RANGE CONSERVATION PROGRAM - 1937

C. Douglas Hole

SCHOOL OF FORESTRY
OREGON STATE COLLEGE
CORVALLIS, OREGON
Recent investigations and reports of eminent and outstanding agricultural and soil conservation experts have expounded considerably on the subject of soil deterioration brought about by improper land use. They contend that the soil produces less abundant crops than in former years, and also, the trends of crop returns point downward so that in the not too distant future, practically all of our farms will be operated at a loss, and we as a nation would not be self-supporting.

The psychology of the American people has been such that they will not act unless an emergency exists, believing that things are as they should be. In handling our lands, upon which we are dependent, we have used the same methods year after year, not perceiving that there has been a change in their productiveness and that the fertility of the soil is disappearing at a rapid rate. However, some phenomena which we can see are "dusters," floods, gullies, and in arid regions, the gradual appearance of deserts where once was good, fertile land. Now we can observe these results of soil abuse, but we could not see the relation between methods of plowing and grazing as a means of the continued fertility of the soil during the period of rapid expansion of the United States. During our period of rapid growth in the latter part of the 19th century, some individuals expressed their views on the direct connection between these phenomena and our domestic use of the soil. They were laughed at as pessimists, and little serious thought was given to their beliefs. Even as late as the early 1950's a prominent governmental official, Mr. Rexford Tugwell, Director of the Resettlement Administration, expressed the opinion that unless we
changed our ways of managing the land, the Middle West would eventually become a great desert. He was derided by the press and by other influential individuals. However, a great many serious-minded men were giving thought to the rapid depletion of soil resources and were expostulating here and there, gradually getting enough influence so that they could be heard above the turmoil. These disciples published scientific and accurate reports where they could be seen and studied by legislature.

Among these reports is Senate Document No. 199, "The Western Range—A Great But Neglected Resource," which is by far the most outstanding report of this type on the condition of the western range. This publication gives a clear and concise analysis of both public and private range in the United States, and presents in a systematic manner, with a historical approach, the past and present trends and recommendations for betterment. In his letter transmitting this report to the President, Secretary of Agriculture Wallace states under one of the remedial measures, "The third phase of the range situation to which I wish to call attention is a limited number of remedial measures of outstanding importance among the many that are required. The range problem as a whole has been allowed to drift for so long that its difficulties have been accentuated. It has become exceedingly broad and complex, beginning with the basic soil resource at the one extreme, and extending through a wide range of overlapping interrelated problems to human welfare at the other. No single measure offers hope of more than a partial solution.

"One of the most important of the measures required is to place all range lands under management that will stop depletion and restore
and thereafter maintain the resource in perpetuity, while at the same time permitting its use. This will involve many difficult operations such as, for example, drastic reductions of stock on overgrazed ranges. It will involve various forms of use such as livestock grazing, watershed services, wild life production, etc., which should be so correlated as to obtain the maximum private and public benefits."

This, in brief, gives us a picture of the situation, and we can see that, even though we would like to do so, we cannot change habits of men in a day or even in a year. The rule-of-thumb management practiced by western stockmen had been brought from their former homes, where climatic and geographic conditions are in most cases the reverse of those found on the western range. They found after a few years that this type of management did not pay, and in a great many cases their investment had turned into a loss. The next step was to recoup the fortunes lost and then clear out of the country. This attitude was almost general over the range areas, and about the only method that could be employed was to increase their numbers of stock and crowd the ranges to the very limit. Very little thought was given to the condition in which the forage was left, and in a short time the ranges were in such a state that their value as a cheap feed was nil.

Today we find that condition prevailing throughout our once great ranges. However, to alleviate this condition and bring back the forage plants is a problem of national scope in which all governmental agencies and private individuals must act in a cooperative manner.
Congress passed a Soil Conservation Act in 1935 to provide benefit payments for farmers if they would manage their farms on a soil-conserving basis. This act proved to be popular and is slowly exerting an influence on the crop lands of the United States. Stockmen, recognizing that range depletion had become a national problem, requested that a range improvement program be included in the national agricultural conservation program already given to the crop farmers, and approval was granted. In 1936 the first nation-wide range conservation program on privately owned ranges was inaugurated.

Governmental cooperation, besides making benefit payments, consisted of giving technical advice and help. The Agricultural Extension Service handled the crop program because of its varied agricultural activities, and the Forest Service acted as technical advisors on the range program because of its 50 years' experience in managing range lands in the West.

A more or less detailed account of the administration of the range program in south central Washington is included here, with emphasis on the staffman's work.
OUTLINE OF THE SOIL CONSERVATION AND DOMESTIC ALLOTMENT ACT

1. **Object of Act**: To provide an impetus for farmers and ranch operators in instituting certain practices in order to rebuild the soil and consequently restore the basic resources of the nation.

2. **Plan of Action**: Agricultural technicians who have devoted a considerable amount of time to the study of restoring the soil have outlined with the joint action of the farmers and range men of the nation, a definite plan whereby the individual land owners can aid in conserving the national resource. They have set up an official Bulletin (The Docket) setting forth details and specifications along with the rate of payment which an operator may receive if he is interested enough to follow through and complete the soil-building practice recommended. Participation in the program is voluntary on the part of the rancher.

3. **Administration of the Act**: Administration of the Soil Conservation and Domestic Allotment Act is entrusted to the Agricultural Adjustment Administration (AAA) under the direction of the Department of Agriculture. The AAA had been originally set up as a crop control agency, but having been declared unconstitutional by the Supreme Court, it assumed the leadership in advancing soil conservation to the private owner, permitting him to handle as much of the work as he could readily do. At meetings called in every farming community of the nation, committees
were chosen to represent the landowners. These committees then met with all other community committees within the county, and in turn elected a county committee to represent their county and handle the administrative end of the program. State committees were then elected at a meeting of all the county committees. Their job consists of handling the program for the state and correlating all work with the national plan of action set forth in the Act.

By giving the individual land owners such a large voice in how the program was to be administered, the AAA hoped to obtain popularity among all farmers and range operators so that all could be reached. As stated previously, technical aid is given by the Extension Service, and, in the case of the range program, by the Forest Service. These two agencies were to take charge of examinations and recommendations, but were answerable to the AAA.
SCOPE OF THE RANGE PROGRAM

As stated heretofore, conservation of range is dependent upon a better management procedure. Range operators realized this, but in most cases better management was linked closely with expensive range improvements and ready cash was not available. If they could get at least a part of the necessary funds for constructing these improvements, they would be able to pay the difference themselves. In other words, they didn't want to be entirely subsidized but wanted rather to help themselves to some extent. Therefore, payment for practices that could be performed under the Range Program is in most cases from 1/3 to 2/3 of the actual cost of construction including labor. For instance, if a cross or drift fence is recommended so that the operator may practice deferred grazing, the benefit payment is 30¢ per rod, while actual construction costs of such a fence built to specifications are from 45 to 60¢ per rod. Another practice which could be recommended is reseeding depleted range with good adapted varieties of grass seed. Payment is made at the rate of 20¢ per pound of seed sown, although the cost of seed alone runs from 30 to 80¢ per pound, plus planting costs.

Other practices which a range operator could initiate with the payment per unit are as follows:

Development of springs and seeps to distribute available water over the range - $50.00 per unit. They must be built by digging out, casing with masonry or cement, piping to a tank, and protected from trampling.

Contour furrowing to prevent soil wash and catch run-off water - $.50 per acre.
Construction of earthen pits or reservoirs for holding run-off and impounding precipitation - $.15 per cubic yard of fill or excavation.

Drilling or deepening range wells, provided a casing of not less than 4 inches in diameter is installed and equipped with a windmill or pump to pump water into a tank or storage reservoir - $1.00 per linear foot of well drilled or dug.

Construct and maintain permanent ditching for the diversion of surface water to prevent soil wash - $.10 per 100 linear feet of permanent ditching.

Rodent control where 90% of the rodents are destroyed; pocket gophers $.15 per acre, ground squirrels $.06 per acre.

Construct fire guards to prevent fires from escaping and sweeping the whole ranch - $.03 per 100 linear feet.

Defer grazing to encourage natural reseeding on depleted range - $.35 per animal unit for each full month during the growing season.

All of the above mentioned practices are recognized as range and soil building if they are applied in the right place. This, then, was a job requiring experienced technical men to recommend the practice which would best effectuate the purpose of the Act. In order to determine how much money a range operator could receive, a system of setting a maximum allowance based on the grazing capacity of the ranching unit was set up, which also required the services of experts. In other words, the total amount of benefit payment an operator could receive depended upon the grazing capacity of his range land, while the actual amount he received depended on the practices he completed. Therefore, each ranch would have to be examined, grazing capacity determined, and range-building practices recommended by a quali-
fied range examiner, and if the practices were completed, an examiner must make a check to see if they were built to specification. The job of administering range examinations and making recommendations was assigned to the Forest Service, while the task of checking compliance was assigned to a representative of each county committee.

FOREST SERVICE ORGANIZATION IN REGION SIX

The task of administering the technical end of the range conservation program in Region Six (Oregon and Washington) fell on the Division of Range Management in the Portland office. A regular Forest Supervisor was detailed to organize the work and act as coordinator with the various agencies involved. The organization plan involved districting the Region into seven administrative areas with a regular forest officer in charge. The officers were designated as staffmen and assumed complete responsibility for all phases of the work in their respective districts.

PARTICIPATION OF THE FOREST SERVICE STAFFMAN

IN THE WENATCHEE DISTRICT OF SOUTH CENTRAL WASHINGTON.

The Job

Determination of carrying capacities of privately owned or controlled range lands covered by application for benefit payments, and of practices necessary to secure range conservation under the Soil Conservation and Domestic Allotment Act of 1936.

Where Work was Performed

In Adams, Benton, Franklin, Grant, Kittitas, Klickitat, and Yakima counties, State of Washington. Headquarters in Wenatchee
office of the U.S. Forest Service at Wenatchee, Washington.

Responsibility

Staffman in charge of the work in the above listed counties for the U.S. Forest Service under cooperative agreement with the Agricultural Adjustment Administration.

Specifically, the responsibility involved:

1. Supervision of range examiners engaged in actual surveys—checking and correlating reports of examinations and approval for the Forest Service of the examination reports which were then transmitted to the County Committees for final action under the provisions of the Act.

2. Contacting County Committees and County Agents in the respective counties in order to keep work and cooperative relations in a continuing and satisfactory status.

3. Check all complaints—appeals or difficulties arising from the work and providing for adjustments within the limitations of the program or such other action as was indicated in the specific cases.

4. Maintain complete records of all work done or to be done—costs for salaries—expenses and per diem of range examiners.

5. General supervision for the Forest Service in staff territory of the cooperative AAA work including some special work under the Western Range Survey—another AAA project.

Procedure of Handling Job on Wenatchee District

1. Listing applications.

Applications for participation in the 1937 Range Conservation
program were received prior to May 1 by the County Committees and Extension Agents and then forwarded with any previous range information to the Regional Office of the U.S.F.S. and then assigned to the Staffman in whose territory they were located. Upon receipt of applications by the Staffman they were listed and filed by counties for field work by the examiner at a later date.

2. Preliminary contacts with County Committees.

When all applications were received from the County, the Staffman arranged a meeting with respective Committees and explained the system of examination which would be followed by the Forest Service in handling the Range cases. At these meetings it was emphasized that because of the overwhelming number of applications and acreage involved and because of the limited amount of funds available, we could not assure them of completing the job under the standards set up. It was suggested that the County Committees, because of their knowledge of local conditions would be able to classify the ranching units in their respective counties in such a way that we could set up a priority of examination. This procedure was, then, essentially a method of sampling whereby we used ranches chosen by the Committee and if we were unable to complete the job by October 31, the date Forest Service participation was to end, we could then assign carrying capacities of unfinished units based on a comparison with units already examined.

In practically all instances, the County Committees agreed to this plan and we were then able to carry out a systematic
approach to the tremendous volume of work. We would first work the units agreed upon by the Committees as samples and then, if there was time and money left after this procedure, we would come back and finish as many more units as possible.

3. Advanced approval.

Because of the volume of acreage involved and also because we were not too sure of completing all cases by the survey method, a plan of giving advanced tentative approval to the ranch operators to go ahead on the practices they intended to work on was inaugurated during the early part of the season. Such a procedure would give the operator a chance to work on his improvements during slack periods when other work was at a standstill.

Tentative approval was given to the operator, provided he assumed responsibility for his practice being within the scope of the act. If he had any doubt as to its conforming to the practices set up by the State Committee he should see his County Committee, but in all cases the approval was given on a written form with the stipulation that it would be subject to the examiner's recommendation and the final approval of the County Committee. This method then, gave the operator written permission to go ahead on the practices he wished to initiate in order to comply with the terms of the act.

4. Training of Examiners.

Examiners were recruited from the Departments of Range Management, Forestry, Agricultural Economics and Animal Husbandry
at the State Colleges and Universities. They were given a preliminary training by the Range Management Departments in Range surveys and the provisions of the Act. Where such instruction was available the men were able to start examinations as soon as they were released from school.

Training at Oregon State College consisted of giving a background in Range reconnaissance including plant identification and evaluating each species as to its grazing use, simple surveying and mapping, using compass and pacing, instruction on filling out forms, estimating densities and in discussing range management in general. Final approval as to whether a man would be hired as an examiner came after a week of intensive training in the field near John Day, Oregon. Men who were able to do good field work as well as contact range operators and sell themselves and the program were the ones appointed to the positions. This latter attribute of character on the part of a man to be able to meet all types of individuals in a friendly and cooperative spirit gave the Forest Service officials a considerable uneasiness at first. Whether a range operator would even tolerate a young college student on his place was a matter of much concern. However, the men assigned to this work turned in a remarkable record. In fact, in Region Six, we had no cases for appeal and only a very few cases of dissatisfaction on the part of operators.

The men reporting on the Wenatchee district represented the two State Colleges of Washington and Oregon as well as the State
University of Washington. It was necessary then, to give some additional training in order to have all men estimating on the same basis to obtain a relative degree of uniformity. This was accomplished by working out a ranching unit and having each man do the whole job. We were fortunate in having some men with a good background in taxonomy who helped the ones not so equipped while others may have had considerable surveying experience which they in turn could convey to the taxonomists. By pairing the men off and each helping the other we were able in a short time to do effective work.

The essential features of a range survey call for uniformity by all examiners in their estimates of density. This calls for constant checking and rechecking on the part of examiners and supervisors. Such checking was accomplished at least every ten days or when a new type of vegetative cover was worked. Regional checks on density estimates and plant identification were carried on at various times during the summer by having one or two men contact all crews in the Region with the purpose of instructing and following up on the quality of the work.

As mentioned heretofore, we were doing some special work for the Western Range Survey. This project is the result of a cooperative agreement among all agencies conducting range surveys whereby a uniform method of making range reconnaissance was agreed upon. All field work was to be sent to a coordinating agency such as the U.S. Forest and Range Experiment Stations and would there be compiled.
The final result of such a project would be the mapping and cataloguing of all range resources in the Western States. Such a project would be of enormous value to any land-use planning group because of its uniformity in character.

