

Grazing Lands Analysis

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Abstract: This inventory and analysis is intended to provide an overview of the grazing lands (pastureland and hayland), present and historical. It was developed by using aerial photography, reviewing watershed documents by the Bureau of Reclamation (BOR), United States Forest Service (USFS), Bureau of Land Management (BLM), Oregon Water Resources Department (OWRD), Natural Resources Conservation Service (NRCS), and through field reconnaissance. The emphasis area is mainly on the Illinois Valley floor and some of the associated uplands.

Introduction

The first year of permanent, non-native settlement in southern Oregon occurred in the early 1850's. Most of the settlers came from the gold fields in California. With them came the first domesticated animals - cattle, sheep, horses, and mules - to the area. "The introduction of livestock in the summer of 1853 supplied a key component in the local diet" (McKinley and Frank 1995). At this time, native grazing lands were in excellent condition. According to McKinley and Frank 1995, "there were uncounted acres of the richest and most succulent grasses upon which to summer grazing animals." Prior to 1975, there were 13 grazing allotments on USFS land within the Illinois River watershed (Siskiyou National Forest, USFS). These allotments covered 113,394 acres and were allotted 923 AUM's (Animal Unit Months-defined later in report). In 1975, some of these allotments were consolidated into the Illinois Valley Coordinated Resource Management Plan. This allotment covered 92,200 acres and was allotted 1,064 AUM's. This allotment was last used in 1982 and closed in 1998. Most of the allotments were closed due to lack of use by the permittees. Today livestock grazing does not occur on USFS land within the watershed. BLM still has a few allotments today, but they cover very few acres and are used sparingly. Later grazing reports do not generally depict grazing lands in any depleted condition.

"Irrigation began in a small way by 1855 and has had a slow increase since that date" (Rogue River Basin Project Illinois Valley Division OR, 1995). Inadequate stream flows in late summer have limited extensive irrigation development. Today there are approximately 9,100 acres in the Illinois River watershed that have water rights (Oregon Water Resources Board, 1998). Most of these acres are in hayland and pastureland and are being irrigated. Forage production is the most common agricultural use of cleared land. According to NRCS, December 1998 (Appendix B, Table 4), Treatment and Management Statistics for Subwatershed, there are 16,600 acres available in the valley for the production of agriculture. The majority is pasture and forage production, while vineyards, truck crops, and tree farms comprise the rest of the acreage.

Summary of Concerns

The health and vigor of most pasturelands and haylands in the Illinois river watershed are in poor and good condition respectively. Continuous season-long grazing, especially on smaller operations, reduces health and vigor. Average annual production on pastureland is approximately 5 AUM's per acre with a potential of approximately 11.5 AUM's per acre. Hayland production averages around 3.5 tons per acre per year with a potential of 5.0 tons per acre per year. The trend on both pastureland and hayland is static.

Scope & Objectives

The majority of the watershed is mountainous and is suitable for forest products. The potential for agriculture production is approximately 16 percent of the watershed and is located primarily in the drainage basins of Deer, Sucker, Althouse Creeks, and along the East and West Fork of the Illinois River. The valley floors are gently rolling with few dome-like hills scattered here and there. Elevation varies from 1,275 feet on the valley floor to over 7,055 feet on Greyback Mountain. The agricultural lands are located on the flatter, deep alluvial plains on the river valley floors. There are approximately 16,600 acres or 16 percent of the watershed that is cleared for agriculture. The major uses are irrigated hayland and pastureland, dry pastureland, and other crops such as truck crops, vineyards, ornamental nurseries, and tree production. Most of the pastureland, hayland, and cropland are irrigated.

Pastureland/Hayland/Cropland

Pastureland: Pastureland is grazing land permanently producing introduced or domesticated native forage species receiving degrees of periodic cultural treatment to enhance forage quality and yields (National Pasture & Range Handbook, 1997). It is principally harvested by grazing animals.

Pastureland was inventoried to determine condition, trend, and production. Condition is the present state on a site in relation to the species for which the site is being managed. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants on a site resemble that of the managed species for that site. Trend is a rating of the direction of change occurring on a site (National Pasture & Range Handbook, 1997). Production is expressed in animal unit months (AUM's), which is the amount of forage required by an animal unit for one month (1,000 pound cow and her calf).

To determine condition, a pasture condition rating analysis was used (see Appendix D). This rating addresses management objective, full stand of plants, high level of fertility, rhizomatous species not sod-bound, weed species, prescribed grazing, and impacts on surface and ground water. A total of 3,500 acres of pastureland was inventoried along Deer Creek, Sucker Creek, West and East Fork Illinois River, Althouse Creek, and the Illinois River. Approximately 2,500 acres or 70 percent of the pastureland is in poor condition, while 700 acres or 20 percent is in fair condition, and 300 acres or 10 percent is in good condition.

Trend was determined using a pasture trend rating analysis (see Appendix D). This rating addresses plant vigor, composition change, soil, and plant residue. Of these acres inventoried, 2,100 acres or 60 percent is static trend, 1,050 acres or 30 percent is upward trend, and 350 acres or 10 percent is downward trend.

Production average is around 5 AUM's per acre per year. To convert AUM's to pounds, multiply AUM's per acre per year by 790 pounds. Pasture production is usually expressed in animal unit months. An animal-unit is a convenient denominator for use in calculating relative grazing impacts of different kinds and classes of domestic livestock and of common wildlife species.

