <b>2.2.50</b> Over the life of the RMP, collect local seed from ten vulnerable native grass, forb, and shrub species (including alpine) in order to protect genetic sources.  <b>2.2.52</b> After natural disturbance events or during restoration projects over the next 15 years, increase the variety of native non-commercial tree and shrub species on a minimum of 25 acres of TRFO lands.  <b>2.2.53</b> Over the next 15 years, revegetate and reclaim five acres of TRFO lands using native early-successional plant species developed from local plant sources in order to accelerate restoration success.	Landscape	Acres	

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and Partners
Monitor Fuels Treatment in Wildland Urban Interface (LC), Monitor Fuels Treatment (MT), Monitor Terrestrial Habitat (MQ)	5 years	<p><b>2.2.9</b> Forested terrestrial ecosystems display a FRCC of 1.</p> <p><b>2.2.14</b> Forested terrestrial ecosystems have stand structures and tree species composition that offer resistance and resilience to changes in climate (including extreme weather events) and epidemic insect or disease outbreaks.</p> <p><b>2.2.21</b> Ponderosa pine, warm-dry mixed conifer, and cool-moist mixed conifer forest stands in the old-growth development stage that have not been previously harvested are managed for their old-growth values through active or passive management.</p> <p><b>2.2.22</b> Ponderosa Pine Forest Desired Condition</p> <p><b>2.2.23</b> Warm Dry Mixed Conifer Forest Desired Condition</p> <p><b>2.2.24</b> Cool Moist Mixed Conifer Forest Desired Condition</p>	<p><b>2.2.45</b> Within 15 years, increase the percentage of ponderosa pine forest in the young development stage from zero to 3% through the use of mechanical treatments and prescribed or natural fire.</p> <p><b>2.2.46</b> Within 15 years, increase the percentage of warm-dry mixed conifer forest in the young development stage from zero to 3% through the use of mechanical treatments and prescribed or natural fire.</p> <p><b>2.2.47</b> Within 15 years, improve the composition, structure, and function of 5,000 acres of ponderosa pine forest through the use of low-intensity fire.</p>	Landscape	Acres of treatment and/or fire size	RIPS, project monitoring, NFPORS

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and Partners
Monitor Fuels Treatment (MT), Evaluate Rangeland Health (MJ), Monitor Terrestrial Habitat (MQ), Evaluate Weed Treatments (MK), Monitor Fuels Treatment in Wildland Urban Interface (LC)	5 years	<p><b>2.2.11</b> The abundance and distribution of native grasses in semi-desert grasslands, sagebrush shrublands, pinyon-juniper woodlands, and semi-desert shrublands are maintained or increased.</p> <p><b>2.2.27</b> Pinyon-Juniper Woodland Desired Condition</p> <p><b>2.2.29</b> Desired conditions for Sagebrush Shrublands</p> <p><b>2.2.30</b> Desired conditions for Semi-Desert Shrublands</p> <p><b>2.2.31</b> Desired conditions for Semi-Desert Grasslands</p>	<p><b>2.2.48</b> Within 15 years, improve the abundance and distribution of perennial native bunchgrasses on 3,000 acres of semi-desert shrublands or grasslands within TRFO.</p>	Landscape	Acres	RIPS, NFPORS
Evaluate Rangeland Health (MJ), Monitor Terrestrial Habitat (MQ), Evaluate Weed Treatments (MK)	10 years	<p><b>2.2.33</b> Alpine terrestrial ecosystems sustain their ecosystem diversity. They display a diverse composition of desirable native plant species and vegetation communities (including fellfield and turf types). Invasive plant species are absent or rare.</p>	<p><b>2.2.50</b> Over the life of the RMP, collect seed from 10 local vulnerable grass, forb, and shrub species, including some alpine species, for long-term storage to protect genetic sources.</p> <p><b>2.2.54</b> Over the next 20 years, enhance the resiliency of alpine ecosystems and provide refugia for alpine- dependent species on 100 acres of TRFO lands through implementing recreation management plans, completing mine land reclamation, or conducting other management activities.</p>	Landscape and project	Acres	

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and Partners
Monitor Lake/Wetland Habitat (MN), Monitor Terrestrial Habitat (MQ)	Annually in occupied critical habitat, and once every 5 years in unoccupied critical habitat	<p><b>2.2.8</b> Terrestrial ecosystems, including habitat for special status plant species, are productive, sustainable, and resilient, and provide goods and services over the long term.</p> <p><b>2.2.10</b> Canyon escarpments, and the terrestrial ecosystems that occur on them, serve as refugia for native biota. These escarpments are associated with the following canyons: Lower Dolores River, Wild Steer, Coyote Wash Spring, and McIntyre. They also include the Mesa Verde Escarpment.</p> <p><b>2.2.39</b> Fens, wetlands, and hanging gardens have the water sources and hydrologic systems necessary to support and sustain the special status plant species associated with them.</p> <p><b>2.2.42</b> Areas identified as critical habitat or proposed critical habitat for federally listed plant species have the characteristics necessary to provide for the growth and reproduction of the federally listed plant species for which they were designated.</p>	Over the next 10 years, monitor 20 known special status plant species locations and their habitats.	Project and landscape	<p>Acres evaluated; condition of special status species habitat; continued presence of special status species in these habitats.</p> <p>In occupied critical habitat for Pagosa skyrocket, the indicator is the continued presence of the species.</p> <p>In unoccupied critical habitat for Pagosa skyrocket, the indicators are the presence of suitable plant communities, habitat for pollinators, and appropriate disturbance regimes.</p>	Colorado Natural Heritage Program, USFWS
Evaluate Rangeland Health (MJ), Monitor Grazing Allotments (ML), Monitor Terrestrial Habitat (MQ)	5 years	<p><b>2.2.34</b> Soil productivity is maintained at or trending towards site potential.</p> <p><b>2.2.36</b> Ground cover (vegetation and litter) is adequate to protect soils and prevent erosion.</p> <p><b>2.2.38</b> Biological soil crusts are maintained or increased in pinyon-juniper woodlands, sagebrush shrublands, and semi-desert shrublands and grasslands.</p>	<p><b>2.2.43</b> Within 10 years, restore or improve soil productivity and soil carbon on at least 5 miles of routes that will be closed or decommissioned.</p> <p><b>2.2.51</b> Use locally produced biochar to sequester carbon, reduce erosion, and enhance soil productivity and water retention on a minimum of 0.5 acre per year for 5 years.</p>	Project and landscape	Acres	

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and Partners
Monitor Terrestrial Habitat (MQ)	Ongoing	2.2.7 Old growth ponderosa pine, old growth pinyon-juniper, and old growth warm-dry mixed conifer forests are more abundant, occupy more acreage, and are well distributed.	Develop an old-growth database and conduct old-growth inventories in potential old-growth stands of ponderosa pine, warm-dry mixed conifer, and pinyon-juniper.	Project and landscape	Development of an old-growth database	Old-growth database (to be developed)