The AAA, being a party to this project, was obligated to perform all work in a standard agreed upon by the Western Range Survey, and when the examiners had finished with the field type and map sheets they would then transmit them to the Experiment Station for checking and compiling.

5. Method employed in completing examination in this district.

Table Number 1, page 16 shows the number of applications and acreage involved by counties in the Wenatchee district. In this territory we had the largest average number of acres per application of the staff districts in Region Six. The units varied from small few-acre holdings to ranches well over 100,000 acres. Table number 2, page 16 shows the number of applications of different size classes by counties.
### TABLE I
Volume of Work by Counties

<table>
<thead>
<tr>
<th>County</th>
<th>No. Applications</th>
<th>Acreage Involved</th>
<th>Average Acres per Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>14</td>
<td>126,415</td>
<td>9,029</td>
</tr>
<tr>
<td>Benton</td>
<td>12</td>
<td>160,224</td>
<td>13,352</td>
</tr>
<tr>
<td>Franklin</td>
<td>16</td>
<td>89,121</td>
<td>5,563</td>
</tr>
<tr>
<td>Grant</td>
<td>23</td>
<td>88,400</td>
<td>3,843</td>
</tr>
<tr>
<td>Kittitas</td>
<td>30</td>
<td>96,703</td>
<td>3,223</td>
</tr>
<tr>
<td>Klickitat</td>
<td>68</td>
<td>142,306</td>
<td>2,092</td>
</tr>
<tr>
<td>Yakima</td>
<td>30</td>
<td>416,466</td>
<td>13,882</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>193</strong></td>
<td><strong>1,119,636</strong></td>
<td><strong>5,801</strong></td>
</tr>
</tbody>
</table>

### TABLE II
Number of ranching units applied in the Range Conservation Program of various size classes in the Wenatchee District.

<table>
<thead>
<tr>
<th>Acres</th>
<th>640 or under</th>
<th>2,000</th>
<th>5,000</th>
<th>5,001 or over</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>County</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adams</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Benton</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Franklin</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Grant</td>
<td>2</td>
<td>8</td>
<td>11</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Kittitas</td>
<td>10</td>
<td>10</td>
<td>4</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Klickitat</td>
<td>21</td>
<td>27</td>
<td>15</td>
<td>5</td>
<td>68</td>
</tr>
<tr>
<td>Yakima</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41</strong></td>
<td><strong>57</strong></td>
<td><strong>51</strong></td>
<td><strong>44</strong></td>
<td><strong>193</strong></td>
</tr>
</tbody>
</table>

A TYPICAL APPLICATION AND EXAMINATION REPORT

Form WR-115

This form is the application for participation in the 1937 Agricultural Conservation Range Program. In the upper right-hand corner (see copy attached, page 19) is a space for inserting the State, County, and ranch serial number. State numbers were assigned from the office of the AAA in Washington, D.C. for quick file reference. County numbers were assigned in the State Office and were generally arranged in alphabetical order of the Counties. On the form attached we find the numbers 91-039-44. 91 is the State number; 039 is the county number; and 44 is the number assigned to the ranch in the County Extension office.

Under the heading of the form there are several lines for giving a complete legal description of all land owned or controlled by the operator(s). The land listed on application must conform to the technical definition of range land as stated in the Docket. This definition is: "...any land other than that owned or controlled by the United States Government, or any agency thereof, in which a ranch operator has such a legal estate or interest as to give him control thereof, which produces forage for range livestock without cultivation or general irrigation ten acres or more of which, on the average for the ranching unit, are required to graze one animal unit."

The County Committees were instructed to hold to the exact wording of this technical definition of range land in accepting any
application for participation under the program.

After the legal description is a statement that, "The Land above described is outlined on the reverse side of the sheet." On the reverse side of the sheet there is a printed blank quadrangle sheet, and the operator is to outline his holdings with as much information as he can readily remember, especially where he intends to perform his practices.

A space on the front of the form asks for the total area, and by this is meant all land including crop land, while in the next space the range acres only are asked for. This information was necessary in planning the work loads for examiners.

In the next space the range-building practices which the operator(s) ask for, and following that the operator(s)' signature and complete address are given. If two or more operators are applying in a joint ownership, then each name and the percent of payment for each is stated.

**Method of Examination:**

As stated previously, the Western Range Survey agreed to perform all new grazing examinations with a system that would be uniform and all data would be sent to a central compiling office. The method agreed upon by all agencies was the "Point Observation Plot" which is essentially a uniform sampling system whereby a series of circular plots containing 100 square ft are established at random and a complete catalog of species present is made with the surface cover of each expressed in square feet so that we
DESCRIPTION OF RANGE LAND FOR 1937 AGRICULTURAL CONSERVATION PROGRAM

We intend to participate in the 1937 Agricultural Conservation Program and submit the following description of the range land in our 1937 ranching unit which is owned or controlled by us:

**All sections 2, 8, 9, 10 & 11 & NW\(\frac{1}{4}\) Sec. 14, NE\(\frac{3}{4}\) Sec. 15, NW\(\frac{3}{4}\) Sec. 16**

(Describe fully all range land by legal subdivisions, section, township, and range)

**and NW\(\frac{1}{4}\) Sec. 17 in Twp. 16 N., Range 16 E., W.M.**

The land above described is outlined on the reverse side of this sheet. Total area 4160 acres; area of range land only 4136 acres. For the information of the county committee we select the following range-building practices for institution and completion in 1937 with the understanding that our final selection will be indicated on a Form WR-116.

- Develop springs
- Build cross fence
- Reseed to Crested wheat grass

Ranch operator(s) Robert Roe

Address Yakima, Wn. (Local address) (Post office) (State)

Residence Yakima, Wn. Reach by telephone at 5F22
have a direct percentage of cover, or density. After a group of plots is taken, an average is calculated and a palatability rating applied to the density of each species in order to arrive at a forage factor. The sum of all the forage factors is the forage factor for the area being sampled, and this figure is then applied to the actual surface acres in the sampled area. The resultant figure is known, for lack of a better name, as the Forage Acre, and if we divide this figure by the number of forage acres an animal will consume in a year we can arrive at a grazing capacity for that area sampled.

To illustrate, let us take the Form WR-115 application already discussed and follow it through with a complete examination and report for the range operator (Robert Roe #91-039-44). On the 2" scale reconnaissance map sheet the examiner plots an outline map in blue pencil from the legal description given on form WR-115, and then contacts Mr. Roe to find out where section corners may be found and as much information as possible to help him make a complete survey of his ranch. He decides to start at the west \( \frac{1}{4} \) corner of section 8 and run a compass line east through sections 8, 9, 10, and 11, then offsetting and start at the south \( \frac{1}{4} \) corner of section 2, and run north through the center. (see maps, page 57&58). He then wants to sample the portions of Sections 14, 15, 16, and 17 and offsets to the south \( \frac{1}{4} \) corner of section 11 and proceeding south to the southeast corner of the NE\( \frac{1}{4} \) of the NW\( \frac{1}{4} \) section 14 and sets a line of plots running west from
this point through sections 14, 15, and 16 and then starting on the same line in the NW\textsuperscript{1/4} of section 17. By this procedure he will have established a fairly accurate sample of the Roe Ranch and should obtain a pretty good cross-section to compute the grazing capacity.

After the examiner has reached his starting point at the west \(\frac{1}{4}\) corner of section 8, he paces east to a point 4 chains from the corner and then outlines his 100 square foot plot. His next step is to catalog all species he finds within that plot. Full technical names are long, and he uses a 3-letter symbol from a list furnished him by the Western Range Survey to designate a species. The cataloguing is done on a Range Survey write-up Sheet (Form 764-b) after the heading has been filled in with names and dates and any other information available at that time. At the upper right-hand corner he inserts the operator's identification number for a double check in case the paper should become mixed with any others. As soon as he has listed the species present, he measures and estimates the density of cover of each plant and sets in the first column, after the symbol, the figure which designates the number of square feet the plant covers in the plot. When this is completed for the plot he adds all the figures and places the sum at the first column opposite the word "Density." This figure could also be termed a direct per cent of vegetation on the plot. When this is completed he proceeds on his compass line to
the next plot which in this case is 8 chains distant from the first or 12 chains from the starting corner. Minimum number of samples per section is 10 plots, and if they are spaced equidistant he would have one every 8 chains with the first and last plot being 4 chains from the section lines. Upon arriving at the second plot he again measures and/or estimates densities by species, listing any new ones and adding the total. Thus, on Form 764-E, page 40 we see that the total for the first plot is 24.0 feet, and for the second is 12.0, or just half as dense as the first. He then proceeds in an orderly fashion until he finds after passing the fifth plot a decided change in the aspect of the vegetative cover from a sagebrush type to a grassland type. In order to separate the two vegetative types, he draws a red line on the map type following the boundaries. The procedure on plot #6 calls for a new write up sheet, page 41, and, as before, he lists plants and their densities. After he has taken his tenth plot in section 8 he then starts in section 9 with plot number 1, and in the same manner he takes 10 plots here and up to and including plot number 4 in section 10, where he enters the timber with a change in vegetative cover, and as before, he starts on a new write-up sheet beginning with plot number 5 in section 10. Taking plots every 8 chains, he travels through section 10, and up to and including plot 7 in section 11 where he discovers that the type is once more the same grassland type. He then returns to his
write-up sheets for this type and on page 42 starts with plot No. 8 and continues with 9 and 10 on the next sheet.

By this same procedure he completes the unit write-up sheets and maps and is ready to start compilation work, which he does after coming in from the field. A step-by-step account of his method of computing grazing capacity would be, first, segregate all type write-up sheets according to types, and then add each column of figures horizontally and vertically to obtain a check.

On the 4-Pse-Asp (Sagebrush—Poa secunda—Agropyron spicatum) type he has only 10 plots, and these are recorded on one sheet with the type or sequence number "1" (in red) in the upper right hand corner. By adding the figures horizontally and then adding the sums of individual species, he should obtain the same answer as by adding the sums of the plot densities. In this case he found 116.0 sq. ft. cover out of the 10 plots (equal to 1,000 sq. ft.) or an average of 11.6 feet per plot. Similarly, he obtains the average density of each species. Again, the total of the species average densities must equal the average plot density 11.6. His next step is to look up the average palatability rating for each species listed and enter in the column marked "Pal." opposite the species symbol.

"Palatability," as defined in the "Instructions for Range Surveys" as formulated by the Inter-agency Range Survey Committee, "...is the per cent of the total current year's growth, within
reach of stock, to which a species is grazed when the range unit is properly utilized under the best practical range management. The class of stock, the composition of the vegetation, and the proper time of using the range as a whole, etc., must be considered when rating the palatability of individual species. This percentage should not be in excess of what may be grazed under proper use and still allow the plant to maintain its stand and vigor, year after year."

A Palatability list for the states of Oregon and Washington was furnished each examiner. This list or table includes the generic and specific as well as the most common names of all species or range importance in this region, and opposite these names appeared the species symbol mentioned previously. Palatability ratings for the two classes of stock, Cattle & Horses (C&H) and sheep and goats (S&G) are then listed following each species.

The examiner in listing palatabilities of species on page 40 of the write-up sheet will look for the symbol Asp. in his table. He has previously listed the species in three groups, grasses and grasslike plants, weeds, and browse in order, so that in looking up the symbol Asp. he looks under grasses and on page 2, line 9 of the palatability table, he finds this plant listed as 70% for C&H and 40% for S&G. He knows that the rancher runs mostly cattle, and so the rating is 70. In like manner he obtains the palatabilities of the remaining species.
His next step is to multiply the average density of each species by its palatability. Referring again to Form 764-B, page 40, we find the average density of Agropyron spicatum (Asp) is 2.3 square feet per plot. Multiplying this figure by the palatability rating of 70 agreed on in the proceeding paragraph, we have the Forage Factor (F.F.) for that species, or 1.61 which is entered in the column under F.F. opposite the species symbol. When all species have been taken care of in this manner he adds the column and places the sum at the top in the box provided. This figure on write-up sheet page 40 is given as 4.29, actually it is .0429, because the palatabilities are listed as per cent and should in the case of the Asp. be .70 instead of 70. By avoiding the placement of decimals until the last figure is obtained, we do not have the confusion of decimal points in the F.F. column. At any rate, when we enter the figures in the spaces provided in the upper left-hand section of the sheet we list the F.A. factor which is synonymous to the F.F. as .0429. In the column "Total Density" we enter 116.0 and in the column "Average Density" we enter .116 which in this case we list as a true decimal rating. We have no use for average per cent palatability, so leave it blank.

By using the method described above, the examiner completes the summarizing of all type sheets and computes the Forage Acre factors for each type.

After he has these figures, he then turns to his summary
sheet, page 51 and lists the surface acres by types and sections. Again referring to the 4 Pse-Asp type we see that in section 8 he has scaled off 568 acres for the type, and 160 acres in Sec. 17 for a total of 528 surface acres in the type. By applying the Forage Factor .0429 to this surface acre figure he obtains the number of forage acres in type, or 22.65. In similar manner, he obtains the forage acres for the two remaining types, and then sums up the totals for the unit, in this ranch 218.88 forage acres.

On his report sheet he is asked to show the average density, average palatability, and average Forage Factor so he lists all total densities and number of plots, and finds their sum. Near the top of the form is a list of formulas with blank spaces to fill in. The first three are self explanatory while the next formula gives the grazing capacity of the ranch. He divides the total F.A. 218.88 by the converting factor of forage acres required to support a cow for a 12-month period, or, in the case of sheep, 5 sheep for 12 months. The forage requirement factors as derived by the Western Range Survey are based on a range survey of many ranches widely scattered over the Region. Ranches to be studied were selected with the idea of giving a cross section of all types of range where reliable, actual use information was available. By determining the actual number of animal units (sheep or cow basis) grazed on the ranch and dividing into the number of forage acres determined by survey we can derive a forage requirement factor or the number of forage acres necessary to support one animal unit.
When all the field data has been assembled for the Region a weighted average figure is determined. The requirement factors set up by the Inter-Agency Committee for the Western Range Survey in this region are 1.68 F.A. per animal unit (cow basis) and 1.2 F.A. per animal unit (sheep basis). Thus, on the Roe Ranch, he divides the forage acres 218.88 by 1.68 (cow basis) and the result is 130.2 animal units. As the grazing capacity figures are given in whole figures, he drops the .2, and the capacity is 130 cows for a yearlong basis.

Report of Examination of Range Land: (Form WR-116)

Form WR-116 is the final report form the examiner prepares for each ranching unit. This form is completed from his field examination work and also after a consultation with the range operator.

On the first page, after completing the heading as it appears on the WR-115, he lists the total acres, range acres, vegetative density, per cent palatable, F.A. factor, etc., from his summary sheep prepared in the compilation work.

