

May 29, 1990

*Discussed with Earlard Mason
2 PM June 4, 1990 in his office
Berkeley. Help by station
contingent on value of studies to R.O.*

Ronald E. Stewart, Director
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1960 Addison Street
Berkeley, CA 94704

Dear Ron,

As you probably know I worked at the station in the range division several years. I carried on studies on national forest range problems in the region. I had not completed several of these at the time I left the station to go with the Bureau of Land Management in 1966. I now plan to complete six of the more important ones and publish the results. I would like the help of the Station, Regional Office and Lassen forest to do this. I plan to gather all concluding information this summer.

I started at the Station in 1931 the year the range division was established. M. W. Talbot was appointed division chief and Fred G. Renner and I assistants. Appropriations were obtained for developing proper management methods for:

1. Annual type (foothill) ranges.
2. Perennial type (mountain) ranges.

In 1933 Fred Renner was placed in charge of the annual type project and I the perennial type.

Perennial type ranges in the state lie mainly in the national forests. I contacted the regional office for information on range problems on the forests and was directed to the problems on eastside ranges of the principal grazing forests, the Shasta, Modoc, Lassen, Plumas and Tahoe. These ranges lie in the northeast corner of the state, east of a line from Lake Tahoe through Mt. Lassen and Mt. Shasta to the Oregon border. I made an analysis of the problems with the help of the regional office and forests to direct my research.

1942 An analysis of national forest range problems in northeastern California Region 5 and CF&RES personnel. 49 pp. Mimeographed. Illus.

Some comments by the forests on problems follow.

SOIL EROSION

Lassen "Eroding stringer meadows are requiring attention."

Modoc "It is doubtful if the present density of shrubs and herbaceous vegetation is more than one-third the original stand. This leaves an enormous amount of bare soil exposed and erosion is very serious."

- Plumas "Should study erosion on timbered areas after logging, also sheet erosion on sagebrush and bitterbrush types." (First priority problem.)
- Shasta "We have a bad situation on the Black Rock Range and also on Butte Creek. (This problem was rated of first priority for study.)"
- Tahoe "Erosion is seriously affecting our ranges. This problem should take precedence over other range studies."

UTILIZATION

- Modoc "In spite of the fact the Forest Service has been administering ranges for almost 35 years and range research problems have been under investigating for 30, we still do not know the degree of utilization which can be permitted and which will maintain or improve an individual range."
- Tahoe "All the smaller wet types are going down hill, either drying up or becoming lodgepole thickets or willow types. This is true especially of the ranges along the crest of the mountains above 6000 feet. On some areas changes of numbers and season do not secure needed betterment. Closing is the only remedy."

GRAZING SEASON

All the forests expressed need for a sound basis for opening and closing the grazing season. Specific comment was obtained only from the Lassen.

"This forest would like to know the best season of use of cut-over pine timer types on range allotments which include mainly timber and meadow types."

LIVESTOCK DISTRIBUTION

- Shasta "We need more definite information to corroborate our statements on salting away from water. While this is primarily a job to be done in connection with Administration, we believe that experimental results would be more acceptable."
- Tahoe "Much has been said in a spirit of wishful thinking about salting and riding to solve distribution problems. A real study of this subject should yield interesting information on rough ranges. A valuable study badly needed on all ranges."

LOGGING - GRAZING CAPACITY

The forests expressed need for information on changes in vegetation and grazing capacity following logging to gage adjustments in livestock numbers.

Plumas "Include a study of private logging practices, as well as government methods, in relation to range management and forage capacity."

Shasta "On Long-Bell and McCloud River Lumber Company cut-over lands more information is needed on the type of forage which comes in immediately after cutting."

LIVESTOCK - WILDLIFE

Lassen "The Lassen has no particular deer problem on the eastside at the present time, however it might come to pass as it has on the Modoc. We feel that studies in connection with wildlife are well warranted."

Modoc "Over browsing by deer is present on three-fourths of the forest. Use is so heavy that we do not know what percentage of the forage available should be allotted to domestic livestock."

Plumas "Deer concentrations are becoming serious in areas adjacent to the Plumas forest and near Doyle, California. Conflict between mule deer and sheep in Willow Creek allotment in Dixie Game Refuge is becoming pronounced."

Shasta "We have a serious wildlife problem in the area east of Sharp Mountain, the vicinity of McGavin Peak in the Shovel Creek drainage and on the area in the vicinity of Fall River Valley."

Tahoe "Competition is pretty important at this time with increased complaint by stockmen that ranges needed by cattle are used by deer, etc. Grazing on some areas, such as east of Truckee, indicates that there is competition for forage between sheep and deer."

BITTERBRUSH

Shasta "The effective use of bitterbrush is a problem of high priority on our ranges. We do not know much about it. Some stockmen are interested in knowing just what we are doing to our bitterbrush ranges by protecting them."

Modoc "Bitterbrush is worthy of study. It is the most important forage species on the Modoc. On thousands of acres it has been killed out. An exacting life history study is needed to give us clues to proper management."

Tahoe "We know that bitterbrush is always killed out by fire. Because of lack of seedlings, the species is rapidly disappearing from all heavily used ranges. Bitterbrush is such a valuable shrub. We should try to find out what is necessary to restock it on the range."

I set up studies on these problems on the Lassen forest on three main areas, the Burgess Spring Experimental Range, which I established in 1935, the Blacks Mountain Experimental Forest and the Harvey Valley cattle allotment.

Following is a list of my publications from these studies.