Table 4.1.2: Terrestrial Wildlife

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Inventory Terrestrial Habitat (CB)	Annual	<p>2.3.1 Wildlife populations are self-sustaining, connected, and genetically diverse across TRFO lands.</p> <p>2.3.3 Invasive exotic wildlife species and diseases do not become established within the planning area. Existing invasive exotic wildlife species and diseases do not spread.</p> <p>2.3.4 Habitat components (e.g., snags and downed logs) are maintained. Unique habitat types (e.g., springs, seeps, willow carrs, caves, and cliffs) support associated flora and fauna (with abundance and distribution commensurate with the capability of the land).</p> <p>2.3.7 Snag and downed wood features occur in quantities that support self-sustaining populations of associated species.</p> <p>2.3.8 Effective raptor nesting habitat occurs throughout the planning area with abundance and distribution commensurate with the capability of the land to sustain populations.</p>	2.3.23 Inventory and monitoring: Improve knowledge on the distribution of wildlife special status species and their habitats by inventorying habitat and species as identified in the RMP monitoring section over the life of the RMP. Work with conservation partners in the study, management, and monitoring of these species.	Project to planning area (varies)	Acres inventoried	BLM, SJNF, CPW, Colorado Natural Heritage Program

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Apply Shrub/Grass Vegetation Treatments (JA)	Annual	<b>2.3.9.</b> Ecosystems and habitat conditions for terrestrial wildlife species sensitive to human disturbance are maintained.	<p><b>2.3.19</b> Treat 2,000 or more acres of vegetation over the life of the plan to improve habitat that supports terrestrial wildlife across the planning area.</p> <p><b>2.3.20</b> Gunnison sage-grouse: Improve habitat for Gunnison sage-grouse when conducting resource management actions within occupied habitat.</p>	Project	Acres treated	BLM
Implement Threatened and Endangered Species Recovery Actions (JP)	Annual	<b>2.3.15</b> Areas identified as critical habitat or proposed critical habitat for special status wildlife species have the characteristics to support sustainable populations, promoting recovery of the species.	<b>2.3.20</b> Gunnison sage-grouse: Improve habitat for Gunnison sage-grouse when conducting resource management actions within occupied habitat.	Project	Recovery actions preformed	BLM, USFWS, San Miguel Gunnison Sage-grouse Working Group
Implement Conservation Actions for Non-ESA Species and Communities	Annual	<b>2.3.17</b> Management actions maintain or improve habitat conditions for special status species, contributing to the stability and/or recovery of these species.	<p><b>2.3.19</b> Treat 2,000 or more acres of vegetation over the life of the plan to improve habitat that supports sustainable populations of terrestrial wildlife across the planning area.</p> <p><b>2.3.21</b> Nokomis fritillary butterfly: Over the life of the RMP, restore the hydrologic conditions and plant communities during project implementation at springs or seeps capable of supporting Nokomis fritillary while, at the same time, retaining the water development for livestock or other uses.</p>	Project	Actions performed	BLM

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Terrestrial Habitat (MQ)	Annual	<p><b>2.3.2</b> Big game severe winter range, winter concentration areas, and production areas are capable of supporting populations that meet State population objectives. These areas provide sustainable forage and habitat in areas with acceptable levels of human disturbance that do not reduce habitat effectiveness.</p> <p><b>2.3.4</b> Habitat components (e.g., snags and downed logs) are maintained. Unique habitat types (e.g., springs, seeps, willow carrs, caves, and cliffs) support associated flora and fauna (with abundance and distribution commensurate with the capability of the land).</p> <p><b>2.3.7</b> Snag and downed wood features occur in quantities that support self-sustaining populations of associated species.</p> <p><b>2.3.8</b> Effective raptor nesting habitat occurs throughout the planning area with abundance and distribution commensurate with the capability of the land to sustain populations.</p> <p><b>2.3.9</b> Ecosystems and habitat conditions for terrestrial wildlife species sensitive to human disturbance are maintained.</p> <p><b>2.3.10</b> Vegetation openings created through management actions preserve the natural patchiness inherent in Southern Rocky Mountain ecosystems.</p> <p><b>2.3.11</b> Habitat continuity and travel corridors exist and persist to facilitate species movement and establishment into newly suitable areas as a result of changing habitats.</p> <p><b>2.3.12</b> Populations are conserved by maintaining or improving habitat availability and quality through the incorporation of conservation strategies and species' habitat needs during project development and implementation.</p> <p><b>2.3.14</b> Disturbances from management activities occur at levels that support critical life functions and sustain key habitat characteristics for wildlife special status species.</p> <p><b>2.3.17</b> Management actions maintain or improve habitat conditions for special status species, contributing to the stability and/or recovery of these species.</p>	<p><b>2.3.23</b> Inventory and monitoring: Improve knowledge regarding the distribution of wildlife special status species and their habitats by inventorying habitat and species as identified in the RMP monitoring section over the life of the RMP. Work with conservation partners in the study, management, and monitoring of these species.</p> <p><b>2.3.24</b> Invasives and disease: Over the life of the RMP, coordinate with CPW to prevent introductions or spread of fish or terrestrial wildlife species, as needed, where there is potential for negative impacts on wildlife special status species.</p>	Project to planning area (varies)	Acres monitored	BLM, USFS, CPW

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Species Populations (MR)	Annual	<p><b>2.3.1</b> Wildlife populations are self-sustaining, connected, and genetically diverse across TRFO lands.</p> <p><b>2.3.2</b> Big game severe winter range, winter concentration areas, and production areas are capable of supporting populations that meet State population objectives. These areas provide sustainable forage and habitat in areas with acceptable levels of human disturbance that do not reduce habitat effectiveness.</p> <p><b>2.3.5</b> Large predator species contribute to ecological diversity and ecosystem functioning.</p> <p><b>2.3.8</b> Effective raptor nesting habitat occurs throughout the planning area with abundance and distribution commensurate with the capability of the land to sustain populations.</p> <p><b>2.3.12</b> Populations are conserved by maintaining or improving habitat availability and quality through the incorporation of conservation strategies and species' habitat needs during project development and implementation.</p> <p><b>2.3.14</b> Disturbances from management activities occur at levels that support critical life functions and sustain key habitat characteristics for wildlife special status species.</p> <p><b>2.3.17</b> Management actions maintain or improve habitat conditions for special status species, contributing to the stability and/or recovery of these species.</p> <p><b>2.3.18</b> Special status species are able to disperse within the planning area and onto adjacent lands, allowing for the interchange between populations and the maintenance of genetic diversity.</p>	<p><b>2.3.23</b> Inventory and monitoring: Improve knowledge regarding the distribution of special status wildlife species and their habitats by inventorying habitat and species as identified in the monitoring section over the life of the RMP. Work with conservation partners in the study, management, and monitoring of these species.</p>	Project to planning area (varies)	Populations monitored	BLM, USFS, CPW, Colorado Natural Heritage Program