Next step is on page 2 of the report, which consists of a number of questions pertaining to the ranching unit. Questions 1-12 are more or less self explanatory and are filled to show how the examiner answered them on the Roe ranch. Item 13 states "Examiner's recommendations," and in this space are entered the practices with minimum and maximum amounts. These practices are also shown on the map sheets and are inserted in ink, while all
Scale 1 inch to a mile. Map to show crop and meadow land operated in connection with ranching unit. Range types to be shown in accordance with standard range survey instructions. Indicate on map area to be or now seeded under crop program. All existing and recommended cultural features and practices to be shown on map. Attach additional map sheets if necessary.
State Washington County Yakima

REPORT ON EXAMINATION OF RANGE LAND
(Pursuant to the 1937 Agricultural Conservation Program)

Ranch operator(s) Robert Roe (Name)
Yakima, Washington (Address)

Location of lands All sections 2, 8, 9, 10 & 11 & NW\(\frac{1}{4}\) Sec. 14, NE Sec. 15, NW Sec. 16 (Subdivisions, section, township, and range)
and NW\(\frac{1}{4}\) Sec. 17 in twp. 16 North, Range 16, E.W.M.

Local name of ranch Roe Ranch

Total acres 4160 Acres of range land 4136 Vegetative density 1317 Percent palatable 40.1
F. A. factor 0528 Number of forage acres 218.88 Forage acres per A. U. 1.69 Grazing capacity 130 (Animal units)

CERTIFICATE OF RANGE EXAMINER
I certify that I have made an inspection of the foregoing ranching unit, and to the best of my knowledge and belief the facts set forth in this report are true and correct.
August 17, 1937 John Doe (Range examiner)

CERTIFICATION AND APPLICATION BY RANCH OPERATOR
I have reviewed the report of the range examiner and hereby make an application pursuant to the terms of the 1937 Agricultural Conservation Program for written permission to carry out the following range-building practices:
Develop springs and/or construct cross fences and/or reseed
August 18, 1937 Robert Roe (Ranch operator)

CERTIFICATE OF COUNTY COMMITTEE
The county committee, based upon the report of the range examiner, bearing code and serial No. 91-039-44 recommends for the ranching unit a grazing capacity of 130 animal units and determines that the following practices with respect to which the ranch operator has requested approval will tend to effectuate the purposes of the Soil Conservation and Domestic Allotment Act and it hereby authorizes the carrying out of such practices to the extent and on the locations indicated, total payment not to exceed $195.00:
Develop 3 springs and/or construct two cross fences and/or reseed
60 acres to crested wheat grass
August 25, 1937 John Brown, (Pres) (For the county committee)
1. Poisonous plants and noxious weeds: *Larkspur in NE Sec. 9 - scattered*  
   (Species, location, area, abundance)


   Division: 480 rods. Recommended: 700 rods.

   Percent of forage lost by rodents: 5.


12. Other methods needed or desirable: Deferred and rotation grazing would be desirable.  
   (Adjustments, grazing practices and methods, if the operator would construct the recommended cross fences. Eradication of poisonous plant area would allow stock to better utilize this area. Grazing use is a little heavy at present and the operator would be benefited if he would decrease this use.

13. Examiner's recommendations: Develop springs and seeps, minimum 1, maximum 3.  
   Spring A to be given first priority and springs B & C next and/or construct cross fences, minimum 1, maximum 2; Fence between sections 8 and 9, 320 rods; cross fence between sections 10-15 and 11-14, 480 rods and/or reseed to crested wheat grass; minimum 5 acres, maximum 60 acres in Sec. 8.

14. Is any cropland operated with the ranching unit entered in crop program? no.

15. If so, what practices are being performed on such cropland? None.

16. Class of livestock grazed: 360 cattle, (sheep), (goats), (horses).
NORMAL NUMBER OF LIVESTOCK GRAZED OR FED ON RANCHING UNIT AND CROPLAND

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<tr>
<th>Number</th>
<th>From—</th>
<th>To—</th>
<th>Months</th>
<th>Animal Months</th>
<th>Number of Animal Units (Sheep 5 to 1)</th>
<th>Acres of Range</th>
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<tr>
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<td>C &amp; H</td>
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Range Land

- Range winter: 250 3/1 5/31 3 620
- Range spring: 250 2/1 5/31 4 400
- Range fall: 320 10/1 12/31 3 990
- Range summer: 320 6/1 9/31 4 On National Forest
- Range seasonal:
- Range yearlong:

Total: xxxxxx xxxxxx xxxxxx xxxxxx 2080 173 4,156 23.8

GRAZING CAPACITY OF RANCHING UNIT

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<tr>
<th>Number</th>
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<th>To—</th>
<th>Months</th>
<th>Animal Months</th>
<th>Number of Animal Units (Sheep 5 to 1)</th>
<th>Acres of Range</th>
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<tbody>
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<td>C &amp; H</td>
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<tr>
<td>On feed on cropland: 260 1/1 2/28 2 520 xxxxxxxxxx xxxxxxxxxx xxxxxx</td>
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</table>

Range Land

- Range winter: 260 5/1 5/31 3 780
- Range spring: 260 10/1 12/31 3 780
- Range summer: 260 6/1 9/31 4 On National Forest
- Range seasonal:
- Range yearlong:

Total: xxxxxx xxxxxx xxxxxx xxxxxx 1560 120 4,156 31.8

STATUS OF LAND IN RANCHING UNIT AND OF ALL OTHER LAND OPERATED WITH RANCHING UNIT

320 acres of State and county land, leased at $ .05 per acre; 640 acres of private land, leased at $ .10 per acre; 3200 acres of private land owned; acres of public domain; 31,200 acres of national forests; acres of Indian lands; acres of others; 35,560 total acres used by operator. Number of animal units grazed on these lands 282.
existing improvements are in pencil.

On page 3 of the report is a block which asks for the actual use on the ranch. These figures are to be the normal stocking and are based over a long period of years. The examiner then refers to the stockmen for this information taking with him the "History of Use Record" form (page 52) for this purpose. He finds that Mr. Roe owns 60 calves, 200 cows and 100 steers, and by listing the periods each class is on feed, stubble, National Forest, other lands, or on his own ranch, he is able to enter in the sums in this block. Returning to the WR-116, he lists these figures and finds the total number of animal months grazed on his own ranching unit, exclusive of feed. By dividing this by 12 he is able to determine the actual number of animal units the operator is running and in this case it is 173.

The next block is the surveyed capacity of the ranch with the seasons of use. In this case the examiner recommends a cut in numbers from 330 cows to 260. This cut is not compulsory on the part of the operator but is listed to show how he might better use his range under a sustained yield basis.

The bottom question is self-explanatory in that it asks for the status of lands used by the operator.

On the back page of the form is a space for a map of the unit, but as it is included on the 2" to mile scale map sheets, it is not reproduced here.

After this form is completed, the examiner turns to page 1 and certifies that he has inspected the ranch and that the statements are
true and correct to the best of his knowledge. It is then ready
to submit to the ranch operator who looks it over, asking any
questions, and if it appears correct he also certifies that he
has reviewed the report, and petitions the County Committee
for permission to carry out the range building practices listed.

The examiner is now finished with the Roe application,
and his next step is to forward all field work, notes, maps,
memorandums, WR-115 and WR-116 to the Forest Service Staffman
who reviews and checks all the work, and if found to be all
right, transmits it to the County Committee.

**FOLLOW-UP-BY COUNTY COMMITTEES ON EXAMINATION REPORT**

After the completed WR-116 has been forwarded to the
County Committee, the Forest Service responsibility is finished,
except in cases not clear, or when an appeal has been filed. The
County Committee then reviews the report and certifies that the
practices recommended will effectuate the purposes of the Soil
Conservation & Domestic Allotment Act and it authorizes the
operator to proceed with the completion of his recommended prac-
tices except that his total payment will not exceed the maximum
range-building allowance which is computed by multiplying the
number of animal units by the $1.50 allowance per animal unit,
or in this case $1.50 x 130 = $195.00.

As the report is typed in quadruplicate, one copy is
retained by the Forest Service, one by County Committee, one sent
to operator, and later, one sent to State Committee.
When Mr. Roe has completed as much of the work as he intends to, he requests the County Committee to have an inspector come out to check his work. This inspector is a representative of the County Committee, whose duty is to check compliance, seeing that the practices completed are those recommended by the examiner, that all work is done in line with the specifications, and if the work does effectuate the purpose of the act. His next step is to measure the work completed so that the operator will receive his payment. Mr. Roe only had time to finish springs A & B, and one cross fence between Sections 8 & 9.

The compliance inspector would then list as follows:

<table>
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<th>Description</th>
<th>Amount</th>
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<tr>
<td>Total range-building allowance</td>
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<tr>
<td>Develop springs A &amp; B $50.00</td>
<td>$100.00</td>
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<tr>
<td>Construct 320 rods cross fence @ $.30</td>
<td>96.00</td>
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<tr>
<td>Total earned</td>
<td>196.00</td>
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<tr>
<td>Total amount to receive</td>
<td>$195.00</td>
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</table>

The operator earned $196.00, but his allowance was only $195.00, so he could only receive the smaller figure. If, for instance, he only developed the springs and did not complete the fence, his payment would be only $100.00.

After the compliance is checked, a voucher is submitted by the operator to the Comptroller General of the United States for payment of $195.00. W.R.S. Data. All original type write-up sheets, map sheets, summary sheets, WR-115's, and carbon copy of WR-116 are forwarded to the Forest Experiment Station for compilation in the survey of western ranges.
PROCEDURE FOR COMPLETING UNEXAMINED CASES

As stated previously, we were skeptical at the start of the examination work as to whether we would be able to complete the job of examining all ranches up to the standards outlined in the Western Range Survey. We had instituted a method whereby we tried to sample ranching units in all parts of the counties, and in this way obtain a county and community average. By the middle of September we could see that only a little over half of the acreage had been completed, and our funds were nearly exhausted. A plan of finishing each case was worked out in conjunction with the AAA and the Extension Service, which allowed the County Committees to set carrying capacities of unfinished cases, in cooperation with the Forest Service representative, in order to obtain an allowance figure. The operators were asked to come in to the County Agent's office to meet with the committee and aid in completing the Form WR-116. Such carrying capacities and practices were plainly marked, "Temporary, for 1957 Allowance Purposes Only." If the program is to be continued in 1958, these unfinished cases would receive first attention.

By using this procedure, all cases were completed by October 31 in a manner satisfactory to the AAA and the Extension Service. While comparative cost figures are desirable, we were not able to accurately define many costs which are more or less tied in with the whole set-up. We do know, however, that Grazing Surveys costs are high, and any method which would obtain the
desired results at a cheaper cost would be welcomed by the AAA because administrative costs are subtracted pro-rata from the benefit payments, and high surveys costs will lower each rancher's payment.

**Work Completed**

The following is a summary of work completed by the examiners on the Wenatchee District, using the grazing survey method:

- Acreage completed: 741,664
- Cases completed: 131
- Acres/case completed: 5,661
- Man days (exclusive staffman): 605
- Acres/man day: 1,230
- Man days/case: 4.6

The remaining acreage of applicants completed by the later procedure is 577,972 acres. No attempt is made to break this down as above, because of the inability to figure amount of time spent on each case.
Summary of R.C.P. Activity

One important, though intangible, objective of the Range Conservation Program has been to spread the gospel of better range practices and soil conservation, and it is felt that the examiners in this region, by bringing such ideas to stockmen, have accomplished a valuable piece of missionary work. From stockmen and others interested we have gained a favorable impression of the changed attitude toward range, and the consequent soil conservation. We can judge the results only after a longer period of time has elapsed and we study the range conditions again.

The tangible results of the program are apparent in the number of necessary range improvements initiated since the inception of the program. As stated heretofore by Secretary Wallace, in the "Western Range," any remedial measure which will tend to reconstruct the western ranges will necessarily take a long time. The projects completed this last year may show up only from an engineering viewpoint; however, they will eventually pave the way toward a better utilization procedure by the stockman.

The fact finding range survey conducted by the AAA in conjunction with the Western Range Survey has been a great factor in establishing carrying capacity figures in all western localities having range land. Although surveys are costly, because of the sampling procedure we were able to get reliable information which could be used as a comparison with other nearby areas, and
we obtained the maximum results of the survey. Should there be a 1938 program, and carrying capacity figures are required, we have a wealth of information on hand which could be used advantageously.

Grazing surveys are expensive, and together with administrative costs and the money paid range operators for instituting practices, the total cost of the RCP is excessive. Sometimes we are questioned as to whether the taxpayers receive sufficient value for their money. A historical systematic analysis of range economics would lead us to believe that unless conditions of range depletion were stopped it would not be long before a large percentage of stock raisers would be forced out of business, resulting in less taxes from them, ruination of at least the sub-marginal and most of the marginal range for many years, ultimate higher costs of meat and by-products through shortage, and addition to relief rolls of stockmen and their families. Possibly this is an extreme picture. Nevertheless, the range livestock industry is and has been during the past few years in a critical stage. Drought, low prices, high cost of feeds, over-investment in lands (land-poor), decrease in productivity of range forage through attempts at overstocking in order to relieve debts, and many other factors have tended to lower the stockman's resistance.

When we think in national terms of the RCP, we can see a reason for the expenditure. The nation's meat and clothing supply is being limited by improper land use and we must start a concerted drive to help the land user by a program of education and financial aid in building up his basic resource. By such a program the land
in question would be safe from going on the delinquent tax rolls; in fact, value of the land will be increased, and with a higher assessed valuation, tax returns will be increased. We believe that any program which will work toward saving the soil through better management is worthy of consideration and that we should think in terms of long-time investments.
UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

RECONNAISSANCE MAP SHEET

_ W_ ¼  T. 16 N. R. 16 E. W.M _ STATE Wash. _ COUNTY Yakima _

SERIAL NO. 

MAPPED BY John Doe  August 15 & 16  1937

SCALE 2 INCHES = 1 MILE
LEGEND FOR MAPS ON FORM WR-116

Symbol to be in black unless otherwise stated.
(Existing improvements in pencil—proposed improvements in ink.)

1. Poisonous plants

2. Stock water
   a. Springs (adequate)
   b. Spring and seep developments
      Permanent
      Existing
      Proposed
      Seasonal
      Existing
      Proposed

3. Fences
   Existing
   Proposed

4. Reseeding recommended

5. Deferred grazing recommended

6. Range destroying rodents
   Gophers
   Ground squirrels

7. Water conservation
   a. Contouring existing
   b. Water spreading existing

8. Ditch or canal

9. Fire guards existing
   Fire guards proposed

10. Headquarters

11. Natural hay meadow

12. Natural hay meadow aftermath

Types

Miscellaneous Features

Good road
Poor road
Trail
Corral
Type lines - single red line
Cultivated land - solid black
Property boundary - single blue line

Revised 7/22/37
RANGE SURVEY WRITE-UP SHEET
ADAPTED TO SQUARE FOOT DENSITY METHOD

PROJECT: Robert Roe
EXAMINER: John Doe
TYPE: 4-Pse-Asp

DATE: August 15-16, 1937
LOCATION: 8 & 17, T. 16 N., R. 16 E
S., T. & R. - AERIAL PHOTO NO.

TOTAL DENSITY: 116.0
FORAGE DENSITY: .116 % PAL.
F.A. FACTOR: .0429 FOR C & H OR S & G

FORAGE DENSITY: .116 % PAL.

