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THE HARVEY VALLEY RANGE PROJECT

Introduction

The Harvey Valley project was set up to check and demonstrate rest-rotation grazing and cultural range practices like artificial re-seeding, chemical weed and brush control and drainage improvement on a practical scale. This program was undertaken cooperatively by the Lassen National Forest, Regional Office and the Pacific Southwest Forest and Range Experiment Station in 1951. National Forest administration agreed to install the necessary management facilities and manage the allotment as planned and prescribed by the Experiment Station. The Experiment Station on the other hand agreed to measure the results.

Experiment Station Responsibility

Plans prepared by the Station for evaluating results at Harvey Valley called for observations and measurements of six main factors as follows:

- ✓ 1. Range condition and trend by range condition classes within vegetation soil types.
2. Forage production by species and vegetation types.
3. Forage utilization by species and vegetation types.
4. Establishment of reproduction of important range plants.
5. Plant phenology (and weather taken at Blacks Mountain Branch).
6. Livestock weights.

Concurrently with this "measurement" program the Station planned to carry on studies that would provide more accurate and faster measurement techniques, additional and better management tools, and improvement in the rest-rotation grazing system as applied at the beginning of the test period. Now that rest-rotation grazing is being extended onto other ranges there is need for more simple techniques and tools than those used at Harvey Valley for use by ranchers and range administrators. Most of these will evolve directly from the studies carried out at Harvey Valley with little additional effort. It is estimated that about 80 percent of the time of research personnel will be used on

the "measurement" program and about 20 percent on supplemental studies. It should be reemphasized that these studies are all direct at improving management at Harvey Valley, speeding up evaluation of results and simplifying extension of rest-rotation grazing on other ranges.

Some of the studies needed to facilitate the work at Harvey Valley include:

- ✓ 1. Range utilization standards.
- ✓ 2. Techniques for measuring forage production in vegetation soil types.
- ✓ 3. Photograph procedure for measuring vegetation density and composition.
- ✓ 4. Determination of number of cattle needed to provide an acceptable measure of average weights and weight gains by classes of animals.
5. Development of standard procedures for collecting data for machine processing.

Studies that would lead to improvement of the 5-unit form of rest-rotation grazing now applied at Harvey Valley and practical guides and tools for range managers include:

1. Effect of grazing on plant vigor and seed production.
2. Effect of grazing on regrowth of meadow vegetation.
3. Predicting seasonal forage production prior to the start of the grazing season.
4. Predicting range readiness prior to the start of the grazing season.
- ✓ 5. Appraising grazing capacity on basis of (a) vegetation, (b) actual grazing use.
6. Controlling weed species like *Lomatium leptocarpum* (Biscuit root) spike rush and baltic rush. *Coop.*
7. Finding or developing rhizomatous forage species for reseeding deteriorated sites. *Coop* with other groups.

Status of Field Work and Compilation of Data Collected on "Measurement" Program as of April 1960.

1. Range condition and trend
Forest measurements completed on 102 of 107 established transects.
No remeasurements made yet. One hundred additional transects needed to complete sampling system.
Completion: field work 25 percent
 compilation of data collected 90 percent
2. Forage production by species and vegetation types. Only fragmentary information obtained.
Completion: field work 15 percent
 compilation 80 percent
3. Forage utilization, substandard work
Completion: field work 100 percent
 compilation 80 percent
4. Establishment of reproduction
Completion: field work 5 percent
 compilation *0 percent*
5. Plant phenology, substandard work
Completion: field work 50 percent
 compilation 0 percent
6. Livestock weights, substandard
Completion: field work 75 percent
 compilation 100 percent

The Stations part of the Harvey Valley program has lagged sadly. The most pressing jobs now are the following:

1. Remeasure the 102 range condition and trend transects.
2. Establish and measure the 100 additional condition and trend transects needed to complete the transect system.
3. Measure plots for seedling establishment and seed production.
4. Measure phenology.
5. Measure range utilization.
6. Measure livestock weights.
7. Measure forage production on the range.

8. Establish 5 additional livestock exclosures for check purposes.

All of these jobs except 2 and 8 can be handled this year starting July 1 by 2 technicians and a working supervisor. The other jobs and studies will have to be picked up in the future.

In addition to the work on Harvey Valley there is need to remeasure 12 range condition and trend transects and the utilization on them on the Poison Lake Allotment--the check on Harvey Valley.