

A. J.
Range Improvements.
Erosion Control:

Milford, Cal.
Jan 23-1938.

Dear Lloyd:

Just received your memorandum in regards "Erosion" Have been to many and many points.

I have made several excursions around lately on top. find that majority of deer are still on summer range in upper "Last Chance" flats and south slopes are bare has been fairly warm in these locations, more green grass on these south slopes than any place snow mainly in patches and on north slopes, only about 10" thick at head willow creek ranging from 8" up. to drifts in canyon very little at station as noted before majority deer have not migrated and still see some "bucks" left. & on Jan 12. I noted 3 young fawns in a band of 25 deer near Exp. plot did not look over one month old.

(2)
I left in December the day started
to rain but about 8 1/2" inches fell at
Lanfmon with more on top causing
roads to wash. Doyle, Milford, and Janesville
grades washed so as to be impassable
with some work possible to get up.
Doyle grade.

I was agreeably surprised when
inspected some of erosion work. Hall
range. as a whole held very satisfactory
water going over tops and was not able
to get much data on any deposits.

Work at Exp. flat also held up very
well water likewise going over top only
going around two lower dams high
water on flat reaching near seed
plots. so far have not found any
dams or plugs that went out. and
as far as have been able to see
would say they held OK and
with some minor maintenance they
would be functioning in good shape

(3)

Have not covered balance but when
do will let you know results.

New erosion started in various location
this being noted in several places where
ground bare and water rushed across
same. High water marks along "Last
Chance" exceeding any past marks
that we have any information on
some scouring but nothing serious as
far as went near Adenour fields.

We went down in Dec. run in flocks
and had intended on paying you a
visit but when went back from
Treado fog in your country so thick
we did not attempt to go to city and
failed to get over. Not getting to see
bridge or any of that section. but
hope to be able to pay you folks
a visit when can see the find way
around. which hope to in spring if
fry season does not start to early.
I notice you are going to have a
fisherman's sale pretty soon as your son
is growing also daughter is getting to

Be quite a girl. With best regards
to you all.

Very Sincerely

Ben Beard.

Dist. Ranger.

RR
El Dorado

Berkeley, California
March 2, 1938

FOREST SUPERVISOR:

Dear Ed:

Yesterday Bob Deering asked me if I could prepare a short article for you to use in connection with Conservation Week. In a moment of weakness, I consented.

The attached is the result. Hope you can use it.

LWS
May 1

How do you like this classic

LWS

I think a concluding paragraph to leave emphasis just where you wanted it would have improved the talk. In the main I think it's good.

COPY

LWS

T.S.W.

Soil Conservation on Range Lands
by
Lloyd W. Swift

Generally, range lands in El Dorado County are in a satisfactory condition. This is particularly true of the natural grassland ranges in the western portion of the county, an area where the stock are largely removed to the forest ranges during the summer months.

In the intermediate belt between the natural grasslands and the commercial timber areas there are some examples of range abuse. In the main these areas are associated with the yearlong grazing of cleared lands - lands that undoubtedly at one time supported yellow pine timber. Where the soil is red, the excessive cropping of the forage is strikingly evident in the summer and fall by the absence of plant materials to mask the natural soil color. Obviously when this condition prevails, the soil surface is unduly exposed and the valuable top soil subject to removal by wind and rain. Often, the reduced capacities make further grazing use uneconomic and the land is allowed to revert to brush and timber.

Within the El Dorado National Forest there are examples of range land erosion. Perhaps the most striking, and certainly the most important to the livestock people is the gradual destruction of some of the meadow areas. The usual thing is for a gulley to gradually extend through the fine soil until in the final stages a deep main channel with numerous side feeders results. Of course, the gulleys act as effective drainage ditches and draw off the water needed for maintenance of the natural meadow vegetation. Deprived of moisture, the meadow plants die out and with them goes the carrying capacity and often the profits of the range enterprise.

On many forest ranges meadows provide a small part of the capacity and in such cases probably are not an important factor. On the higher ranges, however, the meadows generally are a vital part of the range, in fact might be considered the key or most important area. They have high capacity and provide a combination of factors such as readily accessible feed and water supply that enables stock to graze with a minimum of effort, as compared with most other mountain ranges. In the final analysis, then, satisfactory meadows should mean good management and income to the operators.