UTILIZATION CUTS:
- SLOPE
- % TIMBER
- % ROCKS
- % LACK OF WATER
- % EROSION
- UNSTABLE SOILS
- TOTAL CUT

Sec. 8 SPECIES DENSITY

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REPROD.: (COMP.) (DENS.) (AGE)
INJURY: (CONP.) (CAUSE)

C & H OR S & G
FORM 764B (BACK)

TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER (CHECK ONE)

PLANT VIGOR: POOR-FAIR-GOOD (CHECK ONE)

RANGE CONDITION: POOR-FAIR-GOOD (CHECK ONE)

RELATIVE PRODUCTIVENESS OF SITE: LOW-AVE-HIGH (CHECK ONE)

WATERING PLACES (KIND - LAKE, SPRING, ETC.)

(DISTANCE) (ADEQUACY) (PERM. - TEMP.)

POISONOUS PLANTS (KINDS)

(RECOMMENDATIONS)

KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS (CHECK ONE OR MORE)

PROPER GRAZING PERIOD: SPRING-SUMMER-FALL-WINTER-YEAR LONG (CHECK ONE OR MORE)

WILDLIFE

(GAME, PREDATORS, RODENTS - SPECIES AND ABUNDANCE)

SOIL EROSION (CHECK ONE OR MORE)

SHEET EROSION EVIDENT

GULLY EROSION

OCCASIONAL GULLIES - SHALLOW

OCCASIONAL GULLIES - DEEP

FREQUENT GULLIES - SHALLOW

FREQUENT GULLIES - DEEP

WIND EROSION

DEPOSITION EVIDENT

REMOVAL EVIDENT

SLOPE IN PERCENT (CIRCLE APPROPRIATE CLASSIFICATION) 0 TO 5, 6 TO 10, 11 TO 20, 21 TO 40,

41 TO 60, 61 TO 80, 81+

EXPLANATION OF GULLY TERMS: OCCASIONAL GULLIES ARE GULLIES MORE THAN 100 FEET APART. FREQUENT

GULLIES ARE GULLIES LESS THAN 100 FEET APART. SHALLOW GULLIES ARE THOSE EASILY CROSSEABLE BY

STOCK. DEEP GULLIES ARE THOSE DEEP ENOUGH TO INTERFERE WITH STOCK MOVEMENTS.

ADDITIONAL TYPE COMMENTS

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NOTE:

THE INFORMATION CONTAINED ON THIS SHEET IS PRIMARILY A FORAGE INVENTORY. WHEN AND IF FURTHER
DATA ARE SECURED ON TIMBER, WATER, SOILS, EROSION, WILDLIFE, ETC., BY EXPERTS ALONG THESE LINES,
SUCH INFORMATION SHOULD BE FURTHER CORRELATED TO BEST SERVE RANGE MANAGEMENT.
RANGE SURVEY WRITE-UP SHEET
ADAPTED TO SQUARE FOOT DENSITY METHOD

PROJECT Robert Roe
EXAMINER John Doe
TYPE 1 Fse-Asp
TOTAL DENSITY % PAL.
FORAGE DENSITY % F&E FACTOR C&H

TRANSECT NO. 2
DATE August 15 & 16
LOCATION Sec.8 & 9, Twp.16 N., R. 16 E.
T & R - AERIAL PHOTO NO. Scattered
TIMBER P.P. - (COMP.) (COND.)
F.P. - (REPROD.) (DENS.) (AGE)

UTILIZATION CUTS: SLOPE % TIMBER % ROCKS % LACK OF WATER % EROSION % TOTAL CUT
UNSTABLE SOILS %

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FORM 7649 (BACK)

TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER

PLANT VIGOR: POOR-FAIR-GOOD

(RANGE CONDITION: POOR-FAIR-GOOD)

RELATIVE PRODUCTIVENESS OF SITE: LOW-AV.-HIGH

WATERING PLACES

(CHECK ONE)

(KIND - LAKE, SPRING, ETC.) (DISTANCE) (ADEQUACY) (PERM. - TEMP.)

POISONOUS PLANTS

(RECOMMENDATIONS)

(KINDS)

(KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS)

(CHECK ONE OR MORE)

(WATERING PLACES) (kind - lake, spring, etc.) (distance) (adequacy) (perm. - temp.)

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-42- 91-039-44

RANGE SURVEY WRITE-UP SHEET
ADAPTED TO SQUARE FOOT DENSITY METHOD

PROJECT  Robert Roe
EXAMINER  John Doe
TYPE  1
TOTAL DENSITY  
FORAGE DENSITY  %
P.A. FACTOR  FOR C & H OR S & G

TYPE OR TRANSECT NO.  2
DATE  August 15  1937
LOCATION  Sec. 9, 10, 11- Typ. 16 N., R. 16 E.
S., T. & R.  - AERIAL PHOTO NO.
TIMBER  P.P.  Scattered
(COMP.)  (COND.)

(REPROD.)  (DENS.)  (AGE)

(INJURY)  (CAUSE)

UTILIZATION CUTS:-
SLOPE  %
TIMBER  %
ROCKS  %
UNSTABLE SOILS  %

% LACK OF WATER  % EROSION  %
TOTAL CUT  

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FORM 764B (BACK)

TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER
(CHECK ONE)

PLANT VIGOR: POOR-FAIR-GOOD
(CHECK ONE)

RANGE CONDITION: POOR-FAIR-GOOD
(CHECK ONE)

RELATIVE PRODUCTIVENESS OF SITE: LOW-AV-HIGH
(CHECK ONE)

WATERING PLACES
(KIND - LAKE, SPRING, ETC.) (DISTANCE) (ADEQUACY) (PERM. - TEMP.)

POISONOUS PLANTS
(KINDS) (RECOMMENDATIONS)

KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS
(CHECK ONE OR MORE)

PROPER GRAZING PERIOD: SPRING-SUMMER-FALL-WINTER-YEAR LONG
(CHECK ONE OR MORE)

WILDLIFE
(GAME, PREDATORS, RODENTS - SPECIES AND ABUNDANCE)

SOIL EROSION (CHECK ONE OR MORE)

SHEET EROSION EVIDENT

GULLY EROSION

OCCASIONAL GULLIES - SHALLOW
OCCASIONAL GULLIES - DEEP
FREQUENT GULLIES - SHALLOW
FREQUENT GULLIES - DEEP

WIND EROSION

DEPOSITION EVIDENT
REMOVAL EVIDENT

SLOPE IN PERCENT (CIRCLE APPROPRIATE CLASSIFICATION) 0 TO 5, 6 TO 10, 11 TO 20, 21 TO 40, 41 TO 60, 61 TO 80, 81+

GRATEFUL TEXTURE (TO SIX INCHES DEEP)

CHECK IN APPROPRIATE BLOCKS

LIGHT
MEDIUM
HEAVY

ALKALI (CHECK IF EVIDENT)

EXPLANATION OF GULLY TERMS: OCCASIONAL GULLIES ARE GULLIES MORE THAN 100 FEET APART. FREQUENT GULLIES ARE GULLIES LESS THAN 100 FEET APART. SHALLOW GULLIES ARE THOSE EASILY CROSSABLE BY STOCK. DEEP GULLIES ARE THOSE DEEP ENOUGH TO INTERFERE WITH STOCK MOVEMENTS.

ADDITIONAL TYPE COMMENTS

NOTE:
THE INFORMATION CONTAINED ON THIS SHEET IS PRIMARILY A FORAGE INVENTORY. WHEN AND IF FURTHER DATA ARE SECURED ON TIMBER, WATER, SOILS, EROSION, WILDLIFE, ETC., BY EXPERTS ALONG THESE LINES, SUCH INFORMATION SHOULD BE FURTHER CORRELATED TO BEST SERVE RANGE MANAGEMENT.
RANGE SURVEY WRITE-UP SHEET
ADAPTED TO SQUARE FOOT DENSITY METHOD

**PROJECT:** Robert Ro

**EXAMINER:** John Doe

**TYPE:** 1

**DATE:** Aug. 16, 1937

**LOCATION:** T & R - AERIAL PHOTO NO.

**TIMBER** (COMP.) (COND.)

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**UTILIZATION CUTS:**

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FORM 754B (BACK)

TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER

(RANGE CONDITION: POOR-FAIR-GOOD

(WATERING PLACES

POISONOUS PLANTS

KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS

PROPER GRAZING PERIOD: SPRING-SUMMER-FALL-WINTER-YEAR LONG

WILDLIFE

SOIL EROSION (CHECK ONE OR MORE)

SHEET EROSION EVIDENT

GULLEY EROSION

OCCASIONAL GULLIES - SHALLOW

OCCASIONAL GULLIES - DEEP

FREQUENT GULLIES - SHALLOW

FREQUENT GULLIES - DEEP

WIND EROSION

DEPOSITION EVIDENT

REMOVAL EVIDENT

SLOPE IN PERCENT (CIRCLE APPROPRIATE CLASSIFICATION) 0 TO 5, 6 TO 10, 11 TO 20, 21 TO 40, 41 TO 60, 61 TO 80, 81+

SOIL TEXTURE (TO SIX INCHES DEEP)

CHECK IN APPROPRIATE BLOCKS

LIGHT

GRAVELLY

STONY

MEDIUM

HEAVY

ALKALI (CHECK IF EVIDENT)

EXPLANATION OF GULLY TERMS: OCCASIONAL GULLIES ARE GULLIES MORE THAN 100 FEET APART. FREQUENT GULLIES ARE GULLIES LESS THAN 100 FEET APART. SHALLOW GULLIES ARE THOSE EASILY CROSSABLE BY STOCK. DEEP GULLIES ARE THOSE DEEP ENOUGH TO INTERFERE WITH STOCK MOVEMENTS.

ADDITIONAL TYPE COMMENTS

NOTE:

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**RANGE SURVEY WRITE-UP SHEET**  
**ADAPTED TO SQUARE FOOT DENSITY METHOD**

**PROJECT** Robert Roe  
**EXAMINER** John Doe

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<th>% LACK OF WATER</th>
<th>% EROSION</th>
<th>% TOTAL CUT</th>
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<th>3</th>
<th>TOTAL DENSITY</th>
<th>AVERAGE DENSITY</th>
<th>PAL. F.F.</th>
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| DENSITY | 17.0 | 19.5 | 20.5 | 17.0 | 17.5 | 14.0 | 20.0 | 15.0 | 19.0 | 22.0 | 179.5 |
| SPECIES  | Asp | 4.5 | 6.0 | 5.5 | 5.5 | 5.0 | 4.0 | 6.0 | 3.5 | 4.0 | 5.0 | 49.0 |
|          | Pse | 5.0 | 7.0 | 6.0 | 5.5 | 5.5 | 5.0 | 4.0 | 3.5 | 5.5 | 55.5 |
|          | Bte | 1.5 | 1.0 | 1.5 | 2.0 | .5 | .5 | 1.0 | 1.5 | 1.5 | 11.5 |
|          | Bti | .5 | 1.0 | .5 | .5 | 1.0 | 1.0 | 4.5 |
|          | ERO | 2.0 | 2.5 | 1.5 | 1.0 | 1.5 | 1.0 | 2.0 | 1.0 | 12.5 |
|          | LIG | 1.0 | 1.0 | .5 | 1.0 | 1.0 | .5 | 1.0 | 6.0 |
|          | Bsa | 1.5 | 1.0 | .5 | .5 | 1.0 | 1.0 | 6.0 |
|          | LUP-S | 1.0 | 1.0 | 1.0 | 1.0 | .5 | 3.5 |
|          | ERG | 1.5 | 1.0 | .5 | 1.0 | .5 | 4.5 |
|          | Str | 1.0 | .5 | 1.0 | .5 | 3.0 |
|          | Atr | 1.0 | .5 | 1.5 | 1.5 | 2.5 | 4.5 | 6.0 | 17.5 |
|          | Ptr | .5 | 1.5 | 1.0 | .5 | 1.0 | 4.5 |
Current Forage Utilization: Over-Prop-Und

Plant Vigor: Poor-Fair-Good

Range Condition: Poor-Fair-Good

Relative Productiveness of Site: Low-Av.-High

Watering Places:
- Kind - Lake, Spring, Etc.
- Distance
- Adequacy
- Perm. - Temp.

Poisonous Plants:
- Kind
- Recommendations

Kind of Stock Best Suited to Range: Cattle-Horses-Sheep-Goats

Proper Grazing Period: Spring-Summer-Fall-Winter-Year Long

Wildlife:
- Game, Predators, Rodents - Species and Abundance

Soil Erosion:
- Sheet Erosion Evident
- Gully Erosion
  - Occasional Gullies - Shallow
  - Occasional Gullies - Deep
  - Frequent Gullies - Shallow
  - Frequent Gullies - Deep

Wind Erosion:
- Deposition Evident
- Removal Evident

Slope in Percent (Circle appropriate classification): 0 to 5, 6 to 10, 11 to 20, 21 to 40, 41 to 60, 61 to 80, 81+

Explaination of Gully Terms: Occasional Gullies are gullies more than 100 feet apart. Frequent gullies are gullies less than 100 feet apart. Shallow gullies are those easily crossable by stock. Deep gullies are those deep enough to interfere with stock movements.

Additional Type Comments

Additional Type Comments

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Note:
The information contained on this sheet is primarily a forage inventory. When and if further data are secured on timber, water, soils, erosion, wildlife, etc., by experts along these lines, such information should be further correlated to best serve range management.
RANGE SURVEY WRITE-UP SHEET
ADAPTED TO SQUARE FOOT DENSITY METHOD

PROJECT: Robert Roe
EXAMINER: John Doe

TYPE: 1
TOTAL DENSITY: 105.0
FORAGE DENSITY: 103.0
F.A. FACTOR: For C & H OR S & G

TYPE OR TRANSECT NO.: 0
DATE: August 16, 1937
LOCATION: Dec. 18, T. 16 N., R. 16 E.
C & H OR S & G (COMP.) (COND.)

TIMBER
(REPROD.) (DENB.) (AGE)

(INJURY) (CAUSE) %

UTILIZATION CUTS:
SLOPE % TIMBER % ROCKS % LACK OF WATER % EROSION % TOTAL CUT
UNSTABLE SOILS %

SPECIES DENSITY
7 plots

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TOTAL CUT: 105.0
AVERAGE DENSITY: 103.0
PAL. F.F.: 12.5

TOTAL DENSITY: 105.0
AVERAGE DENSITY: 12.5
TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER

RANGE CONDITION: POOR-FAIR-GOOD

WATERING PLACES

POISONOUS PLANTS

KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS

PROPER GRAZING PERIOD: SPRING-SUMMER-FALL-WINTER-YEAR LONG

WILDLIFE

SOIL EROSION (CHECK ONE OR MORE)

SLOPE IN PERCENT (CIRCLE APPROPRIATE CLASSIFICATION) 0 TO 5, 6 TO 10, 11 TO 20, 21 TO 40, 41 TO 60, 61 TO 80, 81+

EXPLANATION OF GULLY TERMS: OCCASIONAL GULLIES ARE GULLIES MORE THAN 100 FEET APART. FREQUENT GULLIES ARE GULLIES LESS THAN 100 FEET APART. SHALLOW GULLIES ARE THOSE EASILY CROSSABLE BY STOCK. DEEP GULLIES ARE THOSE DEEP ENOUGH TO INTERFERE WITH STOCK MOVEMENTS.

