

Early Use of Crested Wheatgrass Seedings in Halogeton Control

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ABSTRACT: The first large scale seedings of crested wheatgrass in Idaho were prompted by serious sheep losses to the poisonous plant halogeton. Depleted rangelands were seeded as rapidly as funds would permit to curtail the spread of halogeton. The high adaptability of crested wheatgrass to the soils and climatic conditions of the area, along with its ability to dominate the site to the exclusion of annuals, made it a superior candidate for seeding. The seedings were very successful both from the standpoint of restoring an adequate perennial cover on depleted areas as well as providing substantial relief from grazing use on areas not susceptible to treatment.

INTRODUCTION

Serious sheep losses from poisoning by halogeton (Halogeton glomeratus) during the fall of 1947 led to the first large-scale seedings of crested wheatgrass (Agropyron cristatum and A. desertorum) in Idaho. Prior to this loss most range managers were not aware of the presence of halogeton or of its toxic properties. Suddenly substantial concern was generated over the possible impact of halogeton on the entire rangeland livestock industry in Idaho. Immediate action was taken to determine the location of halogeton infestations, to acquaint range users with the physical characteristics and toxic properties of the plant, and to initiate control actions. With the beginning of the next grazing season action was initiated to contain the spread of this poisonous plant.

Chemical Controls

Halogeton is an annual which moves quickly into disturbed areas, often dominating the site. Most of the initial infestations occurred along roadsides

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and in small isolated patches where soil disturbance was prevalent. Therefore a chemical program (2,4-D) was initiated in the hope that this would be an effective means of control. But chemical control was complicated by the fact that halogeton produces two types of seed: one type which germinates readily the next growing season, the other with delayed germination over several years. This characteristic required repeated chemical treatment for several years. As the repeat treatments were applied, more and more of the bordering perennial vegetative cover was killed resulting in an enlargement of the disturbed areas. Consequently, it soon became apparent that chemical control was impossible. Attention was then directed to seeding the depleted areas with a perennial plant that would suppress and crowd out halogeton.

Seeding Controls

The search for a perennial plant for seeding purposes was easy. During the late 1930's and early 1940's, A.C. Hull, Jr., working for the Intermountain Forest and Range Experiment Station, installed several trial seeding plots in the Burley District of the Bureau of Land Management. Each plot, as I recall, had 25 species of both native and introduced range plants that were considered to be good candidates for seeding depleted range lands. Several species did very well but the obvious choice was crested wheatgrass (both standard and fairway) from the standpoint of ease of establishment, adaptability to the soil and climatic conditions, and the ability to dominate the site and crowd out annuals. In addition, crested wheatgrass had adequate and cheap seed supplies.

We proceeded to reseed as much depleted rangeland each year as funds would permit. Most of the work was done under contract. Projects varied in size from a few hundred acres to more than 10,000 acres. The areas were plowed to reduce sagebrush and other competition and to prepare a seed bed. Seed (6 lbs/acre) either was drilled or broadcast with fertilizer spreaders depending on the softness of the seed bed at the time of planting. All projects were fenced and protected from livestock use. Grazing was generally permitted during the fall of the second growing season. Plowing cost was

about \$3.25 per acre, seeding cost was around \$1.00 per acre, and seed cost about \$1.50 per acre. The total cost was around \$6.00 per acre without fencing.

We found that crested wheatgrass could be successfully established on all depleted rangelands within the District with the exception of sites having soil with a high content of soluble salts. Even the dry gravel bars eventually produced an adequate stand of grass, although it often took a couple of years longer for the stand to become established.

The seeding program started out in a rather meager manner since we had to scrounge money from our very limited range improvement and soil and watershed funds. With a large acreage of depleted rangeland and very good success with seeding crested wheatgrass, the Burley District was able to obtain a substantial portion of the Bureau's available funding. Increased concern over the possible impacts of halogeton on the livestock industry culminated in the passage of the Halogeton Control Act of 1952, which provided increased funding for an accelerated seeding program beginning in 1953.

AN OVERALL APPRAISAL

Fortunately, crested wheatgrass turned out to be a better forage plant than was earlier suspected. Early crested wheatgrass use in southern Idaho

involved small stands that were intermixed with native range. Under these situations crested wheatgrass was lightly used, which generated a feeling that it had low palatability and low forage value. However, with the large seedings it soon became evident that livestock would eat the grass and do well on it. Many questions regarding the value of crested wheatgrass and the best way to manage its use arose. The University of Idaho expressed an interest in evaluating the forage value, economic returns, and management needs of large seedings in the District. Consequently, the Bureau entered into a cooperative agreement in 1955 with the University and the range users involved in the Point Springs seeding. This cooperative project has continued to the present time and has yielded many benefits for all concerned.

The large seedings have provided substantial relief to other range areas that could not be treated because of topography, rockiness, etc. The seedings provided forage early in the season, which permitted a delay in the turnout dates along with an overall reduction in use, on the native range areas. As a result of the seedings, a substantial improvement in the range resource and livestock performance of the area took place.

Areas with soils high in soluble salts as well as some small disturbed areas still support halogeton. However, with improved forage conditions on other areas, decreased sheep use, and knowledge of how to avoid losses, halogeton no longer presents a serious range use problem.