Although considerable of the meadow acreage is in government ownership, perhaps the largest and the best are privately owned. Originally most of the meadows were patented for use in connection with summer dairying, but for the last 20 years or longer have been used by range stock. In many cases there has been a consolidation of ownership, particularly where the meadow area was of sufficient size to have several adjacent owners. Since these private meadow range lands tie into and are used in connection with the other range lands, the Forest Service is as interested in maintaining their carrying capacity as the owners. Therefore, when possible, local forest officers will be glad to assist the owners in any way they can.

Before discussing meadow improvement methods, it might be well to consider some of the conditions common to a meadow in satisfactory or normal condition. Naturally, such things as gulleys and large patches or areas of barren, trampled soil, would not be present. Instead there should be a complete plant cover - in the wet and moist portions the roots intermingled to form a sod mat not easily broken even with a shovel. The large streams would be in well defined channels, but small streams would have poorly defined courses. There might be a series of pot holes separated

by sodded areas or the water could be spread out and creeping thru the vegetation. Where holes or a channel did exist, the grass and other plants would cover the banks and hang to the water's edge. Throw in a sprinkling of varicolored flowers, patches of willows, and some fat trout under the sodded banks and the picture is altogether delightful but none the less real.

How is a meadow to be maintained in a productive condition or returned to it if depleted? A number of things can be done when unsatisfactory conditions are present, but in either case proper stocking is the first and foremost. Under no conditions should stocking be such that the natural forage plants are killed out and the soil surface further subjected to erosive forces. In fact, the aim should be to practice conservative use, even to the extent of what might seem a waste of forage. In the long run this practice will give the best results on any meadow that is at all subject to erosion.

Where a meadow is in an unsatisfactory condition a number of steps might be taken depending on the conditions. If gullies are present, however, the first action should be to check their advance. This can be done by placing erosion resistant structures in the head. One approach is to remove the overhanging lip and slope the gully head to at least 45 degrees. Then place a mattress of pine needles or straw and cover this completely with large rocks, so that the water must trickle down over the rocks to the gully bottom.

Below the gully plug and at intervals in the channel, erosion dams should be built to raise the watertable and collect silt. These structures, like the gully plug, must be carefully placed - not just a tree log or stones thrown in a haphazard manner. Dams made of rock are

preferable, but various materials depending on their availability can be used. There are points to remember, tho.

Needles or straw or gravel if placed under and thru the structure will help bind it and check the water and silt. The ends of the dam should be high enough to prevent the water going around and the lower side should extend out as an apron to break the fall. A fairly effective dam can be constructed from green saplings or limbs closely laid with butts down stream and the whole held down by a top layer of rocks. In any event annual maintenance must be given the structures regardless of the materials used.

In some cases marked improvement of the eroded meadows might be accomplished by raising the watertable by means of ^a watertight dam or dams at strategic points in the gullies. An example of this, but build^d for recreational purposes, is the dam at the lower end of the meadow at the Sacramento Municipal Camp. Here the dam raised the water line so that abundant moisture was again available to the meadow vegetation.

Another, and well known method of meadow improvement, is the diversion of the stream flow by ditching. Often the water can be used to create new meadow areas where suitable land is available. In other cases, however, it serves to thicken the drier borders of the meadow and hence add to the carrying capacity. Examples of such wise use of water are common, but no doubt the practice should be more general.

United States Department of Agriculture
Bureau of Biological Survey

Wildlife Research and Management Leaflet BS-107

Washington, D. C.

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March 1938

PLANNING FOR WILDLIFE MANAGEMENT--AN OUTLINE

Prepared in the Section of Wildlife Surveys
Division of Wildlife Research

Contents

	Page		Page
Introduction.	1	Management objectives and their	
Survey of resources	2	accomplishment	2
What is wildlife management?	2	General objectives	2
What is the status of the		Specific objectives	4
present resources?	2	Supplemental information	5

Introduction

Wildlife specialists, county extension agents, and officials connected with State conservation departments are frequently asked to assist in outlining plans for developing wildlife habitats in connection with land-use problems. Private landowners are showing an increasing interest in improving their properties for wildlife, not only because of the recreational pleasure and enjoyment they and their friends gain from association with wild animals, but also through recognition of the esthetic and economic wealth that the presence of wildlife contributes to the community. While many Federal and State wildlife-restoration projects are under way to rehabilitate desirable game and fur species, through the provision of refuges, establishment of management areas, and improvement of environmental conditions, a great part of our wildlife population is dependent for its existence upon the action of private individuals. In response to the many requests for improvement plans, an outline for planning wildlife management has been prepared and is here presented. As it is impracticable to set forth specific management plans, however, without a detailed technical study of areas under consideration, this leaflet suggests topics that ought to be considered in developing such plans. Before attempting to establish a game-management project it is essential to appraise both existing and potential conditions and to visualize the possibilities on the basis of the fundamental points here presented for consideration.