ADDITIONAL TYPE COMMENTS

NOTE:

THE INFORMATION CONTAINED ON THIS SHEET IS PRIMARILY A FORAGE INVENTORY. WHEN AND IF FURTHER DATA ARE SECURED ON TIMBER, WATER, SOILS, EROSION, WILDLIFE, ETC., BY EXPERTS ALONG THESE LINES, SUCH INFORMATION SHOULD BE FURTHER CORRELATED TO BEST SERVE RANGE MANAGEMENT.
**SUMMARY SHEET**

**RANGE SURVEY WRITE-UP SHEET**

**ADAPTED TO SQUARE FOOT DENSITY METHOD**

**PROJECT** Robert Roe  
**EXAMINER** John Doe  
**TYPE** 1-Pse-Asp  
**TOTAL DENSITY** 656.5  
**FORAGE DENSITY** 0.14 % PAL.  
**F.A. FACTOR** 0.646 FOR C & H O R S & G  

**TOTAL CUT**

| UTILIZATION CUTS | SLOPE % TIMBER % ROCKS % LACK OF WATER % EROSION % EROSION |
|------------------|------------------|------------------|------------------|------------------|
| Sec. 9, 10, 11 & 15 | UNSTABLE SOILS | Sec. 8 & 11 | SPECIES DENSITY | 47 plots |
| DENSITY | 110.0 | 107.5 | 156.5 | 179.5 | 103.0 |
| DENSITY | 656.5 | 14.0 | 6.46 |

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**TOTAL CUT**

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FORM 764B (BACK)

TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER (CHECK ONE)  PLANT VIGOR: POOR-FAIR-GOOD (CHECK ONE)
RANGE CONDITION: POOR-FAIR-GOOD (CHECK ONE)  RELATIVE PRODUCTIVENESS OF SITE: LOW-AV.-HIGH (CHECK ONE)
WATERING PLACES (KIND - LAKE, SPRING, ETC.) (DISTANCE) (ADEQUACY) (PERM. - TEMP.)
POISONOUS PLANTS (KINDS) (RECOMMENDATIONS)
KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS (CHECK ONE OR MORE)
PROPER GRAZING PERIOD: SPRING-SUMMER-FALL-WINTER-YEAR LONG (CHECK ONE OR MORE)
WILDLIFE (GAME, PREDATORS, RODENTS - SPECIES AND ABUNDANCE)

SOIL EROSION (CHECK ONE OR MORE)

SOIL TEXTURE (TO SIX INCHES DEEP)

CHECK IN APPROPRIATE BLOCKS

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ALKALI (CHECK IF EVIDENT)

SLOPE IN PERCENT (CIRCLE APPROPRIATE CLASSIFICATION) 0 TO 5, 6 TO 10, 11 TO 20, 21 TO 40, 41 TO 60, 61 TO 80, 81+

EXPLANATION OF GULLY TERMS: OCCASIONAL GULLIES ARE GULLIES MORE THAN 100 FEET APART. FREQUENT GULLIES ARE GULLIES LESS THAN 100 FEET APART. SHALLOW GULLIES ARE THOSE EASILY CROSSABLE BY STOCK. DEEP GULLIES ARE THOSE DEEP ENOUGH TO INTERFERE WITH STOCK MOVEMENTS.

ADDITIONAL TYPE COMMENTS

NOTE:

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Range Survey Write-Up Sheet  
Adapted to Square Foot Density Method

**Project:** Robert Roe  
**Examiner:** John Doe  
**Type:** 6  
**Total Density**  
**Forage Density**  
**F.A. Factor** for C&H  
**C & H or S & G**

**Date:** August 15, 1937  
**Location:** Sec. 11 & 2, T. 16 N., R. 16 W.

**Species Density**  
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**Utilization Cuts:**  
- Slope  
- % Timber  
- % Rocks  
- % Unstable Soils  
- % Lack of Water  
- % Erosion  
- Total Cut  

**Sec. 11:**  
- PLOT NUMBER | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL DENSITY | AVERAGE DENSITY | PAL. F.F. |
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**Sec. 2:**  
- Species Density  
- Number of plots: 10
TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER

(CHECK ONE)

PLANT VIGOR: POOR-FAIR-GOOD

(CHECK ONE)

RANGE CONDITION: POOR-FAIR-GOOD

(CHECK ONE)

RELATIVE PRODUCTIVENESS OF SITE: LOW-AVE-HIGH

(CHECK ONE)

WATERING PLACES

(KIND - LAKE, SPRING, ETC.)

(DISTANCE)

(ADEQUACY)

(PERM. - TEMP.)

POISONOUS PLANTS

(KINDS)

(RECOMMENDATIONS)

KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS

(CHECK ONE OR MORE)

PROPER GRAZING PERIOD: SPRING-SUMMER-FALL-WINTER-YEAR LONG

(CHECK ONE OR MORE)

WILDLIFE

(GAME, PREDATORS, RODENTS - SPECIES AND ABUNDANCE)

SOIL EROSION (CHECK ONE OR MORE)

SHEET EROSION EVIDENT

GULLY EROSION

OCCASIONAL GULLIES - SHALLOW

OCCASIONAL GULLIES - DEEP

FREQUENT GULLIES - SHALLOW

FREQUENT GULLIES - DEEP

WIND EROSION

DEPOSITION EVIDENT

REMOVAL EVIDENT

SLOPE IN PERCENT (CIRCLE APPROPRIATE CLASSIFICATION) 0 TO 5, 6 TO 10, 11 TO 20, 21 TO 40, 41 TO 60, 61 TO 80, 81+

SOIL TEXTURE (TO SIX INCHES DEEP)

CHECK IN APPROPRIATE BLOCKS

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<thead>
<tr>
<th>LIGHT</th>
<th>GRAVELLY</th>
<th>STONY</th>
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ALKALI (CHECK IF EVIDENT)

EXPLANATION OF GULLY TERMS: OCCASIONAL GULLIES ARE GULLIES MORE THAN 100 FEET APART. FREQUENT GULLIES ARE GULLIES LESS THAN 100 FEET APART. SHALLOW GULLIES ARE THOSE EASILY CROSSABLE BY STOCK. DEEP GULLIES ARE THOSE DEEP ENOUGH TO INTERFERE WITH STOCK MOVEMENTS.

ADDITIONAL TYPE COMMENTS

NOTE:

THE INFORMATION CONTAINED ON THIS SHEET IS PRIMARILY A FORAGE INVENTORY. WHEN AND IF FURTHER DATA ARE SECURED ON TIMBER, WATER, SOILS, EROSION, WILDLIFE, ETC., BY EXPERTS ALONG THESE LINES, SUCH INFORMATION SHOULD BE FURTHER CORRELATED TO BEST SERVE RANGE MANAGEMENT.
RANGE SURVEY WRITE-UP SHEET
ADAPTED TO SQUARE FOOT DENSITY METHOD

PROJECT: Robert Roe
EXAMINER: John Doe
TYPE: 6

TOTAL DENSITY
FORAGE DENSITY % PAL.
F.A. FACTOR FOR
C & H OR S & G

DATE: August 15, 1937
LOCATION: Sec. 10 & 11, T. 16 N., R. 16 E
S., T. & R. - AERIAL PHOTO NO.
TIMBER: PP (COMP.) Good
(Reprod.) (Dens.) (Age)
PP light 5-20
(light) (grazing)
(dense) (cause)

UTILIZATION CUTS:
SLOPE % TIMBER % ROCKS % LACK OF WATER % EROSION %
UNSTABLE SOILS %

Sec. 10
SPECIES DENSITY Sec. 11

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</table>
**TYPE COMMENTS**

**CURRENT FORAGE UTILIZATION:**  
(Over-proper-under)

**PLANT VIGOR:**  
(Poor-fair-good)

**RANGE CONDITION:**  
(Poor-fair-good)

**RELATIVE PRODUCTIVENESS OF SITE:**  
(Low-av.-high)

**WATERING PLACES:**  
(Kind - lake, spring, etc.)  
(Distance)  
(Adequacy)  
(Perm. - temp.)

**POISONOUS PLANTS:**  
(Kinds)  
(Recommendations)

**KIND OF STOCK BEST SUITED TO RANGE:**  
(Cattle-horses-sheep-goats)

**PROPER GRAZING PERIOD:**  
(Spring-summer-fall-winter-year long)

**WILDLIFE:**  
(Game, predators, rodents - species and abundance)

**SOIL EROSION (CHECK ONE OR MORE):**

- Sheet Erosion Evident
- Gulley Erosion
  - Occasional Gullies - Shallow
  - Occasional Gullies - Deep
  - Frequent Gullies - Shallow
  - Frequent Gullies - Deep
- Wind Erosion
  - Deposition Evident
  - Removal Evident

**SLOPE IN PERCENT (Circle appropriate classification):**

- 0 to 5
- 6 to 10
- 11 to 20
- 21 to 40
- 41 to 60
- 61 to 80
- 81+

**SOIL TEXTURE (TO SIX INCHES DEEP):**  
(Check in appropriate blocks)

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**EXPLANATION OF GULLY TERMS:**  
Occasional Gullies are gullies more than 100 feet apart. Frequent gullies are gullies less than 100 feet apart. Shallow gullies are those easily crossable by stock. Deep gullies are those deep enough to interfere with stock movements.

**ADDITIONAL TYPE COMMENTS**

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**NOTE:**  
The information contained on this sheet is primarily a forage inventory. When and if further data are secured on timber, water, soils, erosion, wild life, etc., by experts along these lines, such information should be further correlated to best serve range management.
RANGE SURVEY WRITE-UP SHEET
ADAPTED TO SQUARE FOOT DENSITY METHOD

PROJECT: Robert Roe
EXAMINER: John Doe
TYPE: 6
TOTAL DENSITY
FORAGE DENSITY % PAL.
F.A. FACTOR FOR
C & H OR S & G

DATE: August 15, 1937
LOCATION: Sec. 2, T. 16 N., R. 16 N
S., T. & R. - AERIAL PHOTO NO.

TIMBER (COMP.) (COND.)
(REPROD.) (DENS.) (AGE)
(INJURY) (CAUSE)

UTILIZATION CUTS:
- SLOPE % TIMBER % ROCKS % LACK OF WATER % EROSION %
- UNSTABLE SOILS %
- TOTAL CUT

SPECIES DENSITY

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TOTAL DENSITY: 52.0
AVERAGE DENSITY: 15.5

DATA (PLOT 8, 9, 10):

- Cge: 5.5, 5.0, 5.0
- Cru: 4.5, 5.0, 4.0
- Ala: 1.0, .5
- Esa: 1.5, .5, .5
- Tre: 1.0, .5, 1.5
- Lbk: .5, .5
- Lun: 1.0, 1.0
- Aaa: 2.0, 1.5, 2.0
- Pde: 1.5, 1.0, 5.0
- Oaq: .5, 1.0, .5
FORM 7646 (BACK)

TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER (CHECK ONE) PLANT VIGOR: POOR-FAIR-GOOD (CHECK ONE)

RANGE CONDITION: POOR-FAIR-GOOD (CHECK ONE) RELATIVE PRODUCTIVENESS OF SITE: LOW-AVG-HIGH (CHECK ONE)

WATERING PLACES (KIND - LAKE, SPRING, ETC.) (DISTANCE) (ADEQUACY) (PERM. - TEMP.)

POISONOUS PLANTS (KINDS) (RECOMMENDATIONS)

KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS (CHECK ONE OR MORE)

PROPER GRAZING PERIOD: SPRING-SUMMER-FALL-WINTER-YEAR LONG (CHECK ONE OR MORE)

WILDLIFE: (GAME, PREDATORS, RODENTS - SPECIES AND ABUNDANCE)

SOIL EROSION (CHECK ONE OR MORE)

SHEET EROSION EVIDENT

GULLY EROSION

OCCASIONAL GULLIES - SHALLOW
OCCASIONAL GULLIES - DEEP
FREQUENT GULLIES - SHALLOW
FREQUENT GULLIES - DEEP

WIND EROSION

DEPOSITION EVIDENT
REMOVAL EVIDENT

SOIL TEXTURE (TO SIX INCHES DEEP)

CHECK IN APPROPRIATE BLOCKS

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<th>LIGHT</th>
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ALKALI (CHECK IF EVIDENT)

SLOPE IN PERCENT (CIRCLE APPROPRIATE CLASSIFICATION) 0 TO 5, 6 TO 10, 11 TO 20, 21 TO 40, 41 TO 60, 61 TO 80, 81+.

EXPLANATION OF GULLY TERMS: OCCASIONAL GULLIES ARE GULLIES MORE THAN 100 FEET APART. FREQUENT GULLIES ARE GULLIES LESS THAN 100 FEET APART. SHALLOW GULLIES ARE THOSE EASILY CROSSABLE BY STOCK. DEEP GULLIES ARE THOSE DEEP ENOUGH TO INTERFERE WITH STOCK MOVEMENTS.

ADDITIONAL TYPE COMMENTS

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

NOTE:

THE INFORMATION CONTAINED ON THIS SHEET IS PRIMARILY A FORAGE INVENTORY. WHEN AND IF FURTHER DATA ARE SECURED ON TIMBER, WATER, SOILS, EROSION, WILDLIFE, ETC., BY EXPERTS ALONG THESE LINES, SUCH INFORMATION SHOULD BE FURTHER CORRELATED TO BEST SERVE RANGE MANAGEMENT.
**SUMMARY SHEET**

**RANGE SURVEY WRITE-UP SHEET**

*ADAPTED TO SQUARE FOOT DENSITY METHOD*

---

**PROJECT**: Robert Roe  
**EXAMINER**: John Doe  
**TYPE**: 6-Cge-Cru  
**TOTAL DENSITY**: 281.5  
**FORAGE DENSITY**: .122  
**F.A. FACTOR**: .0382

---

**DATE**: Aug. 15 & 16, 1957  
**LOCATION**: Sec. 10, T. 16 N., R. 16 E  
**AERIAL PHOTO NO.**: S., T. & R.

---

**TIMBER**

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**SPECIES DENSITY**

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</table>
FORM 764b (BACK)

TYPE COMMENTS

CURRENT FORAGE UTILIZATION: OVER-PROPER-UNDER
(CHECK ONE)

PLANT VIGOR: POOR-FAIR-GOOD
(CHECK ONE)

RANGE CONDITION: POOR-FAIR-GOOD
(CHECK ONE)

RELATIVE PRODUCTIVENESS OF SITE: LOW-AVE-HIGH
(CHECK ONE)

WATERING PLACES
(KIND - LAKE, SPRING, ETC.) (DISTANCE) (ADEQUACY) (PERM. - TEMP.)