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Shrub/Grass Vegetation Treatments (MX)	By project	<p><b>2.3.10</b> Vegetation openings created through management actions preserve the natural patchiness inherent in Southern Rocky Mountain ecosystems.</p> <p><b>2.3.12</b> Populations are conserved by maintaining or improving habitat availability and quality through the incorporation of conservation strategies and species' habitat needs during project development and implementation.</p> <p><b>2.3.14</b> Disturbances from management activities occur at levels that support critical life functions and sustain key habitat characteristics for special status wildlife species.</p>	<p><b>2.3.19</b> Treat 2,000 or more acres of vegetation over the life of the RMP to improve habitat that supports terrestrial wildlife across the planning area.</p> <p><b>2.3.20</b> Gunnison sage-grouse: Improve habitat for Gunnison sage-grouse when conducting resource management actions within occupied habitat.</p>	Project	Acres monitored	
Monitor Steam/Riparian Habitat (MO)	Annual	<p><b>2.5.1</b> Long-term sustainability of aquatic ecosystems is maintained.</p> <p><b>2.5.2</b> Streams, lakes, riparian vegetation, and adjacent uplands provide habitats adequate to maintain healthy aquatic ecosystems capable of supporting a variety of native and desired non-native aquatic communities.</p> <p><b>2.5.3</b> The quantity and quality of aquatic habitats are maintained or enhanced to provide for the long-term sustainability of biological diversity of all native and/or desired non-native vertebrate species.</p> <p><b>2.5.10</b> All native and desired non-native fish species are disease-free and thrive in the vast majority of systems historically capable of supporting such species.</p> <p><b>2.5.11</b> Abundant Colorado River cutthroat trout populations are maintained and other areas are managed for increased abundance.</p>	<p><b>2.5.14</b> Annually evaluate two streams for adequacy of instream flows sufficient to achieve RMP direction.</p> <p><b>2.5.15</b> Annually enhance or restore at least 1 mile of stream habitat to maintain or restore the structure, composition, and function of physical habitat for BLM sensitive species.</p>	Planning area	Miles	BLM, USFS, CPW
Monitor Species Populations (MR)	Annual	<p><b>2.5.3</b> The quantity and quality of aquatic habitats are maintained or enhanced to provide for the long-term sustainability of biological diversity and population viability of all native and/or desired non-native vertebrate species.</p> <p><b>2.5.10</b> All native and desired non-native fish species are disease-free and thrive in the vast majority of systems historically capable of supporting such species.</p> <p><b>2.5.11</b> Abundant Colorado River cutthroat trout populations are maintained and other areas are managed for increased abundance.</p>	<p><b>2.5.15</b> Annually enhance or restore at least 1 mile of stream habitat to maintain or restore the structure, compositions, and function of physical habitat for BLM sensitive species.</p>	Planning area	Miles	BLM, USFS, CPW

**Table 4.1.3: Riparian and Wetland Ecosystems**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Weed Treatments (MK)	5 years	<p><b>2.4.1</b> Riparian area and wetland ecosystems have a diverse composition of desirable native hydrophytic plants that are vigorous and self-perpetuating. Invasive plant species are absent or rare.</p>	<p><b>2.4.13</b> Within 10 years, restore the ecological integrity of two deciduous riparian shrubland sites currently classified as riparian herbaceous lands by increasing the canopy cover of native hydrophytic shrubs by at least 10%.</p> <p><b>2.4.14</b> Within 10 years, determine the functional condition of 25 miles on TRFO of riparian area and wetland ecosystems using the Proper Functioning Condition assessment method (Prichard 1998).</p> <p><b>2.4.16</b> Within 5 years, eradicate tamarisk and Russian olive on two stream reaches or two seeps/springs on TRFO lands, and if needed conduct follow-up treatment to prevent the establishment or spread of other invasive species.</p> <p><b>2.4.17</b> Maintain native riparian and upland ecosystems that have been treated to control non-native species on a minimum of 50 miles of TRFO stream reaches over the next 20 years.</p>	Site, project	Acres evaluated, presence or absence of target weed species, success of weed treatment objectives	Southwest Youth Corps, Canyon Country Youth Corps, Western Youth Corps, The Nature Conservancy, Tamarisk Coalition, Walton Family Foundation

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Lake/Wetland Habitat (MN)	10 years	<p><b>2.4.1</b> Riparian area and wetland ecosystems have a diverse composition of desirable native hydrophytic plants that are vigorous and self-perpetuating. Invasive plant species are absent or rare.</p> <p><b>2.4.2</b> Riparian area and wetland ecosystems have vegetation cover sufficient to catch sediment, dissipate energy, prevent erosion, stabilize stream banks, enhance aquatic and terrestrial wildlife habitat, and promote floodplain development.</p> <p><b>2.4.7</b> The composition, structure, and function of fens and hanging gardens are intact (including their native plant species, organic soils, and hydrology).</p> <p><b>2.4.8</b> Riparian area and wetland ecosystems that contain plant communities with G1, G2, S1, or S2 CNHP/ NatureServe Plant Community conservation status ranks are protected, have habitat to expand into, and have the water quantity and hydrologic systems necessary in order to support and sustain these communities.</p> <p><b>2.4.9</b> Soil productivity is intact on all riparian area and wetland ecosystems in the TRFO.</p> <p><b>2.4.10</b> Long-term levels of soil organic matter and soil nutrients are maintained at acceptable levels on all riparian area and wetland ecosystems in the TRFO.</p> <p><b>2.4.11</b> Ground cover (vegetation and litter) is adequate to protect soils and prevent erosion on all riparian area and wetland ecosystems in the TRFO.</p> <p><b>2.4.12</b> Long term impacts to soils (e.g., erosion, compaction, displacement, puddling, and/or severe burning) from management actions are rare on all riparian area and wetland ecosystems in the TRFO.</p>	<p><b>2.4.15</b> Within 15 years, treat three fens with impaired function.</p> <p><b>2.4.16</b> Within 5 years, eradicate tamarisk and Russian olive on two stream reaches or two seeps/springs on TRFO lands, and conduct follow-up treatment if needed to prevent the establishment or spread of other invasive species.</p>	Site	Acres monitored, proper function of ecosystems	