Survey of Resources

I. What is wildlife management?

Wildlife management is the conscious and intelligent manipulation of habitat, providing for or improving the production of the various species, and controlling abundance and utilization to aid in attaining desired results.

II. What is the status of the present resources?

A survey of conditions on each unit or area is essential to develop the following basic facts:

A. Condition of existing habitat.

1. Food resources.
2. Vegetative cover and other shelter.
3. Topography.
4. Soil and water.
5. Climatic conditions.

B. Present wildlife population (examples).

1. Fur animals--red fox, mink, marten, muskrat, beaver, raccoon, skunk, opossum, otter, weasel, badger.
2. Upland and small game--pheasant, grouse, partridge, quail, rabbit, squirrel.
3. Big game--deer, elk, bear, antelope.
4. Predators--coyote, wolf, bobcat, gray fox.
5. Migratory game birds--duck, goose, snipe, woodcock, rail, mourning dove, band-tailed pigeon.
6. Other wildlife--insectivorous and seed-eating nongame species, rodents, hawks, owls, snakes.
7. Fishes--trout, bass, crappie, perch, pike, pickerel, catfish.

C. Limiting factors.

1. Present land use.
2. Desirable utilization of wildlife species.
3. Community and individual interest and attitude.
4. Other limiting factors--prevalent parasites, diseases, predators, poaching.

Management Objectives and Their Accomplishment

I. What are the general objectives?

A. To formulate and correlate plans for better land utilization.

1. By an initial study of the unit or area to determine where improvements would be desirable.

2. Through supervision and advice from agricultural colleges, county extension agents, and wildlife specialists.
3. By consulting bulletins on wildlife, forestry, and agriculture.

B. To insure permanence of basic natural resources--soil, water, flora, and fauna--and arrange for adequate control or adjustment of--

1. Domestic-stock grazing.
2. Timber use and silvicultural practices, including brush clearing.
3. Water uses--domestic, irrigation, flood control, mosquito control, drainage, pollution, and sanitation.
4. Cropping practices and rotations.
5. Public use.

C. To produce optimum conditions for the wildlife population and arrange to provide suitable environmental conditions, as:

1. Stream, pond, and cover improvements where needed.
2. Adequate food supply--suitable herbage, grasses, shrubs, trees, and marsh and aquatic vegetation.
3. Adequate nesting, rearing, resting, and breeding sites.
4. Sufficient refuges to preserve natural breeding stock.
5. Maintenance of balance between populations and requirements of the various species.
6. Predator and rodent control where necessary.
7. Adequate fire protection and guards against harmful trespass.

D. To assure proper utilization of wildlife, by--

1. Providing for recreation--camping, boating, tramping, hunting, fishing, use of trails and roads.
2. Establishing definite quantity, season, area, and trapping permits for fur animals, consistent with State laws and regulations.
3. Establishing definite seasons, bag limits, and hunting restrictions for game species, consistent with Federal and State laws and regulations.
4. Properly limiting the number of licenses and seasonal hunting permits.
5. Establishing definitely the total wildlife crop to be harvested; allowing a safe surplus for breeding, the safety margin to be determined by rate of increase, extremes in climatic conditions, and health and vigor of the species.
6. Establishing definite policies as to disposition of privileges, through free use, lease by acre or season, or sale of hunting and trapping permits.

E. To assure protection of personal and property rights, by providing:

1. Adequate patrol against fire, poaching, and trespassing.
2. Facilities to prevent damage by wildlife.

II. What are the specific objectives for each area or unit?

A. To provide returns to the community, by--

1. Obtaining locally scientific data on life histories, relation to environment, disease, management, and economic relationships, and providing facilities for obtaining, retaining, and interpreting data for use by others, especially in cooperative undertakings.
2. Determining and providing means of using to best advantage the attractant or advertising value of the area--residents should be given first consideration, then non-residents and visitors, if desirable.
3. Determining means of best acquainting the members of the community with the esthetic value of wildlife and providing facilities to encourage this appreciation.
4. Making wildlife management a community interest, through 4-H clubs, Boy and Girl Scouts, garden, outing, hunting, and women's clubs, civic organizations, and educational groups.
5. Encouraging outsiders, either as organizations or individuals, to use the area for legitimate and appropriate purposes.