POISONOUS PLANTS
(KINDS) (RECOMMENDATIONS)

KIND OF STOCK BEST SUITED TO RANGE: CATTLE-HORSES-SHEEP-GOATS
(CHECK ONE OR MORE)

PROPER GRAZING PERIOD: SPRING-SUMMER-FALL-WINTER-YEAR LONG
(CHECK ONE OR MORE)

WILDLIFE
(GAME, PREDATORS, RODENTS - SPECIES AND ABUNDANCE)

SOIL EROSION (CHECK ONE OR MORE)

SHEET EROSION EVIDENT

GULLY EROSION

OCCASIONAL GULLIES - SHALLOW
OCCASIONAL GULLIES - DEEP
FREQUENT GULLIES - SHALLOW
FREQUENT GULLIES - DEEP

WIND EROSION

DEPOSITION EVIDENT
REMOVAL EVIDENT

SLOPE IN PERCENT (CIRCLE APPROPRIATE CLASSIFICATION) 0 TO 5, 6 TO 10, 11 TO 20, 21 TO 40,
41 TO 60, 61 TO 80, 81+

EXPLANATION OF GULLY TERMS: OCCASIONAL GULLIES ARE GULLIES MORE THAN 100 FEET APART. FREQUENT
GULLIES ARE GULLIES LESS THAN 100 FEET APART. SHALLOW GULLIES ARE THOSE EASILY CROSSABLE BY
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ADDITIONAL TYPE COMMENTS

NOTE:

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SUCH INFORMATION SHOULD BE FURTHER CORRELATED TO BEST SERVE RANGE MANAGEMENT.
<table>
<thead>
<tr>
<th>Type Designation</th>
<th>Sec. by S.A. by Total S.A.</th>
<th>Forage Factor</th>
<th>Forage Acres</th>
<th>Total Density</th>
<th>No. Plots</th>
<th>Ave. Den.</th>
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### Yakima

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<tr>
<th>No. Sheep</th>
<th>Feeder C &amp; H</th>
<th>Yearlings older Equivalent</th>
<th>Yearlings</th>
<th>Young</th>
<th>To</th>
<th>能达到</th>
<th>Annual</th>
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<tbody>
<tr>
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<td>30</td>
<td>1/1</td>
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<tr>
<td>200</td>
<td>200</td>
<td>1/1</td>
<td>2/28</td>
<td>2</td>
<td>400</td>
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<tr>
<td>100</td>
<td>100</td>
<td>1/1</td>
<td>1/31</td>
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### Grain and/or Hay Feeder

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<td>200</td>
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### Public Domain and/or Public Water

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<th>Yearlings</th>
<th>Young</th>
<th>To</th>
<th>能达到</th>
<th>Annual</th>
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</thead>
<tbody>
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### On Other Lands Not Controlled

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<th>Young</th>
<th>To</th>
<th>能达到</th>
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<tbody>
<tr>
<td>60</td>
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<td>5/31</td>
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<td>90</td>
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<tr>
<td>200</td>
<td>200</td>
<td>3/1</td>
<td>5/31</td>
<td>5</td>
<td>600</td>
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<tr>
<td>100</td>
<td>100</td>
<td>2/1</td>
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<td>12/31</td>
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<td>90</td>
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</table>
Pursuant to the authority vested in the Secretary of Agriculture under Section 8 of the Soil Conservation and Domestic Allotment Act, payments will be made in connection with the effectuation of the purposes of Section 7 (a) of the said act in 1937, in accordance with the provisions of this Western Region Bulletin No. 101 - Washington, and such modifications or other provisions as may hereafter be made.

The 1937 Agricultural Conservation Program has been developed in accordance with the provisions of Sections 8, 15, and 16 of the Soil Conservation and Domestic Allotment Act, but the payment of any benefits pursuant to the provisions of this announcement is contingent upon such appropriation, if any, as the Congress of the United States may hereafter make for such purpose, and the amounts of such payments will be finally determined by such appropriation and the extent of participation in the program. The rates of payments, deductions, and allowances herein set out are computed upon the basis of an appropriation of $500,000,000 and 85 percent participation. Such rates of payments, deductions, and allowances may be increased or decreased depending upon the extent of participation in the Western Region, but such variations will not be in excess of 10 percent.

**PART I. DEFINITIONS**

As used herein and in all forms and documents relating to the 1937 Agricultural Conservation Program in Washington, the following terms shall have meanings ascribed to them as follows:

SECRETARY means the Secretary of Agriculture of the United States.

WESTERN REGION means the area included in the States of North Dakota, Kansas, Colorado, Wyoming, Montana, New Mexico, Arizona, California, Utah, Nevada, Idaho, Oregon, and Washington.

WESTERN DIVISION means the division of the Agricultural Adjustment Administration in charge of the 1937 Agricultural Conservation Program in the Western Region.

STATE COMMITTEE or STATE AGRICULTURAL CONSERVATION COMMITTEE means the group of individuals designated to assist in the administration of the 1937 Agricultural Conservation Program in Washington.
COUNTY COMMITTEE or COUNTY AGRICULTURAL CONSERVATION COMMITTEE means the group of individuals designated for a county to assist in the administration of the 1937 Agricultural Conservation Program in such county.

PERSON means an individual, partnership, association, or corporation, and wherever applicable a State, a political subdivision of a State or any agency thereof or any other governmental agency that may be designated by the Secretary.

OWNER means a person who owns land which is not rented to another for cash, for a fixed commodity payment, or for the crop from a fixed acreage, or who rents land from another for cash, for a fixed commodity payment, or for the crop from a fixed acreage; or who is purchasing land on installments for cash, for a fixed commodity payment, or for the crop from a fixed acreage, or for a share of the crop.

OPERATOR means a person who, as owner or share tenant, is operating a farming unit and is entitled to receive all or a portion of the crops produced thereon, or the proceeds thereof.

SHARE TENANT means a person other than an owner who is operating a farm and is entitled to receive a portion of the crops produced thereon, or the proceeds thereof. If a share tenant sublets a farm to another person, and both such persons are entitled to share in the crops produced thereon, or the proceeds thereof, both shall be deemed share tenants.

FARM means all tracts of farm land in the same county under the same ownership, operated as all or part of a single farming unit by the same operator in 1937.

FARMING UNIT means all land which is farmed by an operator in 1937 as a single unit, with work stock, farm machinery, and labor substantially separate from that for any other land.

CROPLAND means all farm land which has been tilled and from which at least one crop other than wild hay was harvested or planted for harvest between January 1, 1930, and January 1, 1937 and all other farm land devoted on January 1, 1937 to orchards or vineyards other than those abandoned.

SOIL-DEPLETING BASE means the total number of acres established for the farm as the acreage normally used for the production of soil-depleting crops thereon.

SOIL-CONSERVING BASE means the number of acres obtained by subtracting the soil-depleting base from the total number of acres of cropland, excluding the acreage devoted to commercial orchards on January 1, 1937.
DIVERSION PAYMENT means a payment for the diversion of acreage from any soil-depleting base and may be referred to as a Class I payment.

SUGAR BEET PAYMENT means a payment made with respect to land on which sugar beets are grown in 1937 and may be referred to as a Class I payment.

SOIL-BUILDING PAYMENT means a payment for the carrying out of approved soil-building practices and may be referred to as a Class II payment.

SOIL-BUILDING ALLOWANCE means the largest amount for any farm which may be earned as a soil-building payment on such farm.

NON-CROP PASTURE LAND means farm land, other than cropland or range land, fenced, and used exclusively for pasture.

RANGE-BUILDING PAYMENT means a payment for the carrying out of approved range-building practices.

RANGE-BUILDING ALLOWANCE means the largest amount for any ranching unit which may be earned as a range-building payment on such ranching unit.

RANCH OPERATOR means a person who as owner, cash tenant, or share tenant, operates, or a person who acts in similar capacity in the operation of, a ranching unit.

RANGE LAND means any land, other than that owned or controlled by the United States Government, or any agency thereof, in which a ranch operator has such a legal estate or interest as to give him control thereof, which produces forage for range livestock without cultivation or general irrigation, ten acres or more of which are required to graze one animal unit.

RANCHING UNIT means all range land which is used by the ranch operator as a single unit in producing range livestock, with farm machinery, work stock, and labor substantially separate from that of any other range land.

ANIMAL UNIT means one cow, one horse, five sheep, five goats, or the equivalent thereof. 1/

---

1/ Two yearlings equal one cow or one horse. A calf or colt shall be classed as a yearling, and a lamb shall be classed as a mature sheep, after January 1 of the year following its birth.
GRAZING CAPACITY OF RANGE LAND means that number of animal units which such land will sustain, on a twelve-month basis, over a period of years without injury to the range, forage, tree growth, or watershed.

DIVERSION FARM means any farm with respect to which the soil-depleting base is equal to, or in excess of, both 20 acres and 20 percent of the total cropland on the farm. Upon recommendation of the County Committee, and the State Committee, the Secretary may designate for any county, or other area, a different basis for determining diversion farms.

NON-DIVERSION FARM means any farm not a diversion farm.

COMMERCIAL ORCHARDS means the acreage in tree fruits, planted nut trees, vineyards, hops, or bush fruits on the farm on January 1, 1937, from which the principal part of production is normally sold, including also the acreage of young non-bearing orchards from which the principal part of production will be sold.

COMMERCIAL VEGETABLES means the acreage of vegetables, bulbs, or truck crops (including potatoes, sweet-potatoes and strawberries, but excluding sweet corn for canning and peas for canning) from which the principal part of production was sold off the farm.

PART II. RATES AND CONDITIONS OF DIVERSION AND SUGAR BEET PAYMENTS

Payment will be made in connection with the utilization in 1937 of the land on any farm in the State of Washington at the rates and subject to the conditions set forth herein.

Sec. 1. Diversion Payments. With respect to diversion farms, payment will be made for each acre diverted in 1937 from the soil-depleting base established for the farm, not in excess of fifteen percent of such base, at an average rate for the United States of $6.00 per acre, varying among individual farms as the productivity of the cropland on the farm varies from the average productivity of all such cropland in the United States. 1/

Sec. 2. Sugar Beet Payments. Payment will be made with respect to the acreage of sugar beets grown on a farm in 1937, not in excess of the sugar beet acreage allotment for the farm, at a rate per acre equal to $2.5 cents for each 100 pounds, raw value, of sugar commercially recoverable from the normal yield per acre of sugar beets for the farm. Provided, that practices with relation to sugar beets are carried out on such farm in 1937, as follows:

1/ The methods to be followed in determining the productivity of the cropland on the farm are contained in Western Region Bulletin No. 102.
A. An acreage equal to not less than 40 percent of the 1937 acreage of sugar beets is devoted to soil-conserving crops on the farm in 1937 on land which is customarily used in a rotation with sugar beets; or

B. Both of the following:

1. Sugar beets are grown in 1937 only on land not devoted to sugar beets in more than two of the three years, 1934, 1935 and 1936, and

2. An acreage equal to not less than 20 percent of the 1937 acreage of sugar beets is devoted to soil-conserving crops on the farm in 1937 on land which is customarily used in a rotation with sugar beets.

Provided, however, that if either 1 or 2 alone is performed, the payment will be one-half of the payment that would otherwise be made.

The acreage allotment with respect to which the sugar beet payment will be made will be the acreage of sugar beets grown on the farm in 1937, unless the estimated total acreage of sugar beets for harvest in the United States in 1937 exceeds the acreage determined by the Agricultural Adjustment Administration to be required with normal yields to produce 1,550,000 short tons, raw value, of sugar. In the event the estimated total acreage of sugar beets planted for harvest in the United States in 1937 exceeds the acreage so determined, the acreage allotment for the farm shall be that percentage of the acreage of sugar beets grown on the farm in 1937 which is computed by dividing the acreage so determined to be required to produce 1,550,000 short tons, raw value, of sugar by the total acreage of sugar beets planted for harvest in the United States in 1937.

PART III. RATES AND CONDITIONS OF SOIL-BUILDING PAYMENT

Sec. 1. Soil-Building Payment. Payment will be made for carrying out on cropland or on non-crop pasture land in 1937 any of the soil-building practices listed below, provided that the soil-building payment with respect to any farm shall not exceed the soil-building allowance for the farm.

The soil-building practices prescribed in this section shall not be eligible for payment unless such practices are carried out in a locality where, in the determination of the State Committee, such practices are desirable from the standpoint of agricultural conservation and are carried out in conformity with methods generally recognized as desirable for the locality, and which tend to effectuate the purposes of the 1937 Agricultural Conservation Program.
## Practices and Conditions

<table>
<thead>
<tr>
<th>Practices and Conditions</th>
<th>Rate of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Perennial legumes including alfalfa, red clover, white clover, Ladino clover, and such other perennial legumes as are approved by the Director of the Western Division.</td>
<td>$4.00 per Acre</td>
</tr>
<tr>
<td>1. Seeding and establishment of a good stand on cropland in 1937 when good seed of an adapted variety is used, either alone or with a nurse crop which is not harvested for grain or hay.</td>
<td>$2.50 per Acre</td>
</tr>
<tr>
<td>2. Seeding on cropland in 1937 when good seed of an adapted variety is used under either of the following conditions:</td>
<td></td>
</tr>
<tr>
<td>a. Without establishment of a good stand if seeded alone or with a nurse crop which is not harvested for grain or hay.</td>
<td></td>
</tr>
<tr>
<td>b. With or without establishment of a good stand if seeded with a nurse crop which is harvested for grain or hay.</td>
<td></td>
</tr>
<tr>
<td>B. Biennial legumes (except sweet clover or red clovers) including alsike, and such other biennial legumes as are approved by the Director of the Western Division.</td>
<td>$3.00 per Acre</td>
</tr>
<tr>
<td>1. Seeding and establishment of a good stand on cropland in 1937 when good seed of an adapted variety is used, either alone or with a nurse crop which is not harvested for grain or hay.</td>
<td>$2.00 per Acre</td>
</tr>
<tr>
<td>2. Seeding on cropland in 1937 when good seed of an adapted variety is used under either of the following conditions:</td>
<td></td>
</tr>
<tr>
<td>a. Without establishment of a good stand if seeded alone or with a nurse crop which is not harvested for grain or hay.</td>
<td></td>
</tr>
<tr>
<td>b. With or without establishment of a good stand if seeded with a nurse crop which is harvested for grain or hay.</td>
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</tbody>
</table>
C. Perennial grasses including bluegrass, orchard, brome, rye grasses, bent grasses, fescues, tall oat grass, and wheat grasses (except crested wheat grass) and such other perennial grasses as are approved by the Director of the Western Division when seeded alone or in approved mixtures.

1. Seeding and establishment of a good stand on cropland in 1937, either alone or with a nurse crop which is not harvested for grain or hay.

2. Seeding on cropland in 1937, under either of the following conditions:
   a. Without establishment of a good stand if seeded alone or with a nurse crop which is not harvested for grain or hay.
   b. With or without establishment of a good stand if seeded with a nurse crop which is harvested for grain or hay.

D. Mixtures of perennial and biennial legumes and perennial grasses recommended by the State Experiment Station and approved by the State Committee.

1. Seeding and establishment of a good stand on cropland in 1937, either alone or with a nurse crop which is not harvested for grain or hay.

2. Seeding on cropland under either of the following conditions:
   a. Without establishment of a good stand if seeded alone or with a nurse crop which is not harvested for grain or hay.
   b. With or without establishment of a good stand if seeded with a nurse crop which is harvested for grain or hay.