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Stream Riparian Habitat (MO)	5–10 years	<p><b>2.4.1</b> Riparian area and wetland ecosystems have a diverse composition of desirable native hydrophytic plants that are vigorous and self-perpetuating. Invasive plant species are absent or rare.</p> <p><b>2.4.2</b> Riparian area and wetland ecosystems have vegetation cover sufficient to catch sediment, dissipate energy, prevent erosion, stabilize stream banks, enhance aquatic and terrestrial wildlife habitat, and promote floodplain development.</p> <p><b>2.4.3</b> Forest and shrubland types display hydrophytic trees and shrubs in a variety of size classes; they provide terrestrial and aquatic habitats, stream shading, woody channel debris, aesthetic values, and other ecosystem functions.</p> <p><b>2.4.4</b> Woody debris in a variety of sizes is present in forest and shrubland riparian area and wetland ecosystem types.</p> <p><b>2.4.5</b> Riparian area and wetland ecosystems are resilient to change from disturbances (including floods, fire, and drought) and offer resistance and resilience to changes in climate.</p> <p><b>2.4.6</b> Riparian area and wetland ecosystems have flow regimes and flooding processes that contribute to stream-channel and floodplain development, maintenance, and function, and facilitate the regeneration of native hydrophytic plants (including narrowleaf cottonwood and Rio Grande cottonwood) that depend on flooding for regeneration.</p> <p><b>2.4.8</b> Riparian area and wetland ecosystems that contain plant communities with G1, G2, S1, or S2 CNHP/NatureServe Plant Community conservation status ranks are protected, have habitat to expand into, and have the water quantity and hydrologic systems necessary in order to support and sustain these communities.</p>	<p><b>2.4.13</b> Within 10 years, restore the ecological integrity of two deciduous riparian shrubland sites currently classified as riparian herbaceous lands by increasing the canopy cover of native hydrophytic shrubs by at least 10%.</p> <p><b>2.4.14</b> Within 10 years, determine the functional condition of 25 miles on TRFO of riparian area and wetland ecosystems using the Proper Functioning Condition assessment method (Prichard 1998).</p> <p><b>2.4.16</b> Within 5 years, eradicate tamarisk and Russian olive on two stream reaches or two seeps/springs on TRFO lands, and conduct follow-up treatment if needed to prevent the establishment or spread of other invasive species.</p> <p><b>2.4.17</b> Maintain native riparian and upland ecosystems that have been treated to control non-native species on a minimum of 50 miles of TRFO stream reaches over the next 20 years.</p>	Site, project	Miles monitored, proper function of ecosystems	

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/Indicators	Sources and/or Partners
		<p><b>2.4.9</b> Soil productivity is intact on all riparian area and wetland ecosystems in the TRFO.</p> <p><b>2.4.10</b> Long-term levels of soil organic matter and soil nutrients are maintained at acceptable levels on all riparian area and wetland ecosystems in the TRFO.</p> <p><b>2.4.11</b> Ground cover (vegetation and litter) is adequate to protect soils and prevent erosion on all riparian area and wetland ecosystems in the TRFO.</p> <p><b>2.4.12</b> Long term impacts to soils (e.g., erosion, compaction, displacement, puddling, and/or severe burning) from management actions are rare on all riparian area and wetland ecosystems in the TRFO.</p>				

**Table 4.1.4: Aquatic Ecosystems and Fisheries**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/Indicators	Sources and/or Partners
Inventory Lakes/Wetland Areas (BU)	Annual	<p><b>2.5.2</b> Streams, lakes, riparian vegetation, and adjacent uplands provide habitats adequate to maintain healthy aquatic ecosystems capable of supporting a variety of native and desired non-native aquatic communities.</p> <p><b>2.5.3</b> The quantity and quality of aquatic habitats are maintained or enhanced to provide for the long-term sustainability of biological diversity and population viability of all native and/or desired non-native vertebrate species.</p> <p><b>2.5.7</b> Macroinvertebrate diversity and abundance reflect high water quality.</p> <p><b>2.5.10</b> All native and desired non-native fish species are disease-free and thrive in the vast majority of systems historically capable of supporting such species.</p>		Planning area	Acres inventoried	BLM, USFS, CPW

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures /Indicators	Sources and/or Partners
Inventory Streams/Riparian Areas (BV)	Annual	<p><b>2.5.2</b> Streams, lakes, riparian vegetation, and adjacent uplands provide habitats adequate to maintain healthy aquatic ecosystems capable of supporting a variety of native and desired non-native aquatic communities.</p> <p><b>2.5.3</b> The quantity and quality of aquatic habitats are maintained or enhanced to provide for the long-term sustainability of biological diversity and population viability of all native and/or desired non-native vertebrate species.</p> <p><b>2.5.4</b> Channel characteristics, water quality, flow regimens, and physical habitat features are diverse and appropriately reflect the climate, geology, and natural biota of the area.</p> <p><b>2.5.7</b> Macroinvertebrate diversity and abundance reflect high water quality.</p> <p><b>2.5.10</b> All native and desired non-native fish species are disease-free and thrive in the vast majority of systems historically capable of supporting such species.</p>	<p><b>2.5.15</b> Annually enhance or restore at least 1 mile of stream habitat to maintain or restore the structure, compositions, and function of physical habitat for BLM sensitive species.</p>			
Apply Stream/Riparian Treatments (JG) Construct Lake/Wetland/Stream/Riparian Projects	Annual		<p><b>2.5.15</b> Annually enhance or restore at least 1 mile of stream habitat to maintain or restore the structure, composition, and function of physical habitat for BLM sensitive species.</p> <p><b>2.5.16</b> Over the life of the RMP, connect at least two miles of fragmented stream habitat to provide for aquatic species movement.</p>	Planning area	Miles restored	BLM, CPW

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures /Indicators	Sources and/or Partners
Implement Threatened and Endangered Species Recovery Actions (JP)	By project	<p><b>2.5.10</b> All native and desired non-native fish species are disease-free and thrive in the vast majority of systems historically capable of supporting such species.</p> <p><b>2.5.11</b> Abundant Colorado River cutthroat trout populations are maintained and other areas are managed for increased abundance.</p> <p><b>2.5.12</b> Threats to Colorado River cutthroat trout and its habitat are eliminated or reduced to the greatest extent possible.</p> <p><b>2.5.13</b> The distribution of Colorado River cutthroat trout is increased where ecologically, sociologically, and economically feasible.</p>		Planning area	Miles restored	BLM, CPW
Implement Conservation Actions for Non-ESA Species and Communities (KE)	By project	<p><b>2.5.3</b> The quantity and quality of aquatic habitats are maintained or enhanced to provide for the long-term sustainability of biological diversity and population viability of all native and/or desired non-native vertebrate species.</p>	<p><b>2.5.15</b> Annually, enhance or restore at least 1 mile of stream habitat on BLM lands to maintain or restore the structure, composition, and function of physical habitat for BLM Sensitive Species.</p> <p><b>2.5.16</b> Over the life of the RMP, connect at least 2 miles of fragmented stream habitat on BLM lands to provide for aquatic species movement.</p>	Planning area	Miles restored	BLM, CPW