B. To provide returns to individuals through--

1. Recreational use, such as esthetic and social enjoyment, development of educational hobbies, hunting and fishing privileges.
2. Utilitarian use, such as in insect and weed destruction, erosion, water, and animal-pest control, property protection, and monetary returns.

Supplemental Information

Where can literature, information, and assistance be obtained on problems in wildlife management?

A. United States Department of Agriculture, Washington, D. C.

1. Bureau of Biological Survey.
2. Extension Service.
3. Forest Service.
4. Soil Conservation Service.

B. United States Department of the Interior, Washington, D. C.

1. National Park Service.
2. Division of Grazing.

C. United States Department of Commerce, Washington, D. C.

1. Bureau of Fisheries.

D. State fish and game officials, State conservation departments.

E. Colleges and universities in the State.

F. County extension agents.

G. State or county planning boards.

H. Various local, State, and national associations interested in wildlife conservation.

C
O
P
Y

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

JWS

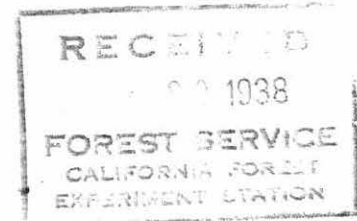
Washington

RR(G)
Management
Administrative Studies Review

April 1, 1938

G
Studies, R-5
Administrative Studies

Regional Forester
San Francisco, California



Dear Sir:

Reference is made to Dr. Campbell's memorandum of March 12, transmitting a copy of Swift and Fausett's report of February 23, on grazing administrative studies in the California Region.

This report has been reviewed by Chapline and Dutton. They consider it a fine job, agree in the main with its findings, and believe that the recommendations might well serve as a guide in the formulation of a general administrative grazing studies policy.

The report outlines the reasons why administrative range studies have failed in the past and recommends general discontinuation of such studies by the administrative organization in the future. It is generally recognized that the success of administrative studies depends primarily upon effective planning, adequate time and men assigned, sufficient expense funds, and competent help to carry out the projects. Failure to meet these conditions has resulted in general failure of the administrative range studies program in the past, and there is no assurance that an administrative studies wildlife program would not meet with similar obstacles in the future. For these reasons this office doubts the advisability of continuing all administrative wildlife studies in administration.

Research probably will not have the finances in the near future to undertake the handling of many specific problems confronting administration, empirical answers to which would be of real value to administration. We have in mind such things as the checks of the open-herding and bedding-out system and of the deferred and rotation system of grazing, or checks of grazing capacities on entire allotments such as were made in a number of regions before the war. This office feels, however, that all range administrative studies, including wildlife where possible, should as rapidly as possible be placed under the supervision of the Directors of the Experiment Stations but closely coordinated with the administrative organization and provision made for joint planning, inspection, and review of results.

Copy given to RSC, + Tamm for 5/11-38 Ha

Copy for Mrs. Swift

copied

A letter will probably go to all Regions in the near future requesting reviews and recommendations similar to those obtained through Swift and Fausett's report. This letter, of course, will need to be considered by your Region only to the extent that features in it are not covered in the California report. In the meantime, of course, the California Region will not want to launch out with an independent administrative studies policy until an agreement has been reached on a service-wide administrative studies policy.

Very truly yours,

/s/ E. W. Loveridge
Acting Chief, Forest Service

copied

W
Wildlife
Furbearers
Beaver

May 19, 1938

State of Idaho
Department of Fish & Game
Boise, Idaho

Gentlemen:

During 1934 the California Region of the U. S. Forest Service purchased five pairs of Beaver from your department for planting in the National Forests. These introductions have been very successful and no doubt will provide centers for further distribution in nearby Forest areas.