E. Crested Wheat Grass seeded on cropland in 1937. 

<table>
<thead>
<tr>
<th>Practices and Conditions</th>
<th>Rate of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Perennial grasses</td>
<td>$3.50 per Acre</td>
</tr>
<tr>
<td>D. Mixtures of perennial</td>
<td>$2.00 per Acre</td>
</tr>
<tr>
<td>and biennial legumes</td>
<td></td>
</tr>
<tr>
<td>E. Crested Wheat Grass</td>
<td>$3.00 per Acre</td>
</tr>
</tbody>
</table>
F. Biennial and Annual Sweet Clover, bur clover, Austrian winter peas, and such other annual legumes as are approved by the Director of the Western Division.

1. Seeding and establishment of a good stand on cropland in 1937, either alone or with a nurse crop which is not harvested for grain or hay. $2.00 per Acre

2. Seeding on cropland under either of the following conditions:

   a. Without establishment of a good stand if seeded alone or with a nurse crop which is not harvested for grain or hay. $1.50 per Acre

   b. With or without establishment of a good stand if seeded with a nurse crop which is harvested for grain or hay.

G. Reseeding farm pastures and meadows. When perennial grasses or perennial legumes, or mixtures thereof, are seeded on pasture land in 1937. Payment not in excess of $2.00 per acre. $0.20 per pound of seed sown

H. Winter wheat or rye when seeded in the spring of 1937 not later than June 15, 1937, on cropland and utilized only as a pasture or cover crop. $1.00 per Acre

I. Forest trees.

1. Planting of trees on cropland between January 1, 1937, and December 31, 1937, provided the land is maintained in a good state of cultivation and plantings are protected from livestock with not less than 200 living trees per acre at the time performance is checked. $10.00 per Acre

2. Maintaining trees planted since January 1, 1934, by cultivation of interspaces and replacements of any dead trees to not less than 200 living trees per acre at the time performance is checked. $4.00 per Acre
<table>
<thead>
<tr>
<th>Practices and Conditions</th>
<th>Rate of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Green manure. When green manure crops, including rye, annual legumes, and mixtures of annual legumes and small grains are grown in 1937 on cropland and turned under after attaining at least two months' growth with no utilization for grain, pasture, seed or canning purposes.</td>
<td></td>
</tr>
<tr>
<td>1. Rye</td>
<td>$1.00 per Acre</td>
</tr>
<tr>
<td>2. Other green manure crops:</td>
<td></td>
</tr>
<tr>
<td>a. On irrigated land</td>
<td>$2.00 per Acre</td>
</tr>
<tr>
<td>b. On all land in Western Washington.</td>
<td>$2.00 per Acre</td>
</tr>
<tr>
<td>c. On non-irrigated land in Eastern Washington.</td>
<td>$1.00 per Acre</td>
</tr>
<tr>
<td>K. Perennial noxious weed control.</td>
<td></td>
</tr>
<tr>
<td>3/ When, after approval of the County Committee, seriously infested plots of weeds listed below, are controlled by periodic cultivation or by chemical treatment in accordance with specifications issued by the Director of the Western Division.</td>
<td></td>
</tr>
<tr>
<td>1. Chemical treatment.</td>
<td>$10.00 per Acre</td>
</tr>
<tr>
<td>2. Periodic cultivation.</td>
<td>$5.00 per Acre</td>
</tr>
<tr>
<td>L. Controlled fallow</td>
<td></td>
</tr>
</tbody>
</table>

1/ "Western Washington" as used herein means the following counties: Skamania, Clark, Cowlitz, Wahkiakum, Pacific, Grays Harbor, Lewis, Thurston, Mason, Kitsap, Pierce, Jefferson, Clallam, King, Snohomish, Skagit, Whatcom, San Juan, and Island.

2/ "Eastern Washington" means those counties in Washington not included in the definition of Western Washington.

3/ Perennial noxious weeds shall include: Canada thistle, bindweed or wild morning glory, white top or hoary cress, leafy spurge, Siberian mustard, Russian knapweed.
Practices and Conditions

<table>
<thead>
<tr>
<th>Practices and Conditions</th>
<th>Rate of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trashy fallow. When cropland is summer fallowed in such a manner as to leave all crop</td>
<td>$0.50 per Acre</td>
</tr>
<tr>
<td>residues on or near the surface of the soil to prevent erosion from wind or water and no</td>
<td></td>
</tr>
<tr>
<td>straw or stubble is burned or otherwise removed from such land.</td>
<td></td>
</tr>
<tr>
<td>2. Establishment of Strip Cropping and Fallow. When fallow is performed in 1937 in strips</td>
<td>$0.50 per Acre</td>
</tr>
<tr>
<td>not more than 10 rods in width approximately at right angles to the prevailing wind,</td>
<td></td>
</tr>
<tr>
<td>alternated with strips of small grain crops or stubble of equal width. Payment to be</td>
<td></td>
</tr>
<tr>
<td>made on the acreage of fallow land only, and then only when additional to the acreage</td>
<td></td>
</tr>
<tr>
<td>used for such practice in 1936.</td>
<td></td>
</tr>
<tr>
<td>3. Establishment of Contour Strip Cropping and Fallow. When summer fallow is performed</td>
<td>$0.75 per Acre</td>
</tr>
<tr>
<td>in 1937 in strips not more than 10 rods in width, alternated with strips of small grain</td>
<td></td>
</tr>
<tr>
<td>crops or stubble of equal width, strips to follow the contour of the field, starting at</td>
<td></td>
</tr>
<tr>
<td>the highest point in the field, without the burning of stubble or crop residues. Payment</td>
<td></td>
</tr>
<tr>
<td>to be made on the acreage of fallow land only, and then only when additional to the</td>
<td></td>
</tr>
<tr>
<td>acreage used for such practice in 1936.</td>
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</tr>
</tbody>
</table>

M. Natural reseeding in the Dry Land Areas of Washington. 1/ Restoring to native grass of land
on which a crop was harvested or seeded for harvest at least once since January 1, 1930, and which,
in accordance with good farming practices should be permanently devoted to grass: Provided;
(1) the operator and owner have designated the acreage and stated his or their intention to restore
such acreage to grass; (2) approval has been obtained from the County Committee; (3) such land is
not pastured, cropped or tilled in 1937; and (4) any volunteer growth containing noxious weeds is
clipped before seed is formed.

1/ As used herein, the "dry land areas" means the area specified in footnote 1/, Sec. 1, WR Bulletin -2- Washington, Revised, issued July 14, 1936.
Practices and Conditions

<table>
<thead>
<tr>
<th>Practices</th>
<th>Conditions</th>
<th>Rate of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.</td>
<td>Removal of all trees in abandoned orchards and seeding to legumes and grasses. When all trees are removed from an abandoned orchard with stump holes filled and leveled, not later than June 1, 1937, followed by seeding and establishment of legumes or grasses in 1937.</td>
<td>$5.00 per Acre</td>
</tr>
<tr>
<td>O.</td>
<td>Mulching in orchards. When mulching materials of at least two tons, dry weight, of leguminous hay, or straw are applied per acre in 1937.</td>
<td>$4.00 per Acre</td>
</tr>
<tr>
<td>P.</td>
<td>Superphosphate application in Western Washington only. When superphosphate is applied in 1937 to new seedings of legumes or legume and grass mixtures at or before time of seeding and to old meadows and cropland pastures at rate of not less than 60 pounds of available P₂O₅ per acre in combination with not less than 6 tons of barnyard manure or its equivalent in liquid manure.</td>
<td>$2.25 per Acre</td>
</tr>
<tr>
<td>Q.</td>
<td>Lime application for Western Washington only. When applied in 1937 to new seedings of legumes or legume and grass mixtures at or before time of seeding, in an amount not less than one ton nor more than three tons per acre of ground limestone or its equivalent in any other form of agricultural lime.</td>
<td>$3.00 per ton</td>
</tr>
</tbody>
</table>

Sec. 2. Combinations of Practices for Soil-Building Payments on the Same Acreage. Payments will not be made for more than one soil-building practice carried out on the same acreage except as follows:

a. Any one of the practices specified in items A, B, C, D, E, and F in addition to the practice specified in item L-1,

b. Any one of the practices specified in items A, B, and D in addition to either of the practices specified in items P and Q,

c. The practice specified in Item L-1 in addition to either of the practices specified in items L-2 and L-3.
Sec. 3. Soil-Building Allowance. The soil-building allowance for a farm shall be computed as follows:

A. For a diversion farm, $10.00 or the sum of the following items, whichever is greater:

1. $1.00 for each acre of soil-conserving crops on the farm in 1937 not in excess of the soil-conserving base.

2. $4.00, varying among individual farms as the productivity of the cropland on the farm varies from the average productivity of all such cropland in the United States, \( \frac{1}{1} \) for each acre diverted for payment from the soil-depleting base.

3. 80 cents, varying among individual farms as the productivity of the cropland on the farm varies from the average productivity of all such cropland in the United States, \( \frac{1}{1} \) for each acre devoted to commercial orchards on the farm on January 1, 1937.

4. $1.00 for each acre of commercial orchards on the farm on January 1, 1937.

5. $1.00 for each acre of cropland on which one crop of commercial vegetables was grown in 1936.

6. $2.00 for each acre of cropland on which two or more crops of commercial vegetables were grown on the same acreage in 1936.

7. Fifty cents for each animal unit, in excess of five, which the non-crop pasture land on the farm will carry during the normal pasture season; Provided, however, that if the normal pasture season is ten months or more the rate shall be $1.00 for each animal unit in excess of five.

B. For a non-diversion farm $20.00 or the sum of the following items whichever is greater:

1. Eighty cents, varying among individual farms as the productivity of the cropland on the farm varies from the average productivity of all such cropland in the United States, \( \frac{1}{1} \) for each acre of cropland on the farm in 1937.

\( \frac{1}{1} \) The methods to be followed in determining the productivity of the cropland on the farm are contained in Western Region Bulletin No. 102.
2. $1.00 for each acre of commercial orchards on the farm on January 1, 1937.

3. $1.00 for each acre of cropland on which only one crop of commercial vegetables was grown in 1936.

4. $2.00 for each acre of cropland on which two or more crops of commercial vegetables were grown on the same acreage in 1936.

5. Fifty cents for each animal unit, in excess of five, which the non-crop pasture land on the farm will carry during the normal pasture season, provided, however, that if the normal pasture season is 10 months or more the rate shall be $1.00 for each animal unit in excess of five.

PART IV. RATES AND CONDITIONS OF RANGE-BUILDING PAYMENTS

Sec. 1. Range-Building Practices and Rates. Payment will be made for the carrying out on range land in 1937 such of the following range-building practices as are approved by the County Committee for the ranching unit, prior to their institution.

<table>
<thead>
<tr>
<th>Practices and Conditions</th>
<th>Rate of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Contouring</td>
<td>$0.50 per acre</td>
</tr>
<tr>
<td>For furrowing on the contour, furrows to be not less than 8 inches in width and 4 inches in depth, dammed at intervals of not more than 100 feet and constructed on slopes in excess of 2%, with intervals between furrows not more than 25 feet.</td>
<td></td>
</tr>
<tr>
<td>B. Development of springs and seeps.</td>
<td>$50.00 per spring or seep</td>
</tr>
<tr>
<td>For digging out each spring or seep, protecting the source from trampling, and conveying the water, in a trough, or in a pipe not less than one inch in diameter, to a tank.</td>
<td></td>
</tr>
<tr>
<td>C. Earthen pits or reservoirs for holding run-off and impounding precipitation.</td>
<td>$0.15 per cubic yard of fill or excavation</td>
</tr>
<tr>
<td>For constructing earthen pits or reservoirs, with spillways adequate to prevent dams from washing out, in accordance with specifications issued by the Director of the Western Division.</td>
<td></td>
</tr>
</tbody>
</table>
Practices and Conditions

<table>
<thead>
<tr>
<th>Practice</th>
<th>Rate of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Wells</td>
<td>$1.00 per linear foot</td>
</tr>
<tr>
<td>E. Water Spreading to Prevent Soil Washing</td>
<td>$0.10 per 100 linear feet of permanent ditching</td>
</tr>
<tr>
<td>F. Range Fences</td>
<td>$0.30 per rod</td>
</tr>
<tr>
<td>G. Rodent Control</td>
<td>$0.15 per acre</td>
</tr>
<tr>
<td>H. Reseeding depleted range land</td>
<td>$0.20 per pound of seed sown</td>
</tr>
</tbody>
</table>

For drilling or digging of wells, casing to be not less than 4 inches in diameter, provided a windmill or power pump is installed, and the water is piped to a tank or storage reservoir. An artesian well may qualify for payments provided adequate stock water is made available during the grazing season and the water is conveyed in a trough or a pipe to a tank or storage reservoir.

For constructing and maintaining permanent ditching for the diversion of surface water to prevent soil washing, not including any temporary field ditching or any ditching primarily for purposes of irrigation, sub-surface drainage or under-drainage, or primarily for any purpose other than the prevention of soil washing. (See Farmers' Bulletin No. 1606, Farm Drainage, published by the U. S. Department of Agriculture)

For constructing cross fences or drift fences of not less than three wires, with good sound posts not more than 20 feet apart, with corner posts well braced and with wires tightly stretched.

For destroying at least ninety percent of the range-destroying rodents on an infested area as follows:

1. Pocket gophers
2. Ground squirrels

For reseeding depleted range land with good seeds of adapted varieties of perennial grasses, as follows: Western wheat grass, crested wheat grass, brome grass, and slender wheat grass.
Practices and Conditions

I. Fire Guards.

For the establishment of fire guards, not less than four feet in width, by plowing furrows or otherwise exposing the mineral soil.

J. Natural Reseeding by Deferred Grazing.

Payment will be made for withholding range land from grazing for the period (from the start of forage growth to seed maturity) established by the State Committee, at the rate of 35 cents per full month of such period for each animal unit of that number of animal units, not in excess of 25 percent of the grazing capacity, which is the same percentage of the grazing capacity of the ranching unit as the acreage upon which grazing is deferred is of the total acreage of range land in the ranching unit. Payment will not be made for this practice (1) if the operator permits the remainder of the range land in the ranching unit to be grazed to an extent that causes deterioration of such range land, and (2) if the deferred grazing is carried out on range land in the ranching unit which normally is not used for grazing during such period.

Sec. 2. Range-Building Allowance. The range-building allowance for any ranching unit shall be equal to $1.50 times the grazing capacity of the range land in the ranching unit.

Sec. 3. Range-Building Payment. Payments made for carrying out range-building practices shall not be subject to deductions for increase in acreage of soil-depleting crops.

Sec. 4. Eligibility for Payments. Application for range-building payments may be made only by ranch operators. In case there are two or more ranch operators, the application must be made by all the ranch operators. Range-building payments will be made to (1) a solo ranch operator or (2) each ranch operator of a group of two or more ranch operators. Provided, all ranch operators signify in the application for payment a percentage of the total payment under the application for payment, to be made to each ranch operator.
PART V. DIVISION OF PAYMENTS

Sec. 1. Division of Payments Between Owner and Operator.

