OPTIONAL FORM NO. 10
5010-104

UNITED STATES GOVERNMENT **FOREST SERVICE, REGION 1, MISSOULA, MONTANA**

Memorandum

2220

TO : Director, PSW Station

DATE: April 3, 1962

FROM : Boyd L. Rasmussen, Regional Forester, By

SUBJECT: Management

Our field season is particularly full this year so we are unable to schedule Mr. A. L. Hormay to give him the desired participation with Regional Office personnel.

The Deerlodge and Helena National Forests are considering rest-rotation systems on the Elkhorn and Crow Creek C&H allotments. Should Hormay have time after scheduling other Regions, the forests will appreciate close review, about a week each, of these allotments.

cc: W.O. 2200
Dlg.
Hel.

A. L. Hormay

April 16, 1962

Range Forage Production Methods Study
(Coop. Region 5 - PSW F&RES)

Code and Instructions for Recording Field Information

Item — **Description**

1. **Range x**
   Code no.
   1 Name of range and location.

2. **Vegetation Type x**
   Code no.
   1 Name of type.

3. **Site x**
   Code no.
   1 Excellent
   2 Good
   3 Poor

4. **Transect Number x**
   Number consecutively within each site beginning with 1. There are two transects in each site, so transect number will be either 1 or 2.

Subplot Data

5. **Plot Number xxx**
   Number consecutively along each transect beginning with 001.

6. **Subplot Number x**
   Number consecutively beginning with 1 within each plot. The number of subplots in a plot will be either 4 or 9 and numbered as follows:

1	2
3	4

1	2	3
4	5	6
7	8	9

The area and length of one side (assuming a square) of multiples of the plot are:

	Area (sq. inches)	Length of side Inches	mm.
1	0.4418	0.664	16.6
2	0.8836		
3	1.3254		
4	1.7672	1.328	33.2
6	2.6508	[illegible]	[illegible]
9	3.9762	1.992	49.8

Item	Description

7. Species or Cover xx

Species Code

00	No species.
01 to 29	Specific species.
30	All species not specified from 01 to 29.

Enter code number for each species or group on subplot.

Cover Code

00	No cover item.
41	Litter
42	Soil
43	Rock
44	Erosion pavement
45	Wood
46	Moss and lichens.

Enter code number for each kind of cover on subplot.

8. Stems or Cover, Number xx

Record number of stems of each species on subplot starting with 01. Also record the presence of cover item by entering 01 opposite each item.

9. Stems or Cover, portion of subplot % xx

Enter estimate to nearest 10 percent of proportion of subplot covered by each species and each cover item.

Code

01 = 10 percent.
:
:
10 = 100 percent.

10. Dominant Species and Cover

Code

0	Not dominant
1	Dominant

Enter 1 opposite dominant species and 0 opposite all other species. If no vegetation on subplot enter 1 opposite the cover item that is dominant on the subplot.

11. Height of Individual Stems

Record height of each stem of each species to the nearest one-tenth inch.

Item	Description

Plot Data by Methods

12. **Hit Methods xx**

Only two entries will be made under this heading for each plot. The first space below the heading will carry vegetation information and the second space cover information. If there is vegetation on the plot, enter the code number of the dominant species in the first space and 00 in the second space. If there is no vegetation on the plot enter 00 in the first space and the code number of the dominant cover item in the second space.

13. **Estimation Method, Species and Cover**

Enter code numbers for all plant species and cover items on plot.

14. **Estimation Method, portion of plot %**

Enter estimate of proportion of plot covered by each species of plant and cover item. Estimate to nearest 10 percent and enter values from 1 to 10 conforming to the code set up in item 9.

15. **Estimation Method, Height**

Enter average measured height of each species and 00 opposite each soil cover item.

1630
April 17, 1962

Dear Sammy:

I have prepared the attached key for all 90 species in your list mainly to see if there were any serious obstacles to working out ideas I had in mind. I found none. I didn't have the benefit of plant material so the key has some weaknesses but a botanist could prepare a satisfactory key along these lines, I'm sure.

The key was designed for use by laymen as well as people with botanical training. Use of technical terms is unavoidable, however, so adequate descriptions and illustrations of plant terms and parts are essential. Some of this information should be in the introduction to the key, as well as in a glossary.

In the first breakdown, plants are divided into five groups as follows:

1. Trees
2. Shrubs
3. Shrublike plants or vines.
4. Spiny plants.
5. Strong scented plants.

Species exhibiting different growth forms are found in two or more of the groups. Prunus subcordata, for example, is included in the Tree, Shrub, and Spiny Plant groups. Species not easily classified into a group also occur in two or more groups. Ephedra, for example, is in both the Shrub and Shrublike groups. There is some duplication, therefore, but with five short keys instead of one long one it is easier to "run down" a species. Probably there is more duplication among groups in the present key than necessary.

The key is based on vegetative characters, primarily the leaf, and the site and range of the species. The principal leaf characteristics used are shape, segmentation, marginal indentations, petiole length, hairs, odor, and position and grouping on the stem. These characters can be observed almost any time of year. To broaden the usefulness of the key and make it more positive at certain times of the year, flower color and fruit descriptions are included in the terminal portions of the key leading to the species. However, throughout, the most striking and obvious features of the species are described first in the key wherever possible.