**Table 4.1.5: Water Resources**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Water Resources (MU)	Annual to every 5 years	<p><b>2.6.1</b> State water quality standards and anti-degradation rules are met and state-classified water uses are supported for all water bodies.</p> <p><b>2.6.2</b> Water quality for impaired water bodies on the State of Colorado’s 303(d) list move toward fully supporting state-classified uses.</p> <p><b>2.6.3</b> State “Outstanding Waters” within the planning area maintain the high levels of water quality necessary for this status.</p> <p><b>2.6.5</b> Water from TRFO lands will meet applicable drinking water standards when given adequate and appropriate treatment. Management activities throughout the planning area protect and/or enhance the water quality of municipal supply watersheds. Enhancement may be achieved by watershed restoration or by other activities.</p> <p><b>2.6.10</b> Potentially usable aquifers and water-bearing intervals possessing groundwater of quality and/or quantity that could provide multiple-use benefits and maintain water quality at natural conditions.</p>	<p><b>2.6.17</b> All approved water developments that involve the use of TRFO lands are permitted pursuant to applicable federal authorizations.</p> <p><b>2.6.18</b> Work with the selenium task force annually to reduce salt delivery to the Upper Colorado River Basin.</p> <p><b>2.6.19</b> Every 5 years, rehabilitate 10 or more acres to reduce erosion and sedimentation delivery to water bodies on BLM lands.</p>	Site, project	Meet water quality standards. Reduce saline contributions to upper Colorado River.	CHPHE, EPA
Monitor BMP Water Resources through Implementation and Effectiveness (MU)	Annual	<p><b>2.6.2</b> Water quality for impaired water bodies on the State’s 303(d) list move toward fully supporting state-classified uses.</p> <p><b>2.6.3</b> State “Outstanding Waters” within the planning area maintain the high levels of water quality necessary for this status.</p> <p><b>2.6.4</b> Watersheds within the planning area containing saline soils exhibit stable upland, riparian, and channel conditions that produce water quality as close as possible to reference conditions and the lowest possible saline contributions to the Upper Colorado River (per the Colorado River Basin Salinity Control Act for the BLM) (see Appendix I for saline watersheds).</p> <p><b>2.6.5</b> Water from TRFO lands will meet applicable drinking water standards when given adequate and appropriate treatment. Management activities throughout the planning area protect and/or enhance the water quality of municipal supply watersheds. Enhancement may be achieved by watershed restoration or by other activities.</p>	<p><b>2.6.20</b> Over the implementation life of the RMP, actively participate in the development of all Total Maximum Daily Load determinations and/or other appropriate options for the restoration of State 303(d)-listed impaired water bodies on BLM lands within the planning area.</p>	Project	Meet water quality standards. BMPs implemented and effective.	Oil/gas/mineral company or operator

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Stream Riparian Habitat (MO)  Monitor Lake/Wetland Habitat (MN)	Annual to every 5 years	<p><b>2.6.5</b> Water from TRFO lands will meet applicable drinking water standards when given adequate and appropriate treatment. Management activities throughout the planning area protect and/or enhance the water quality of municipal supply watersheds. Enhancement may be achieved by watershed restoration or by other activities.</p> <p><b>2.6.6</b> Stream channel types that naturally build floodplains are connected to their floodplains and riparian areas, maintain the ability to transport overbank flows (which occur on an average of every 1.5 years), and are capable of transporting moderate or high flow events.</p> <p><b>2.6.7</b> Physical channel characteristics are in dynamic equilibrium and commensurate with the natural ranges of discharge and sediment load provided to a stream. Streams have the most probable form and expected native riparian vegetation composition within the valley landforms that they occupy and function correctly without management intervention.</p> <p><b>2.6.8</b> Historically disturbed and degraded stream channels recover through floodplain development, the establishment of riparian vegetation with correct structure, composition, and function, and exhibit stable channel geomorphic characteristics.</p> <p><b>2.6.12</b> Upland areas function properly and do not contribute to stream-channel degradation.</p> <p><b>2.6.13</b> The majority of undeveloped and unregulated or free-flowing streams within the planning area are retained in their current undeveloped condition and provide potential reference conditions and offer unique opportunities for aquatic habitat, recreation, species conservation, and pleasing aesthetics.</p>	<p><b>2.6.17</b> All approved water developments that involve the use of TRFO lands are permitted pursuant to applicable federal authorizations.</p> <p><b>2.6.18</b> Work with the selenium task force to reduce salt delivery to the Upper Colorado River Basin.</p> <p><b>2.6.22</b> Routes will be decommissioned as identified through the travel management planning process. Watersheds listed in Appendix I could be considered a priority for decommissioning efforts.</p>	Site, project	Reduce saline contributions to upper Colorado River. Acres rehabilitated or restored in saline watersheds. Acres treated for dust abatement.	CPW, Trout Unlimited

**Table 4.1.5: Rangeland Management and Livestock Grazing**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Issue Grazing Permits/Leases (EE)	Annually	<p><b>2.7.1</b> Rangeland provides forage for qualified local livestock operations and helps ranches remain sustainable and intact.</p> <p><b>2.7.2</b> Rangelands and permitted livestock grazing use contribute to the maintenance of large open spaces on private lands.</p>		Planning area	Number of grazing permits renewed/acres public lands under term grazing permit	
Monitor Grazing Allotments (ML)	Annually	<p><b>2.7.4</b> Rangelands provide healthy and sustainable habitat for wildlife populations that, in turn, support recreational hunting, fishing, and/or viewing (thereby contributing to the local and regional economy).</p> <p><b>2.7.5</b> Rangelands provide diverse, healthy and sustainable plant communities and conserve soil quality.</p>		Planning area/project	Allotments monitored	Grazing permittees
Evaluate Land Health (MJ)	Annually	<p><b>2.7.5</b> Rangelands provide diverse, healthy, and sustainable plant communities and conserve soil quality.</p>		Project area	Number of land health assessments completed	Grazing permittees
Inspect Allotments for Grazing Authorization Compliance (NA)	Annually	<p><b>2.7.1</b> Rangeland provides forage for qualified local livestock operations and helps ranches remain sustainable and intact.</p> <p><b>2.7.4</b> Rangelands provide healthy and sustainable habitat for wildlife populations that, in turn, support recreational hunting, fishing, and/or viewing (thereby contributing to the local and regional economy).</p> <p><b>2.7.5</b> Rangelands provide diverse, healthy and sustainable plant communities and conserve soil quality.</p>	<p><b>2.7.8</b> Annually administer at least 25% of active grazing allotments to standard on a priority basis, ensuring that all active grazing allotments during the life of the plan receive appropriate administration. Work with grazing permittees and peers to resolve livestock grazing management issues. Take appropriate administrative action as needed to improve livestock grazing management.</p>	Project	Allotments inspected	Grazing permittees

