

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter discusses the environmental consequences of selection and implementation of each of the alternatives described in Chapter 2. The discussion for each alternative identifies impacts on each resource component of the affected environment described in Chapter 3. All practical mitigation measures have been incorporated into the design and description of the alternatives. Therefore, impacts identified in this chapter are unavoidable and would occur if the alternatives were implemented.

A 20 year time frame has been used for the assessment of environmental consequences for the long term unless otherwise stated. The following elements of the environment were analyzed but are not addressed since no significant impacts were identified: climate, topography, flood plains, prime or unique farmlands, and social conditions.

ALTERNATIVE A

RANGELAND RESOURCES

Soils

Broad based erosion rates would show little significant change from the current average of 2.0 tons/acre/year. Increases of up to 0.20 tons/acre/year (10 percent) are estimated over the long-term (20 year period) under current management. This increase is within the estimated average soil loss tolerance of 2 to 3 tons/acre/year. Certain uses and actions could result in high amounts of erosion on specific areas with both short and long term effects. These areas would be a small percent of the RMP area and would not have a pronounced effect on the overall average rate.

One of the greatest impacts on soils would occur on limited and open ORV use areas. Areas most affected would be the Boise Front, Clay Peak and Little Gem cycle parks, Weiser Dunes, Pickles Butte, Parma, and Dewey play areas. Moderate to severe rill and gully erosion could be expected to occur.

Agricultural use on 560 acres of transferred public lands could cause localized but significant long-term increases in soil loss. Off-site soil movement on farmed areas is expected to be at least 10 times higher than on rangeland (SCS 1984). Removal of vegetative cover and surface disturbance would result in a significant increase in wind blown particulate matter which would decrease the air quality in communities in the vicinity of the development. An increase in off-site soil movement caused by water would be anticipated based on experience with previous agricultural developments.

Construction and use of 2 miles/year of roads over a 20 year period for timber harvest would be on the highly erosive granitic soils. This would result in a short-term (one to three year) significant increase in soil loss and sediment yield to streams. Megahan and Kidd (1972) found that temporary logging roads on high erosion hazard granitic slopes in Idaho greatly

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accelerated on-site surface and mass erosion, causing downstream sediment yields to increase an average of over 45 times for a 6 year study period. Roads and skid trails are the major source of soil loss and sediment during and after timber harvest operations. Erosion and compaction would be minimized by ripping, water barring, reseeding, and closing roads and skid trails after harvest. If clearcutting is utilized, areas would be limited to 40 acres or less. Clearcutting would have the greatest adverse impact on soils because of the substantial decrease in groundcover which increases the potential for accelerated erosion. Selective cutting, where a substantial number of trees are left, can have the least impact on soils. Timber harvest would occur on 100-400 acres annually with an annual cut of approximately 1 million board feet.

Broad based increases in soil erosion would be in part due to the continuing increase in poor range condition, particularly where perennial range species give way to annual species. See "Affected Environment" - Soil section for effects of composition and density on soil erosion. Areas which are highly subject to wildfires, principally the annual range areas, would show accelerated short-term (one to two year) erosion rates as fire removes vegetative cover and fire suppression activities disturb the soil surface. Long-term rates would return to prefire levels or better depending on rehabilitation efforts and success. The moderate to steeply sloping sedimentary and granitic soils of the Boise Front and Black Canyon area may pose serious erosion problems if wildfire removes vegetative cover. Erosion rates in excess of 5 tons/acre are likely.

Full fire suppression and rehabilitation efforts would gradually reduce the total number of acres burned annually. This would reduce soil erosion attributed to wildfires.

Livestock utilization at current levels (66,014 AUMs) over a 20 year period would cause only slight increases (less than 0.2 tons/acre/year) on the broad based erosion level. Livestock grazing would result in continued loss of vegetative cover and soil productivity. Soil compaction would continue to be a problem, especially around water facilities, streambanks, reservoirs, and other livestock concentration areas. The continued grazing practice on steep (slopes greater than 30%) high erosion hazard areas have a high probability of increasing erosion rates in these areas. The 6 miles of proposed pipelines for range improvement would cause short-term (1 year) soil and vegetation disturbances. These would consist of compaction, mixing of soil layers, and removal of vegetative cover.

Right-of-ways (ROWs) would cause varying degrees of disturbance in the RMP area. No significant impact on soil is expected from construction of pipelines, powerlines and telephone lines after the construction is finished. Roads, especially unsurfaced roads, may cause both short and long-term erosion problems. The probability of this happening is very high.