One big difficulty, perhaps the greatest, encountered in the use of botanical keys is visualizing the picture conveyed by the terms used in the key. I believe it would be very helpful to include line drawings of key characters directly in the key or on plates opposite each page of key text. In the present key, for example, a simple line drawing of a leaf, in plan view, and a fruit or fruit cluster of each

species would suffice to cover over 90 percent of the key characters. Drawings of flowers, plant growth form, and other features could be covered in the species descriptions section.

I've included a compilation of line drawings, from Jepson's manual, on a plate, in the key for the Tree group to illustrate the point. The arrangement of the drawings on the plate and the scale of many of them are by no means ideal, but I'm sure you get the idea. Figures 1, 7, 8, 9, 14, 17, 18, and 19 are examples of good leaf drawings because they bring out essential details. Some could be on a larger scale. Figures 2, 8, 11, and 16 show combination leaf-fruit or leaf-fruit cluster drawings. One leaf and one fruit or fruit cluster per drawing would be enough.

All the ideas I've expressed above are illustrated to some degree in the key for the Tree group. The keys for the other four groups are somewhat skeletonized. I hope these thoughts will be of some value to you.

A. L. HORMAY

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
P. O. Box 429
Lakeview, Oregon

April 17, 1962

Mr. A. L. Hormay
Stead Building
1960 Addison Street
P. O. Box 245
Berkeley, California

Dear Gus:

We are sold on the principals of the rest-rotation system and wish to establish your system on an area we are proposing as a demonstration allotment.

Under separate cover we are sending a vegetative type map of the Little Juniper Unit on which we have designated range condition (Deming Method). This allotment contains some of the best perennial bunch grass (blue bunch wheat, Idaho fescue, squirrel tail, needlegrass) range remaining in our district.

The area designated as season long cattle range at the north end of the Unit will not be included in our plan. We hope to eliminate livestock grazing from the sandy alkaline low country along the western and southwestern sides of the unit. The balance is available for use at any appropriate season to fit into a rest rotation plan. Sheep are no longer grazed in this unit.

Elevation ranges from 4,500' in the large Dry Valley, in poor range condition along the east, to 5,200' in the west central portion.

In the sandy alkaline area along the west and southwest in the Alkali-North Alkali-Buckaroo Lakes basin the elevation rises gradually from 4,200'.

We propose to construct sufficient fences to divide the available area into five large native pastures plus two pastures, one small and one large, seeded to crested wheatgrass. Adequate permanent stock water will also be established.

We believe this area has great potential for natural improvement and that you would be interested in taking a look at it and our plans for it on the ground.

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Copy to De Mio

If you can arrange it, I would certainly appreciate your visiting us sometime during the second week in May or the first two weeks in June. Dates of seed ripening and other details you will need will be available during your visit.

Please let us know if this would be possible.

Sincerely yours,

George D. Lea

George D. Lea
District Manager

Separate Cover:
1 copy - Vegetative type Map,
Little Juniper Unit

1630
April 19, 1962

Dr. A. W. Sampson
School of Forestry
University of California
Berkeley, California

Dear Sammy:

In response to your letter of March 19, Gus Hormay has outlined some ideas on a plant key which you may wish to consider in your browse bulletin. We are looking forward to early release of this useful publication.

Sincerely yours,

KEITH ARNOLD, Director

by E. A. Woolfolk

Attach.
ALHormay:dn

4210
April 20, 1962

Mr. George D. Lea
Bureau of Land Management
P. O. Box 429
Lakeview, Oregon

Dear George:

In reply to your letter of April 17, I can meet with you on June 4 and 5. I will drive up from Susanville the morning of the 4th and be at Lakeview around noon.

Enclosed are three sets of forms for allotment information. Please fill out a couple of sets as completely as you can by the time I get there and hold them. We'll need the information to size up the range. If you do not have specific information, give your best estimate or opinion. I would like to have one set of forms for my files.

Unless I hear from you, I'll follow the above plan.

Sincerely,

A. L. Hormay

A. L. HORMAY
Range Conservationist

Attach.
ALHormay:dn
CC: DeNio

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Burns District Office
P. O. Box 713, Burns, Oregon

April 27, 1962

Mr. H. L. Hormay
c/o U. S. Forest Service
Reaearch Center
Susanville, California

Dear Mr. Hormay:

It is understood that you plan on visiting the Bureau of Land Management Lakeview district sometime this spring or early summer. If possible, and convenient to you, we would appreciate your also looking over the Ruby Springs - Moon Hill Demonstration allotment in the Burns district. If you could not visit Burns following your trip to Lakeview, possibl you might be able to return at a later date.

We would look forward to any comments and suggestions you might have regarding our rest-rotation demonstration allotment, and if you can plan on coming to Burns please advise as to the expected date.

Sincerely yours,

J. Kent Giles

J. Kent Giles
District Manager

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