**Table 4.1.6: Invasive Species**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Inventory for Presence of Invasive and/or Noxious Weeds (BS)	5 years	<p><b>2.8.3</b> Invasive species, both terrestrial and aquatic, are absent or rare within the planning area, and are not influencing native populations or ecosystem function.</p> <p><b>2.8.4</b> Invasive species are not introduced or spread within protected areas.</p> <p><b>2.8.9</b> Over the life of the RMP, eradicate newly established invasive species, especially Colorado Class A noxious species, from BLM lands.</p>	<p><b>2.8.6</b> Within 15 years, contain priority Class B invasive species identified in the Invasive Species Action Plan.</p>	Project to planning area (varies)	Acres inventoried	Cooperators and contractors
Apply Weed Treatments (JD)	5 years	<p><b>2.8.2</b> Federal lands have a transportation system composed of specific roads and trails that do not contribute to the spread of invasive species along travel corridors.</p> <p><b>2.8.3</b> Invasive species, both terrestrial and aquatic, are absent or rare within the planning area and are not influencing native populations or ecosystem function.</p> <p><b>2.8.4</b> Invasive species are not introduced or spread within protected areas.</p>	<p><b>2.8.6</b> Within 15 years, contain priority Class B invasive species identified in the Invasive Species Action Plan.</p> <p><b>2.8.7</b> Within 15 years, increase annual treatment of noxious weeds to 10% of known infested acres.</p> <p><b>2.8.8</b> Over the life of the RMP, include backcountry treatment within the total annual noxious weed treatment target.</p> <p><b>2.8.9</b> Over the life of the RMP, eradicate newly established invasive species, especially Colorado Class A noxious species.</p>	Project to planning area (varies)	Acres treated	Cooperators and contractors

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Evaluate Weed Treatments (MK)	5 years	<p><b>2.8.3</b> Invasive species, both terrestrial and aquatic, are absent or rare within the planning area and are not influencing native populations or ecosystem function.</p> <p><b>2.8.5</b> Management activities do not contribute to the spread of invasive annual plants or other invasive species.</p>	<p><b>2.8.6</b> Within 15 years, contain priority Class B invasive species identified in the Invasive Species Action Plan.</p> <p><b>2.8.9</b> Over the life of the RMP, eradicate newly established invasive species, especially Colorado Class A noxious species.</p>	Project to planning area (varies)	Acres monitored	Cooperators and contractors

**Table 4.1.7: Wildland Fire and Fuels**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Implement Fuels Treatments by prescribed fire Within the WUI (JW), Reduce Fuels Mechanically within WUI (JT), Reduce Hazardous Fuels by other means within WUI (JU)	Annually	<p><b>2.11.2</b> Wildfire behavior in the WUI (in and around developed areas and communities) does not result in damage to property and protects public safety.</p> <p><b>2.11.4</b> Use of wildland fire and fuels reduction treatments creates vegetation conditions that reduce the threat to real property and infrastructure from wildfire.</p> <p><b>2.11.5</b> The WUI will have defensible space and dispersed patterns of fuel conditions that favorably modify wildfire behavior and reduce the rate of wildfire spread in and around at-risk communities.</p>	<b>2.11.10</b> Annually for the next 10 years, reduce hazardous fuels on an average of 1,000 acres of TRFO lands in the WUI.	TRFO	Acres treated	NFPORS

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Implement Fuels Treatments Outside WUI Using Prescribed fire (JM), Implement Fuels Treatment Mechanically outside of WUI (JQ), Implement Fuels Treatment by other means outside of WUI (JR), Implement Fuels Treatments by prescribed fire Within the WUI (JW), Reduce Fuels Mechanically within WUI (JT), Reduce Hazardous Fuels by other means within WUI (JU)	Annually	<p><b>2.11.6</b> Major vegetation types reflect little or no departure from historic range of variation of fire frequency and intensity (e.g., reflect FRCC 1).</p> <p><b>2.11.7</b> Planned and unplanned fire ignitions are used to increase resiliency and diversity across all forest and rangeland vegetation types.</p> <p><b>2.11.8</b> The occurrence of low elevation fires burning upward into spruce-fir forest will increase over time to promote the heterogeneity of spruce-fir forests.</p>	<p><b>2.11.10</b> Annually for the next 10 years, complete an average of 1,000 acres of fuels reduction and resource enhancement on TRFO lands, utilizing fire managed for resource benefit.</p>	TRFO	Acres treated	NFPORS

**Table 4.1.8: Air Quality**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Monitor Air Quality and Climatic Conditions (MI)	Annual	<p><b>2.12.2</b> Air quality for Class II Areas within the planning area are maintained or improved with respect to pollutant concentrations so that human health and the integrity of associated aquatic and terrestrial ecosystem components are protected.</p> <p><b>2.12.3</b> Activities conducted in the TRFO support natural air quality conditions at nearby Class I areas outside the planning area (such as Mesa Verde National Park).</p> <p><b>2.12.4</b> Visibility at designated scenic vistas in Class II areas is maintained or improved within the planning area (see desired conditions in Section 2.16).</p> <p><b>2.12.6</b> Management activities in the TRFO control dust in order to minimize impacts of dust-on-snow events.</p>	<p><b>2.12.9</b> Over the implementation-life of the RMP, prevent or reduce the atmospheric deposition of nitrogen and sulfur and allow no more than a 10% change from the established baseline for lakes with an acid neutralizing capacity (ANC) <math>\geq 25</math> microequivalents per liter (<math>\mu\text{eq/L}</math>) and no more than 1 <math>\mu\text{eq/L}</math> decrease in ANC for lakes with an <math>\text{ANC} &lt; 25 \mu\text{eq/L}</math>.</p>	TRFO	Meet air quality standards, reduce atmospheric deposition of pollutants, reduce particulate pollution (dust)	CDPHE, EPA, USFS, National Park Service, oil and gas companies/ operators

**Table 4.1.9: Access and Travel Management**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Inventory Linear Recreation Resources (BY), Trail Annual Maintenance (ID), Trail Deferred Maintenance (IE), Monitor Linear Recreation Objectives (MV), Road Condition Assessment (GU), Trail Condition Assessment (GY), Bridge Condition Assessment (GX)	Annual	<p><b>2.13.1</b> The transportation system for TRFO lands within the planning area consists of roads, high-clearance and primitive roads, trails, and bridges that are fiscally sustainable and safe as appropriate for the designated use or desired user experience. The system allows for the use of and enjoyment by the public and meets resource management objectives. Sufficient condition surveys and inspections are conducted to promote road safety and prioritize road maintenance expenditures.</p> <p><b>2.13.2</b> The TRFO transportation system provides reasonable and legal access for resource management and recreation and is dynamic and adaptable to resource and user needs.</p> <p><b>2.13.5</b> The road and trail system in the planning area has adequate destination signage, mapping, and route markers to assist transportation system users in navigating throughout the TRFO.</p> <p><b>2.13.10</b> Motorized and non-motorized users, as well as local, state, tribal, and other federal agencies, are actively engaged in travel management planning, route designation and implementation, and route monitoring for TRFO lands.</p>	<p><b>2.13.13</b> Develop maintenance, monitoring, signing, and implementation plans for TRFO routes during the comprehensive travel management planning process, utilizing guidance provided in BLM H-8342, Travel and Transportation Handbook (2012). Designated routes will be assigned maintenance intensities at that time. Objectives by maintenance intensity level are described in Appendix A of BLM Roads Manual 9113 (2011).</p>	TRFO planning area	Maintain a safe, fiscally sustainable transportation system	BLM road and trail inventory database, BLM staff report, partners inventory and report