- 1940 Effect of logging on forage. *Chronica Botanica* 6(1): 6-7
- 1940 Automatic recording of salting and watering habits of cattle. J. R. Bentley. *California Forest and Range Expt. Sta.* 14 pp (I planned this study and ran it the first year)
- 1943 Bitterbrush in California. *Calif. Forest and Range Expt. Sta., Research Note No. 34.* 13 pp. Multilithed. Illus.
- 1943 A method of estimating grazing use of bitterbrush. *Calif. Forest and Range Expt. Sta., Research Note No. 35.* 4 pp. Multilithed. Illus.
- 1943 Observations on species composition in northeastern California meadows as influenced by moisture supply. *Calif. Forest and Range Expt. Sta.* 6 pp. Mimeographed. Illus.
- 1945 First season records of cattle weights from a pine-timber range and a mountain meadow range. M. W. Talbot and A. L. Hormay. *Calif. Forest and Range Expt. Sta., Research Note No. 44.* 9 pp. Multilithed. Illus. (I planned and conducted this study)
- 1947 Forest grazing in California. *Proceedings Society of American Foresters' Meeting, 1947.*
- 1949 Getting better records of vegetation changes with the line interception method. *Journal of Range Management* 2(2): 67-69.
- 1956 How livestock grazing habits and growth requirements of range plants determine sound grazing management. *Journal of Range Management* 9(4): 161-164.
- 1958 Rest-Rotation Grazing...a new management system for perennial bunchgrass ranges. A. L. Hormay and A. B. Evanko. *Calif. Forest and Range Expt. Sta., Miscellaneous Paper No. 27.* December. 11 pp. Illus.

- 1961 Rest-Rotation Grazing...a new management system for perennial bunchgrass ranges. A. L. Hormay and M. W. Talbot. U. S. Dept. Agric. Forest Service. Production Research Report No. 51. October. 43 pp. Illus.
- 1962 Experiences with 2,4-D spraying on the Lassen National Forest. A. L. Hormay, F. J. Alberico and P. B. Lord. Journal of Range Management 15(6):325328. November. Illus.
- 1970 Principles of rest-rotation grazing and multiple-use land management. A. L. Hormay. U. S. Dept. Agric. Forest Service; Training text-4 (2200). November. 26 p. Illus.

The six studies I plan to complete along with assistance I need are described in the following:

1. Forty years of rest-rotation grazing on the Harvey Valley cattle allotment, 1951-1990
 Lassen- 3 technical 1 month; collect data 300 plots.
 Station- Data process, manuscript prep.
2. Effect of moving cattle between pastures on weight gains in rotation grazing. Data collected.
 Station- Data process, manuscript prep
3. Vegetation and grazing capacity changes during and following logging, pine type, northeastern California. BSER Pasture 2 1936-1990.
 Lassen- 2 technical 1 week; locate 300 plots
 Station- 3 technical 6 weeks; collect data 300 plots.
 Data process, manuscript prep.
4. Vegetation and grazing capacity changes following logging, pine type, northeastern California. BSER pasture 1 1936-1990.
 Lassen- 2 technical 2 weeks; locate 829 plots.
 Station- 3 technical 8 weeks; collect data 829 plots.
 Data process, manuscript prep.
5. Establishment and growth of bitterbrush reproduction on a pine-sagebrush site. Blacks Mountain Experimental Forest 1940-1990.
 Lassen- 4-6 technical 3 weeks; collect data 2-3000 plants.
 Station- Data process, manuscript prep.
6. Dormancy, germination and longevity of bitterbrush seed. Laboratory study. Berkeley 1940-1990. Data collected.
 Station- Data process, manuscript prep.

The most important result from my research is rest-rotation grazing, the biggest advance in range management in 75 years. With this method of grazing the range can be improved and maintained indefinitely under full use.

I came up with the idea of rest-rotation grazing in 1949 and immediately took steps to check it out on a practical scale. I chose the Harvey Valley cattle allotment for the purpose. The Region Office and Lassen forest were amenable to having the allotment used this way.

The Station, Regional Office and Lassen forest agreed to carry out the project cooperatively. The station, I, would prescribe the management of the allotment following rest-rotation grazing principles and the Lassen would carry it out.

The station agreed to:

1. Develop the simplest form of rest-rotation grazing for the allotment, one with the fewest pastures.
2. Appraise the effectiveness of artificial seeding and spraying in increasing vegetation.
3. Develop mechanical methods of controlling gully erosion.
4. Measure the results of rest-rotation grazing and cultural range improvement practices.

The Lassen agreed to:

1. Provide the cattle.
2. Install management facilities- fences, water developments, etc.
3. Manage grazing of the pastures.
4. Carry out artificial seeding, spraying and other cultural work.

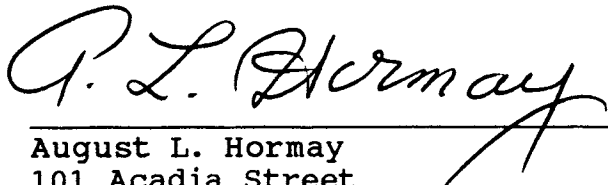
A simple system giving optimum results, a 3-pasture system, was developed. It was applied in 1976. A 5-pasture system was used at the beginning of the program. It gave good but not best results. It was more costly to set up and operate.

Important information on cultural practices was obtained.

The Lassen forest followed my direction closely in managing the allotment up to the time supervisor Jim Berlin left the forest and district ranger Fred Alberico died about 1977. Thereafter cooperation has been lax. I don't believe personnel on the forest are aware of the agreement for managing the allotment.

Recently the forest took down fences around some of the enclosure plots in Harvey Valley, apparently not appreciating their importance. They should be rebuilt as soon as possible. All plots in Harvey Valley are marked permanently with steel posts and stakes. The allotment should be maintained as a demonstration and research area.

I would like to discuss the subject matter in this letter with you and the regional office at your earliest convenience.



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