Mineral development and production may cause locally substantial soil erosion depending on the size of the project. Access road construction and other surface disturbing activities would be the primary causes. Overall impacts on soils attributed to mineral activities is not expected to be significant since mineral activity projected over the next 20 years is expected to remain at about the current levels.

Fencing 14 miles and streambank planting of 18 miles of riparian habitat would improve vegetative cover and reduce soil compaction and trampling damage to streambanks. Runoff and soil movement would also be reduced. For a comparison of actions affecting soils by alternative, see Appendix B.

Air Quality

There would be no long-term adverse effects to air quality under this alternative. A one to two day localized decrease in air quality would occur due to burning of slash piles after timber harvest.

Lands transferred for agricultural production would result in an increase in wind blown particulate matter. Associated with crop production is the use of pesticides and fertilizers which would add pollutants to the air for short periods.

Water Quality

Parameters such as ammonia, total inorganic nitrogen, and fecal coliform that are influenced by livestock grazing would slightly improve due to the proposed 14 stream miles of riparian exclosures and the inclusion of 73 stream miles in revised allotment management plans. High fecal coliform count and sedimentation from streambank grazing activities would be eliminated from those stream reaches excluding livestock and reduced in those streams within revised AMPs.

A short-term increase in sedimentation would likely occur on a range of 4-16 miles of streams due to timber harvest activities. A slight increase in sedimentation would occur over the long term on the same 4-16 miles as above from the proposed 40 miles of road construction.

Range fires contribute to high sediment loads in streams due to the loss of upland and riparian vegetative cover. This impact would be minimized by full fire suppression and rehabilitation efforts.

Sedimentation in streams would likely increase in moderate amounts in areas of open ORV use in high erosion hazard areas. Accelerated sedimentation would be a long term impact in those streams with inadequate flushing flows. A slight increase in sedimentation would likely occur in streams in areas of limited and closed ORV use.

Resource management guidelines for the maintenance and protection of riparian and aquatic habitats would have long term positive benefits on the quality of water on public lands by improving management of riparian areas.

Overall, water quality on public lands from this level of management would slightly improve.

Vegetation

The overall rangeland condition would show a decline on 3 to 5% of the RMP area over the projected 20 year period. The decline may not always reflect a total drop in condition class (ie. fair to poor). Many areas would experience a slight decline in rangeland condition but not enough to

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change ratings. Approximate breakdown where decreases are projected are: good decreased - 2% (700 acres), fair decreased - 3% (6,246 acres), poor decreased - 3% (6,150 acres). See Appendix R for a comparison of vegetation condition changes by alternative. For current range condition by allotment see Appendix E and Map 3-2. Trend data are not available.

The greatest decline in condition is expected on the 208,205 acres of fair condition rangeland (45% of the RMP area). This would be primarily due to an increase in annual species (cheatgrass and medusahead wildrye) and a decrease in perennial species (dominantly bunchgrasses) and shrubs (most importantly antelope bitterbrush). Most areas of fair condition range are composed of perennial and annual grasses with or without a shrub/brush component. These are highly susceptible to wildfire, over grazing, and surface disturbing activities. By far wildfires pose the greatest threat. Post fire conditions on many areas favor the rapid increase of annual species and decrease of the less competitive perennial species. This would mainly affect the steep, rough and/or shallow soil areas that would not be reseeded due to limitations. Areas suitable for reseeding following wildfire would be seeded with a non native seed mixture. Depending on success and management of seedings these areas should return to fair or better range condition. Full fire suppression and rehabilitation efforts would gradually reduce the total number of acres burned annually.

Little substantial decline in range condition is projected within 20 years from maintaining current grazing levels. Good and excellent condition areas are more inaccessible and would not receive additional use because of long distances from water and rough or steep terrain. Fair condition areas would show the most decline. Selective grazing by livestock of the most palatable, less plentiful perennial species causes a decrease in their vigor and number allowing annuals to increase.

Off-road vehicle activity would adversely impact range condition on high use areas which tend to be small and scattered. Man caused wildfires and surface disturbance would be the major causes. Generally these areas are in poor condition. Off-road vehicle use in good range condition areas would disturb the soil and vegetation and allow annual species to become established. This would increase the fire danger in these areas.

Most of the 211,639 acres of poor condition range (45% of the RMP area) are dominated by annual grass species. The decline in these areas would be primarily due to selective grazing and/or wildfire removing any remaining native plant species and further invasion of annuals. Exceptions are those areas that are rehabilitated after wildfire by seedings. The post rehabilitation condition would be subject to the success of the seeding and species seeded. Many of these areas are expected to show little success and continue to be dominated by annuals.

The 61,000 acres designated as curlew habitat (Black Canyon area) will be managed to maintain the existing short vegetative cover. Rehabilitation efforts will be designed to meet management objectives.