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
<p>Travel management plans completed (DA), Provide outreach through interpretation and environmental education (AL), Decommission and rehabilitate roads and trails (JX)</p>	<p>10 years</p>	<p><b>2.13.7</b> Motorized use occurs only on designated roads and trails and in small designated open areas (except as exempted by 36 CFR 212.51 and 43 CFR 8340). No new unauthorized or user-created routes are developed. Any addition of new designated routes to the transportation system will be analyzed using the appropriate planning process and level of environmental analysis.</p> <p><b>2.13.8</b> Roads and trails identified for closure within the TRFO are decommissioned and reestablished with native vegetation cover.</p> <p><b>2.13.9</b> Travel management plans are complete for all TRFO lands within 5 years of adopting this RMP. Travel management planning remains a continuous process designed to improve the transportation system.</p> <p><b>2.13.11</b> Transportation system components are designed, constructed, and maintained to avoid encroaching onto streams and/or riparian areas and wetland ecosystems in ways that impact channel fluctuation or channel geometry (the relationships between channel discharge and channel cross-sectional factors, such as area, width, and depth). Sediment delivery from the transportation system does not measurably impact pool frequency, pool habitat, and/or spawning habitats.</p>	<p><b>2.13.14</b> Develop travel management plans for TRFO lands in accordance with the designation criteria in 43 CFR 8342.1. Routes not included in the designated motorized transportation system will be evaluated for their resource impact potential. Those with high potential for resource impacts will be prioritized for decommissioning as part of the implementation plan for each travel management plan decision. Each implementation plan will identify those routes prioritized for decommissioning, the method(s) that may be used, and a schedule for completion.</p>	<p>TRFO planning area</p>	<p>The transportation system is managed to minimize impacts to resources by limiting motorized travel (excluding oversnow travel) to designated routes and decommissioning undesigned roads and trails</p>	<p>BLM road and trail inventory database, TRFO visitor map</p>

**Table 4.1.10: Heritage and Cultural Resources**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures /Indicators	Sources and/or Partners
Historic Structures Protected, Stabilized, or Restored (KO)	5–10 years	<p><b>2.16.1</b> Significant heritage and cultural resources, such as sites on the NRHP, are maintained in good to excellent physical condition. Significant cultural values are protected or preserved. Sites are preserved and stabilized, may have site-specific management plans, and may be available for interpretation and research. Sites are protected from physical damage and excessive wear and tear resulting from visitor use.</p> <p><b>2.16.7</b> Select historic cabins are restored and adaptively reused for appropriate recreation and/or for interpretive use.</p> <p><b>3.14.5</b> In the Silverton area, high-priority historic resources are stabilized and preserved for future generations.</p>	<p><b>2.16.12</b> Over the implementation life of the RMP, protect/preserve/stabilize at least seven significant heritage/cultural resources with identified deferred maintenance needs that, if not addressed, would result in loss of the resource.</p>	Specific sites-throughout TRFO and the Alpine Loop/Silverton Area	Sites protected, stabilized, or restored	State Historic Preservation Office, Tribes, volunteers, schools, State Historical Fund, grants
Heritage Resources Education and Outreach (AE)	Annual	<p><b>2.16.5</b> Management presence at key heritage and cultural resource sites is provided to protect sensitive or heavily visited sites from inappropriate use or vandalism.</p> <p><b>2.16.9</b> Looting of sites is reduced through increased public awareness and education related to cultural resources. Vandalism at sites is promptly remedied to prevent recurrence.</p>	<p><b>2.16.13</b> Annually, post protective signage and/or surveillance cameras on at least one heritage and cultural resource site at risk for vandalism.</p>	Specific sites	Educational outreach programs; protective signs/fencing	BLM, San Juan Mountains Association

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures /Indicators	Sources and/or Partners
Heritage Resources Education and Outreach (AE)	10–15 years	<p><b>2.16.6</b> Interpretive displays, visitor contacts, and/or brochures are available in order to help visitors and employees understand and appreciate the heritage and cultural resources associated with the planning area. A wide range of heritage activities, experiences, and products (both on- and off-site) are available for visitor enjoyment and education. Off-site activities include museum displays, brochures, audio programs, classroom presentations, and field trips. Public access and interpretive efforts are compatible with the physical, cultural, and recreational settings and values of the resources.</p> <p><b>3.14.1</b> Interpretation of the historic landscapes and features of the Silverton SRMA is made available through a range of effective and appropriate venues. Information is designed to enhance the touring experience and encourage the greatest extent of appreciation and protection of these precious assets.</p>	<b>2.16.17</b> Over the life of the RMP, develop at least one interpretive product in partnership with the Old Spanish Trail Association that interprets the Old Spanish National Historic Trail within the planning area, once ground-truthing has occurred to confirm that the Trail passes through TRFO lands.	Specific sites throughout TRFO and the Alpine Loop and Old Spanish Trail  Silverton Area	Educational outreach programs;  Interpretation developed	TRFO, Old Spanish Trail Association, grants; San Juan County Historical Society
Heritage Resources Intensively Recorded, Evaluated and Studied (FD)  Medium Priority	10–15 years	<b>2.16.8</b> Partnerships are encouraged and expanded in order to provide identification, documentation, monitoring, protection, preservation, education, research, and interpretation.	<b>2.16.16</b> Over the life of the RMP, partner with the Old Spanish Trail Association to ground-truth the location of at least two segments of the Old Spanish National Historic Trail.	Specific sites-Old Spanish Trail	Sites documented	TRFO, Old Spanish Trail Association, grants
Heritage Resources Education and Outreach (AE)	3–5 years	<p><b>3.8.1</b> The Anasazi Culture Area ACEC offers appropriate recreation and interpretive opportunities while archeological resources are preserved.</p> <p><b>3.8.5</b> The relevance and importance values of this ACEC, as described in Appendix U, are maintained.</p> <p><b>3.8.7</b> Recreational activities are actively managed in the designated areas, while protecting and mitigating impacts to cultural resources.</p>		The Anasazi Culture Area ACEC	Educational outreach programs; Interpretation developed	TRFO, San Juan Mountains Association