A. All payments, except sugar beet and range-building payments, shall be divided among owners and share-tenants in the same proportion as the principal crop or the proceeds thereof is divided under their lease or operating agreement. The term "principal crop" as used herein means the soil-depleting crop to which the greatest number of acres on the farm is devoted in 1937; Provided, however, that

1. If there is no soil-depleting crop which has a larger acreage in 1937 than any other soil-depleting crop, the principal crop shall be the soil-depleting crop which is of major importance in terms of acreage in the county in which such farm is located.

2. If there is no soil-depleting crop seeded on the farm for harvest in 1937, the principal crop shall be the soil-conserving crop having the largest 1937 acreage.

Upon the recommendation of the State Committee or the Agricultural Adjustment Administration, and approval by the Secretary, a different basis for determining the principal crop may be employed.

B. The sugar beet payment shall be divided among owners and share-tenants in the same proportion as the sugar beet crop, or the proceeds thereof, is divided under their lease or operating agreement. All payments shall be made without regard to questions of title under State law, without deductions of claims for advances, and without regard to any claim or lien against the crop, or proceeds thereof, in favor of the owner or any other creditor.

Sec. 2. 1937 Owner or Operator Entitled to Payments. All payments, except sugar beet and range-building payments, shall be made to the 1937 owner or operator who shares in the principal crop on the farm in 1937. However, if the County Committee determines that a 1937 operator of a farm, who did not share in such principal crop, did contribute as an operator to performance on the farm qualifying for such payments, such operator shall be entitled to such portion of the operator's share of the payment to be made with respect to the farm as is agreed upon in writing by the operators entitled to share in such payments and is approved by the County Committee, or as is determined by the County Committee in the absence of such agreement.

PART VI. GENERAL CONDITIONS FOR PAYMENT

Sec. 1. Modifications for Farms under Special Program. The Secretary may designate one or more counties or other areas for which special programs for 1937 will be developed under the Soil Conservation and Domestic Allotment Act. In the event that any such county or other
area is designated, the allowance, rates and conditions of payment for such county or other area will be set forth in a special bulletin and the provisions of the State bulletin shall not be applicable in such county or other designated area.

On any farm where a program is carried out in cooperation with the Soil Conservation Service or the Resettlement Administration, payment will be made only for such diversion and for carrying out such soil-building practices as are, prior to performance, approved for the farm by the County Committee in accordance with instructions issued by the Secretary.

Sec. 2. Destruction of Foods, Fibers, and Feed Grains.—Notwithstanding any of the provisions of Parts II, III, and IV, of this bulletin no payments will be made for changes in the use of land which involve the destruction of foods, fibers, or feed grains.

Sec. 3. Payments Restructured to Effectuation of Purposes of the Program.

Notwithstanding any of the provisions of Parts II, III, and IV of this bulletin, payment will be withheld if the Secretary determines that any rotation, cropping or other practices adopted in 1937 tend to defeat the purposes of the 1937 Agricultural Conservation Program.

Sec. 4. Deductions for Increase in Acreage of Soil-Depleting Crops.

If the 1937 acreage of soil-depleting crops on any farm is in excess of the soil-depleting base for the farm, a deduction shall be made from the payment which otherwise would be made with respect to such farm in an amount computed by multiplying the number of such excess acres by the rate per acre determined for the farm under Section 1, part II; Provided, however, That if the soil-depleting base for the farm is less than 20 acres, such deduction shall be computed only with respect to the 1937 acreage of soil-depleting crops in excess of 20 acres.

Sec. 5. Change in Lease or Cropping Agreement Affecting Payments to Tenants.

If the Secretary, upon the basis of an investigation by the State Committee, finds that any person has for 1937 made any change from the 1935 or 1936 leasing or cropping agreement for the farm for the purpose of, or which would have the effect of, diverting to such person any payment to which tenants would be entitled if the 1935 or 1936 leasing or cropping agreement were in effect for 1937, the amount of any payment which otherwise would be made to such person may be withheld in whole or in part and payments may be made to, or divided among, such tenants in proportion to the share of the principal crop to which such tenants were entitled under the 1935 or 1936 leasing or cropping agreement.
Sec. 6. Practices Not Qualifying for Payment.

A. No payment will be made with respect to any soil-building or range-building practice unless it is carried out in accordance with the general standards of good farming or good ranching practices.

B. No payment shall be made with respect to any soil-building or range-building practice for which the labor, seed, or materials are furnished by any State or Federal agency.

Sec. 7. Association Expenses. There shall be deducted pro rata from the payments made to members of each County Agricultural Association all or such part as the Secretary may prescribe, of the estimated administrative expenses incurred or to be incurred by such Association in cooperating in carrying out in such County the purposes of the Soil-Conservation and Domestic Allotment Act.

There shall be credited to each County Agricultural Conservation Association for the payment of administrative expenses the amount of $2.00 per farm for that number of farms with respect to which it is estimated by the Agricultural Adjustment Administration the total payment (prior to deduction of any administrative expenses) will be $20.00 or less.

Sec. 8. Application and Eligibility for Payment.

A. Payments will only be made upon application filed with the county committee. Each person applying for a payment will be required to show that work sheets have been executed either in 1936 or 1937 covering all land in the county owned or operated by him and the extent to which the conditions upon which the payment is to be made have been met in 1937. Any person applying for a payment who owns or operates land in more than one county in the State may be required to file in the office of the State committee a list of all such land.

B. An application for a payment may be made by an owner, share tenant, ranch operator, or such other persons as may be designated by the Secretary.

C. A farming or ranching unit located in two or more adjoining counties shall be regarded as located in the county in which the principal dwelling thereof is located, or, if there is no such principal dwelling, such farming or ranching unit shall be regarded as located in the county in which the major portion of such farming or ranching unit is located.
Sec. 9. Land to be Covered by Work Sheet.

A. Where one or more farms in the same county are under the same ownership and are operated in 1937 as part or all of a single farming unit by the same operator, such farm or farms shall be covered by one work sheet.

B. Where two or more farms in the same county are under different ownership, even though they are operated in 1937 as part or all of a single farming unit by the same operator, each separately owned farm shall be covered by a separate work sheet.

C. Where two or more farms in the same county are under the same ownership and are operated in 1937 as separate farming units, each separately operated farm shall be covered by a separate work sheet.

D. Where land comprising part of a farming unit is rented on shares and land comprising part of the same farming unit used for hay, meadow, pasture, or similar uses is rented for cash from the same landlord, it will not be necessary to execute more than one work sheet for both such share-rented and such cash-rented land.

E. Where land comprising part of a farming unit is rented on shares and land comprising part of the same farming unit not used for hay, meadow, pasture, or similar uses, is rented for cash from the same or a different landlord, it will be necessary to execute a work sheet for such share-rented land and a separate work sheet for such cash-rented land.

PART VII. ESTABLISHMENT OF BASES

Sec. 1. Soil-depleting base. There will be established a soil-depleting base for each farm which shall represent the acreage normally used for the production of soil-depleting crops on such farm.

A. On each farm for which a work sheet was executed under the 1936 Agricultural Conservation Program, such soil-depleting base for the farm in 1937 shall be the total soil-depleting base which was established for the farm under the 1936 Agricultural Conservation Program, subject to necessary acreage adjustments based on land measurements made in connection with the 1936 and 1937 Agricultural Conservation Programs in crop classifications, and further adjustments that will result in a soil-depleting base for the farm which is comparable with soil-depleting bases for other farms in the same community which are similar with respect to size, type of soil, topography, production facilities, type of farming and farming practices.
B. On farms for which no work sheet was executed under the 1936 Agricultural Conservation Program, the soil-depleting base shall be the acreage of all soil-depleting crops seeded for the 1936 harvest subject to the following adjustments:

1. Where, because of weather conditions, the number of acres of soil-depleting crops seeded for harvest in 1936 was greater or less than the acreage of such crops usually seeded on the farm, such number of acres shall be decreased or increased to an acreage which is comparable to the acreage of such crops seeded on such farm under normal conditions in past years.

2. Where the acreage of soil-depleting crops seeded for harvest in 1936 for any farm, adjusted if necessary as herebefore indicated, is materially greater or less than the acreage of soil-depleting crops seeded for harvest in 1936 on farms in the same community which are similar with respect to size, type of soil, topography, production facilities, and farming practices, such adjustment shall be made as will result in a soil-depleting base for such farm which is equitable, as compared with the soil-depleting bases for such other similar farms.

C. A county limit for the farms participating in the program in each county will be established by the Agricultural Adjustment Administration and the aggregate of the soil-depleting bases established in each county shall not exceed the county limit for such county unless a variance therefrom is recommended by the State committee and approved by the Agricultural Adjustment Administration. In establishing county limits, the Agricultural Adjustment Administration shall consider the ratio of all acreage of soil-depleting crops in the county to all cropland in the county, the ratio of the soil-depleting bases established in a county to the acreage of cropland on all farms for which such bases have been established, and any other pertinent information which is available.

Sec. 2. Soil-Conserving Base. The soil-conserving base shall be equal to the total acreage of cropland less the soil-depleting base and the acreage in commercial orchards on the farm on January 1, 1937.

Sec. 3. Establishment of Grazing Capacity. There will be established a grazing capacity for each ranching unit for which an application for determination of grazing capacity is received. Such grazing capacity shall be based upon the report submitted by the range examiner, who, in examining the range and making his report thereon, will take into consideration the following: (a) composition, palatability, and density of growth; (b) climatic fluctuations; (c) distribution and character of watering facilities; (d) topographic and cultural features; (e) classes of livestock; (f) presence or absence of rodents and poisonous plant infestations; and (g) previous use. The average of the individual grazing capacities established for all ranching units in a county shall not exceed the county average grazing capacity limit for such land.
PART VIII. CLASSIFICATION OF LAND USES

Farm land, when devoted to the crops or uses indicated hereinafter, shall be classified as follows, except for such additions or modifications as may be recommended by the State Committee or the Agricultural Adjustment Administration and approved by the Secretary.

Sec. 1. Soil-Depleting Crops. Land devoted to any of the following uses or crops shall be regarded as used for the production of a soil-depleting crop for the year in which such crop would normally be harvested:

a. Small grains including flax, except as indicated under item c, Section 2, and under items d, f, g and h, Section 3, of this Part VIII.

b. Corn (field, sweet, and popcorn)

c. Potatoes

d. Sweet potatoes

e. Sugar beets

f. Root crops grown for feed

g. Hemp

h. Cultivated sunflowers

i. Mustard (commercial)

j. Rape

k. Truck and vegetable crops (except perennial vegetables) and their seeds; melons and strawberries

l. Grain sorghums, sweet sorghums, broom corn, and Sudan grass, harvested for seed, grain, or hay

m. Millets

n. Soybeans, field beans, canning beans, cowpeas, field peas, seed peas, and canning peas, harvested for seed, hay, or pastured, except as indicated under item f, Section 3, of this Part VIII.

o. Flowers and their seeds
p. Kale

q. Annual grasses including Italian rye grass and Bromus Secalinus

r. Cultivated fallow (summer fallow), except as provided in item e of Section 5, of this Part VIII.

Sec. 2. Soil-Conserving Crops. Land devoted to any of the following crops in 1937 shall be regarded as used for the production of a soil-conserving crop, except that any land devoted to a soil-depleting crop in the same year (within the meaning of Section 1 of this Part VIII) shall be regarded as having been used for the production of a soil-depleting crop for such year:

a. The following legumes and perennial grasses, and such other legumes and grasses as may be approved by the Director of the Western Division, when seeded without a nurse crop or when seeded with a nurse crop if such crop is not harvested for grain or hay:

   (1) Legumes: Alfalfa; sweet, red, alsike, white, strawberry, Ladino, crimson and sour clovers; vetch, Austrian winter peas; sericea; and lespedeza.

   (2) Grasses: Bluegrass, orchard, brome, wheat grasses, rye grasses, timothy, redtop, bent grasses, fescues, tall oat grass, Reed's canary grass, and velvet grass.

b. Green manure crops, including annual legumes, rye, and mixtures of annual legumes and small grains when turned under in 1937, after attaining at least two months' growth, when not followed by summer fallow.

c. Forest trees planted on cropland since January 1, 1934.

Sec. 3. Neutral Uses. Land devoted to the following uses or crops shall be regarded as devoted to neutral uses:

a. Orchards, vineyards, nut trees, bush fruits, hops, and perennial vegetables, regardless of the use of the land between the rows.

b. Idle cropland.

c. Bulbs and nursery stock
d. Cropland planted in 1937 to soil-conserving crops, or mixtures thereof, with or without nurse crops when such nurse crops are not harvested for grain or hay, if, when performance is checked, there is not a good stand of such soil-conserving crops due to uncontrollable natural causes.

e. Any acreage on which perennial or biennial legumes or perennial grasses have been seeded following summer fallow when no soil-depleting crop has been seeded on such land for harvest in 1937.

f. Any acreage devoted in 1937 to the production of emergency forage crops consisting of millets, Sudan grass, rape, oats, barley, and annual legumes or mixtures of such crops which the county committee determines is equivalent to the acreage of soil-conserving crops on the farm which was winter-killed or destroyed by drought in the period beginning July 1, 1936; provided, such use of land shall have been approved by the County Committee prior to May 1, 1937.

g. Winter wheat or rye seeded in the spring for cover crop purposes.

h. Winter seeded peas and vetch when seeded with small grains as a support crop.

PART IX. APPEALS

Sec. 1. Appeals from Determination of County Committee. Any person who has reason to believe that any base, productivity index, grazing capacity, or any division of payment, determined for his farm or ranching unit by the county committee, is not equitable, may request such committee to reconsider its determination. If no agreement is reached between such person and such committee, an appeal may be taken in accordance with such rules as may be prescribed by the Secretary.

IN TESTIMONY WHEREOF, H. A. Wallace, Secretary of Agriculture, has hereunto set his hand and caused the official seal of the Department of Agriculture to be affixed in the City of Washington, District of Columbia, this 14th day of January, 1937.

[SEAL]

Secretary of Agriculture
With the launching of the 1937 Agricultural Conservation Program, farmers of the United States are commencing the second year of operation of the Agricultural Conservation Program provided for in the Soil Conservation and Domestic Allotment Act of 1936.

The 1937 Program, like the 1936 Program, emphasizes the conservation phase of agricultural improvement. For 1937, refinements have been made in the 1936 program, on the basis of recommendations made by the farmers at local and county meetings held throughout the country last fall. Such changes as have been made for the 1937 program place greater emphasis on the adoption of soil-building practices on the farms of participating producers.

The Agricultural Adjustment Administration entertains a sincere appreciation for the splendid cooperation shown in the past programs by community and county committeemen, by extension workers, and by many leaders of the farm organizations. I have the greatest confidence that this fine spirit and whole-hearted effort will make it possible to get the 1937 program under way in time to benefit the greatest possible number of farmers.

The extent to which the program will aid farmers in each State and county and thus accomplish its objectives, will, in a large measure, depend upon the thoroughness with which extension workers, community and county committeemen, and farm-organization leaders help their neighbors to understand the underlying principles as well as the provisions applying to individual farms.

H. R. TOLLEY, Administrator,
Agricultural Adjustment Administration.