The 4,200 acres of Columbian sharp-tailed grouse habitat would improve in condition due to special management. Over 70% of the fair and poor condition rangeland is expected to increase in class. Areas currently in

good condition would improve but to the extent of becoming excellent is undetermined.

Candidate and Sensitive Plant Species

Designation and management of 2 research natural areas totaling 475 acres would provide protection and increased vigor of some candidate and sensitive plant populations and increase public awareness of these areas.

Limiting ORV use and conducting site specific right-of-way clearances on 2,545 acres should provide for the continued existence of candidate, sensitive, or uncommon plant species. Some species may increase in numbers due to the protection provided while other plant species would be stabilized but would not have an opportunity to increase. Some species may decrease in numbers outside of these areas because small scattered populations and undiscovered populations would not be protected from grazing, ORV use, annual grass invasion or other hazards.

Due to the lack of restrictions on mineral development on 2,545 acres, some individual plants or small populations could be destroyed. Procedural compliance with the Endangered Species Act of 1973 might keep these impacts below the level of significance to the species as a whole.

Riparian Habitat

The Resource Management Guidelines for the various programs should maintain overall existing riparian habitat quality and minimize impacts of actions in riparian areas.

Land transfer proposal in this alternative would not impact the base of 122 miles of surveyed drainages.

Habitat quality would be maintained on 106 miles of the 122 miles surveyed while 11.0 miles would improve to the next higher condition class due to a combination of reduced stocking levels and aquatic habitat improvement projects. Loss of habitat value due to increased stocking levels would occur on 5 miles of stream riparian habitat.

Revision of 7 existing AMPs would result in some improvement of riparian habitat on 5 miles of perennial streams by including livestock grazing strategies that promote the vigor of streamside woody vegetation, an important component of streambank stability. This management strategy would also benefit 66 miles of surveyed and unsurveyed intermittent riparian habitats.

Proposed timber harvest level of approximately 1 MMBF and the associated 40 miles of road construction would have minimum impact on riparian habitat along the 3-12 miles of potentially impacted perennial streams and 1-4 miles of intermittent drainages within the total harvest acreages. Resource management guidelines would protect riparian vegetation by providing a no-cut buffer strip along drainages and prohibiting road construction within riparian areas (except for crossing where absolutely necessary).

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ORV use in the limited ORV use areas would occur on 25% of the area and would have a slight impact on riparian vegetation within these areas. Drainages are often used as travel corridors for wildlife and humans. With no restrictions on 75% of the area, riparian areas with this open use classification would likely be moderately impacted resulting in long term disturbance of vegetation and soils and short term disturbance of riparian associated wildlife.

Full fire suppression and rehabilitation efforts would have a long term beneficial impact because loss of riparian vegetation due to wildfires would be minimized and gradually reduced.

Loss of riparian habitat attributed to a slight increase in mining activities would be minimal.

Aquatic/Fisheries Habitat

The surveyed aquatic/fisheries habitat base for this alternative is 81 miles of perennial stream. To maintain the high degree of habitat quality on 67 miles of surveyed streams Resource Management Guidelines were developed to minimize impacts. Improvement of degraded habitat to good condition would occur on 14 miles of surveyed streams due to proposed aquatic habitat improvement projects.

Revision of 7 existing AMPs would result in improvements of approximately 5 miles of perennial stream habitat by including livestock grazing strategies that promote the vigor of streamside woody vegetation, an important component of streambank stability. This management would also benefit 68 miles of surveyed and unsurveyed intermittent streamside habitats.

Proposed timber harvest level of approximately 1 MMBF and the associated 40 miles of road construction would impact 3-12 miles of the 39 miles of perennial streams within the total harvest acreages. Also impacted would be 1-4 miles of intermittent drainages. Short term increased sedimentation levels associated with this level of timber harvest would be minimized by Resource Management Guidelines and the rehabilitation of major disturbed areas. A slight increase in stream sedimentation over the long term would result from road construction in high erosion hazard areas and adjacent to perennial drainages. All roads would be stabilized and closures would be considered on a case-by-case basis to further minimize sediment loads.

Restrictions imposed on ORV use on 25% of the area by limited and closed use designations would minimize soil disturbance and associated stream sedimentation. Open use class on 75% of the area would result in a moderate increase in sediment loads in those streams in high erosion hazard use areas.

Although mining activity can be very destructive to the riparian and aquatic community, future mining associated impacts would be minimized by following Resource Management Guidelines.

Redband trout populations would increase over the long term on segments of 6 creeks due to livestock exclusion fencing. Habitat components important for salmonid spawning and rearing would likely improve as