Hayland: Hayland is defined as land used for the production of forage crop, and is harvested primarily by human labor and equipment.

Hayland was inventoried to determine condition, trend, and production. Condition and trend are assessed using the same tools as used for pastureland. Production is expressed in tons per acre per year. A total of approximately 1,500 acres of hayland was inventoried along Deer Creek, Sucker Creek, West and East Fork Illinois River, Althouse Creek, and the Illinois River. Approximately 1,350 acres or 90 percent of the hayland is in good condition, and 150 acres or 10 percent of the hayland is in fair condition. The trend is static for all the acreage inventoried. Production averages 3.5 tons per acre per year.

Cropland: Approximately 600 acres of cropland (truck crops [tomatoes, corn, melons, peppers, etc.], vineyards, and tree farms) are located on the bottomland flood plains. Occasional flooding occurs on these crop fields and can increase sediment into the rivers and streams, and the potential to add nutrients and pesticides into the water is possible.

Results and Discussion

The number of acres of grazing land inventoried was approximately 5,000. Pastureland comprised 3,500 acres or 70 percent of the total, while hayland contained 1,500 acres or 30 percent of the total. It is estimated that the total grazing land acreage in the study area is approximately 10,000. Based on inventoried acres, a projection can be made that the makeup of the total grazing lands would be similar to the number of acres inventoried. In other words, there are approximately 7,000 acres of pastureland and 3,000 acres of hayland in the study area. Also condition, trend, and production could have similar projections based on inventoried acres.

The condition of pastureland and hayland was determined to provide a basis for predicting the extent and direction of change that can result in the plant community because of specific treatment or management. Condition represents a starting point for management towards the potential or towards the objectives selected by the decision-maker. Trend provides information necessary for the operational level of management to ensure that the direction of change will enhance the site and meet the objectives of the

manager. Production is total annual and includes the above-ground parts of plants produced during a single growth year. Production is important so management can allocate forage to be used by livestock and wildlife. Production was determined by estimation.

Most pastures are not producing to their potential. Of the inventoried acres of pastureland, 70 percent of the soils identified are the following: Kerby, Takilma, Abegg, Foehlin, and Evans (Soil Survey of Josephine County Oregon, 1983). The average production potential of these soils is 13 AUM's per acre per year irrigated. The remaining 30 percent are Pollard, Newberg, Camas, Wapato, Central Point, Banning, and Camas-Newberg complex soils (Soil Survey of Josephine County Oregon, 1983). The average production potential of these soils is 11.5 AUM's per acre per year irrigated.

The health and vigor of most pasturelands are in poor condition. This is especially true on smaller operations because many of these lands are continually grazed, which reduces health and vigor of desirable plants. Continuous grazing does not allow desirable plants time to recover and regrow. Continuous grazing will increase the amount of bare ground on a pasture, which in turn will increase soil erosion potential and allow weeds to invade. Grazing management is non-existent on most of the smaller operations. Pastureland in fair condition can probably be improved through management alone, while poor condition pastureland will need a combination of both management and renovation. Practices such as grazing management, reseeding, fencing, riparian buffer strips, irrigation water management, and nutrient management need to be considered for grazing lands

Haylands are also not producing to their potential. Of the inventoried acres of hayland, 65 percent of the soils identified are the following: Foehlin, Kerby, Takilma, and Evans (Soil Survey of Josephine County Oregon, 1983). The potential production of these soils is approximately 5 tons per acre per year of grass/legume hay irrigated. The remaining 35 percent are Abegg, Banning, Pollard, Wapato, Camas, Newberg, Central Point, and Camas-Newberg complex soils. The average production potential for these soils is 5 tons per acre per year.

Many of the small acreages of pasture, hayland, and their farm facilities are located near creeks and rivers and are in flood-prone areas; lack of waste management in these areas increases the potential for impacting water quality. Flooding occurs regularly, which can increase sediment into the creeks and rivers. In some areas streambank erosion has occurred because of livestock access to the stream or river. Winter feeding occurs on many pastures and can cause compaction on some soils in the watershed, which will increase the potential for runoff. Also, excessive trampling will lower forage production, as does compaction. Without grazing management, the plant community is not maintained and over-utilization by livestock can occur, thereby increasing the potential for sedimentation of creeks and rivers. Some grazing lands are under-fertilized while others may be over-fertilized. Soil tests need to be used to determine plant requirements for proper forage growth and production. Over-fertilization increases the prospect for

potential negative impacts to groundwater, while under-fertilization impacts production and may affect potential sedimentation by erosion.

Irrigation water management is not being utilized on most of the irrigated grazing lands, the lack of which can negatively impact the growth of forage plants. Proper application of irrigation water through irrigation water management will increase plant production and conserve water. Also, the chances for sedimentation will be less.

Some pastures have an invasion of annual grasses and forbs. An increase in weeds can lower production and reduce soil protection. Major plant pests found in the watershed include the following: Medusahead, Common St. Johnswort, blackberry, Tansy ragwort, and wild rose. Proper grazing management and irrigation water management can help address plant pests.

Land use changes (particularly from grazing land to urban land) will continue to impact the rural nature of the watershed. With the continuing urbanization, loss of agricultural land will result in decreased open space and probably an increased threat of nutrient pollution of the watershed.

References

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