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures /Indicators	Sources and/or Partners
Heritage Resources Stabilized, Managed and Protected (HF)  Heritage Resources Monitored (MY)  High Priority	Monitor annually,  5 years to avoid sites	<p><b>3.8.2</b> The existing character of the cultural and physical landscape is preserved.</p> <p><b>3.8.4</b> Vegetation is managed to protect and enhance cultural resources.</p>	<p><b>3.8.8</b> Over the life of the RMP, implement site steward and “adopt-a-site” programs.</p> <p><b>3.8.9</b> Within 7 years, reroute or eliminate unauthorized and designated trails to avoid impacts to archeological sites.</p>	The Anasazi Culture Area ACEC	Sites protected and sites monitored	TRFO, San Juan Mountains Association, Southwest Conservation Corps
Heritage Resources Monitored (MY)  High Priority	5 years	<p><b>3.9.5</b> The existing character of the cultural and physical landscape is preserved.</p>	<p><b>3.9.9</b> Over the life of the RMP, conduct phased cultural resources inventory of the area.</p>	Mesa Verde Escarpment	Sites monitored	TRFO, colleges, universities
Acres of Heritage Resource Inventories (BC)  High Priority	10 years	<p><b>3.9.2</b> User-made trails and other routes are rerouted or eliminated in order to avoid impacts to archeological sites.</p>	<p><b>3.9.9</b> Over the life of the RMP, conduct phased cultural resources inventory of the area.</p>	Mesa Verde Escarpment	Acres inventoried	TRFO, colleges, universities, Crow Canyon Archaeological Center, State Historic Preservation Office, grants
Heritage Resources Intensively Recorded, Evaluated and Studied (FD)  High Priority	10 years	<p><b>3.9.5</b> The existing character of the cultural and physical landscape is preserved.</p> <p><b>3.9.6</b> Traditional cultural heritage values associated with cultural resources and landscapes within the ACEC are considered and protected.</p> <p><b>3.9.7</b> Designated routes are limited to maintain the integrity of cultural resource values and for scientific research access.</p> <p><b>3.9.8</b> Opportunities are sought to acquire adjacent lands and/or easements to improve access and protection of cultural resources.</p>	<p><b>3.9.10</b> Over the next 3 years, develop procedures to encourage, foster, and conduct high-quality scientific and scholarly research.</p>	Mesa Verde Escarpment	Sites documented	TRFO

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures /Indicators	Sources and/or Partners
Acres of Heritage Resource Inventories (BC), Heritage Resources Intensively Recorded, Evaluated and Studied (FD), Heritage Resources Education and Outreach (AE)  Medium Priority	10–15 years	<b>3.6.6</b> Partnerships are encouraged and expanded in order to provide identification, documentation, monitoring, protection, preservation, education, research, and interpretation.	<b>3.6.10</b> Over the life of the RMP, inventory high potential historic sites and trail routes along the Old Spanish Trail, develop a national trail management corridor, and establish goals and objectives for national trails in accordance with BLM Manuals 6250 (2012) and 6280 (2012).	Specific sites-Old Spanish Trail	Educational outreach programs;  Interpretation developed;  Acres inventoried;  Sites documented	TRFO, Old Spanish Trail Association, grants

**Table 4.1.11: Paleontology**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Heritage Resources Intensively Recorded, Evaluated and Studied (FD)  Acres of Heritage Resource Inventories (BC)  Medium Priority	10–15 years	<b>2.17.1</b> Acquiring better knowledge of paleontological resources is emphasized.	RMP <b>2.17.4</b> Over the life of the RMP, identify and document paleontological sites and resources.  <b>2.17.5</b> Monitor known paleontological localities in accordance with the Paleontological Resources Protection Act of 2009 and subsequent promulgated regulations.  <b>2.17.6</b> Where feasible, conduct fossil resource inventories in areas where they are needed on a project basis over the life of the RMP.	Site-specific	Sites documented	TRFO, colleges, universities

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Heritage Resources Monitored (MY) Medium Priority	Annual	<b>2.17.3</b> Known dinosaur localities are actively managed for the relevance and importance of Jurassic fossils.	<b>2.17.5</b> Monitor known paleontological localities in accordance with the Paleontological Resources Protection Act of 2009 and subsequent promulgated regulations.	Site-specific and Horse Range Mesa	Sites monitored	TRFO, colleges, universities
Heritage Resources Education and Outreach (AE)	10–15 years	<b>2.17.2</b> Paleontological resources are available for appropriate scientific, educational, and recreational uses by present and future generations.	<b>2.17.7</b> Increase opportunities for outdoor recreational and educational experiences and volunteer projects focused on fossil resource management, and increase the number of partnerships with educational and research institutions.	Planning area	Public outreach	TRFO, colleges, universities

**Table 4.1.12: Minerals and Energy**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Inspect and Verify Production at Mineral Material Sites (NF)	Monthly to Annual – size dependent	<b>2.19.2</b> Mineral materials (including gravel and decorative stone) are available to support resource management needs, personal and hobby use, and commercial pursuits. Aggregate materials in the Grandview area will continue to be developed as needed.  <b>2.19.4</b> Reclamation of mineral exploration, development, and production activities is stable, long term, and implemented as soon as is reasonably possible in order to minimize impacts to other resources.	<b>2.19.8</b> Process requests for mineral materials in a timely manner consistent with RMP direction and applicable laws. Identify areas suitable for, and establish common use area(s) and/or community pits to provide sources of mineral materials to the public.	Site	Production	
Inspect Locatable Mineral Sites for Surface Mgt (NI)	Monthly to Annual	<b>2.19.4</b> Reclamation of mineral exploration, development, and production activities is stable, long-term, and implemented as soon as is reasonably possible in order to minimize impacts to other resources.	None	Site	Sites	

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Conduct Fluid Mineral Inspections, Including Production and Environmental	As required	<b>2.19.5</b> All oil and gas well fields starting at the field development stage and all other established well fields where practicable maximize the collocation of facilities to minimize construction footprints and reduce tailpipe emissions.	<b>2.19.7</b> Over the next 20 years, centralize facilities and engines to minimize the number of well head engines and optimize well engines so they use the minimum cumulative horsepower to obtain the maximum efficiency for all well fields beginning at the field development stage and all other established well fields where practicable.	Sites	Sites/wells ancillary facilities	

**Table 4.1.13: Abandoned Mine Lands**

Program Element	Frequency of Reporting	Desired Condition	Objectives	Scale	Performance Measures/ Indicators	Sources and/or Partners
Integrity and Effectiveness of Installed AML Facilities (JK,HP)	Annual	<b>2.21.3</b> Mine waste repositories are protected and physical safety closures are protected or replaced during any BLM-authorized action.		Project	Sites	Colorado Division of Reclamation Mining and Safety, TRFO
Stream Water Quality in AML Impacted Watersheds (JK)	Annual	<b>2.21.1</b> Abandoned mine reclamation within the planning area does not negatively impact water quality or historic resource protection.	<b>2.21.7</b> Stabilize, rehabilitate, or restore AML on priority sites on an annual basis in order to improve water quality and watershed condition.	Watershed	Samples	EPA, Animas River Stakeholders Group and other watershed groups, Riverwatch