In considering the history and origin of the plant, however, we would like to have you verify several items. The beaver were expressed from two localities:

Blackfoot, Idaho

Aug. 23, 1934 2 males 2 female

Phonics - 1 ♀ died

Bellevue, Idaho

Sept. 11, 1934 1 male 2 females

" 16, 1 male

Nov. 5 1 male 1 female

Nov. 14, 1934 1 female (to replace female

Stamens
of Aug. 23 shipment. *Phonics*
that died)

The Bellevue Beaver were expressed by Game Warden J. M. Wright, but our records do not show who originated the shipment from Blackfoot.

It would be appreciated if you could advise us:

1.- If all the beaver are considered the same sub species
i.e., Pacific Beaver (castor canadensis pacificus)

2.- On the county and the particular locality and stream
from which each shipment was taken.

Very truly yours,

S. B. SHOW, Regional Forester

By

Acting

Shasta Beaver	Castor canadensis	shastensis
Golden "	"	subauratus
Smoka "	"	fundator
Pacific "	"	pacificus

2 columns
orig on plain white

BEAVERS INTRODUCTIONS in the California National Forest

Although California never supported Beaver to the extent that Oregon and Washington or the Rocky Mountain States did, it nevertheless had a sizable population. In fact three races were ~~well~~ represented within the State: Sonora Beaver ^(*Castor canadensis frondator*) on the Colorado River, the Golden Beaver ^(*C. C. subauratus*) in the Great Valley, and the Shasta Beaver ^(*C. C. shastensis*) in the mountains of Northern California. Through trapping, conflict with farming and other disturbances, the races were reduced until only occasional colonies remain today.

The distribution of the native beaver is interesting. Despite their presence in the Great Valley and both ends of the State, there is no evidence to show that any races inhabited the Sierra Nevada or Coast Range mountains. This is a curious situation, as the mountains provide the most desirable beaver habitat.

Prior to 1934, workers in the Forest Service and other interested groups ~~have~~ considered the advisability of introducing beaver to selected sites on the National Forests ^{areas of} in the Sierra Nevadas. Perhaps the first attempts were made by the State Division of Fish and Game and the Modoc Forest to trap and transfer Shasta Beaver from Modoc County. Although several attempts were made, notably in 1931, and some beaver taken, no transfers and introductions were ever carried out.

The interest in beaver continued, and in 1934 the cooperation and consent of the U. S. Biological Survey and the State Division of Fish and Game were obtained for introducing Pacific Beaver (*Castor canadensis pacificus*) from Idaho. In all, eleven beaver were received, two pairs from _____ Creek in Bingham County and three pairs and a female (to replace a loss from an earlier shipment, from _____ Creek

~~In~~ Blaine County, Central Idaho. In the middle of September, two pairs from Blaine County were released in temporary dams in Wheats Meadows on the Stanislaus National Forest. The remaining Pacific Beaver, two pairs from Bingham County in late August and one pair from Blaine County in early November, were planted in temporary ponds on Rowland Creek, in the Plumas National Forest.

Both introductions have been successful, the beaver increasing in ^{of individuals} numbers and colonies in the planted streams, and to a limited extent migrating to and establishing new colonies on nearby streams. They now appear to be well established and should become a permanent addition to the Sierra Fauna.

G-22372
Beaver
How of Cal. from 1937
20 miles
2 Vol. illus.,
Grinnell, Joseph, Joseph S. Dixon and Jean M. Linsdale "Fur-bearing Mammals of California" Vol. 2, 1937.

1935
21 Anthony HE "Field book of North American mammals". *Grinnell*

New York 625 pp., illus. 1935

Lloyd W. Swift
U.S. Forest Service

REVIEW OF MANUSCRIPT "AN ECONOMIC STUDY OF RANCHING OPERATIONS
ON THE JORNADA EXPERIMENTAL RANGE" by Fred W. Ares and Kenneth
A. Valentine

Since this is a report on a single operation, the conclusions must necessarily be specific for the Jornada, with the proper interpretation for similar situations. This principle has been observed. The upsets in the normal operations caused by the changes from owner to renter in 1933, the severe drought of 1934, and the erratic selling and herd replacements, would have caused me untold anguish had I been preparing the manuscript. In the main I believe the authors have done a good job with the material. My comments follow:

Page	Para- graph	Line	Specific comments
1 & 2			Suggest omit the historical data from this publication. Enlarged, it would make a fine article for some livestock journal.
3	2		Good paragraph -- it ties things down
4	1	9 & 10	Not clear to me. Does the 150,000 area include all the mesa mentioned in lines 5 and 6?
5	1	4 & 5	Shouldn't this be restored?
6			What is authority for common names? <u>Ceanothus greggii</u> and <u>Atriplex canescens</u> , for example, do not follow the Range Plant Handbook.
8	1	5	Suggest change "concentration of stock" to utilization.
10	5	1	What is the definition of a cow? (See p. 1 of Circular 448)
17	2		Shouldn't this be changed to an observation or an admission rather than a positive statement? Until recently, the grazing regulations held that range privileges should have no sale value.
19	4	4	9-year old calves! What a climate! That beats California
24	3		Same suggestion as pages 1 and 2
25	1 & 2		
27			Believe Table 6 sufficient
28	2		First and last two sentences seem to conflict.
34	5	6	Is there a conflict? P. 34, a 58 percent calf crop met all running expenses. On p. 36 a 46 percent calf crop met cash expenditures. On Tables 2, 4 and elsewhere cash expenditures and running costs are synonymous.
36			

Copy for LWE

General Comments

1. If the data are readily available, it might be a good idea to show by table for each year:

- (1) The average number of breeding cows
- (2) The percent calf crop
- (3) The cow replacement

Considerable discussion centers around these factors; hence more details would be helpful.

2. The drought discussion could perhaps stand more strengthening. On page 23, paragraph 2, and page 31, last paragraph, the 25 percent reserve is emphasized as a means to carry through drought years. Then on page 32 a drought is reported for 1934 that severely disturbed the livestock operation, causing drastic retrenchments, even though conservative stocking had been practiced in previous years. Without some long-time record to show that the 1934 drought is unusual, the 25 percent reserve for a drought safety measure appears impractical from the producer's standpoint.

3. The profit conclusions appear to be open to question. By dropping 1928, the first year of the record, the results would be an average loss of about \$3.00 a cow instead of the reported profit of \$1.91. 1928 figures are so different from the other years that they look "queer." For instance, there is a sale of 888 yearlings, yet the average number of cows is 992 and the average calf crop 66 percent. Furthermore, Table 1 shows the 1928 gross receipts of \$76 per cow to be \$43 greater than 1929, the next greatest year, and \$56 greater than the average (\$19.56). Table 3 shows net proceeds per cow for 1928 to be \$42.80, yet the 9-year average is \$1.91.

My reaction, and I am sure the reaction of the practical stockman, would be to raise two points:

- (1) If the study had started in 1929 instead of 1928, an entirely different story would be told.
- (2) Are 1928 figures typical, i.e., is such a combination of circumstances to be expected about every 10 years on the Jornada and elsewhere in the southwest?

It seems to me that the 1928 record must be dropped as questionable, or, if retained, it must be adequately explained to meet the criticism I have made.

4. Shouldn't E. W. Nelson's Black Grama bulletin be cited?
(Tech. Bul. 409)

LLOYD W. SWIFT
Forest Ecologist

BIG CREEK UNIT - WATERSHED STUDIES

General Notes

No evidence of any grazing on the watersheds this season. Upper two-thirds of watersheds in general show light to no grazing in past years. Lower third of watersheds shows moderate to close grazing in past. Some evidence of overgrazing in past observed, the lower third showing trailing and a few shallow, healed gullies.

An estimate was made of the percent of each watershed that could be easily grazed by cattle — the estimates were:

Watershed	Percent easily grazable	
1	25	} This mostly lower quarter
2	25	
3	30	
4	25	
5	30	
6	20	
7	30	

Cattle may be able to get over another 50 percent of the watersheds, but with difficulty.

Believe it would be a good idea if all of the recent land slides were located on the watershed map. A brief description of each slide — percent slope, apparent soil depth, vegetation cover, should be included. Old depressions show that these slides have taken place in the past. This might be classed as normal erosion for very wet years. Most of the slides started where there was little or no grazing by livestock, because of steep slope.

It would appear that a large part of the debris caught in the catchment basins came from the slides and most of the other came from the walls of the drainages. Much of that from the walls probably would not have broken loose had it not been for the slides of soil and stones entering the drainages and causing the breakdown of the walls through abrasion.

It is thought that these watersheds are not well suited for a study to determine the effect of grazing on water yield and on erosion. A part of the upper watersheds is too steep to be grazed by stock, and much of the remainder is too steep for uniform grazing. The best part for grazing is the lower quarter of the watersheds. This part is in desirable range condition, supporting a good density of high quality feed. The lower part could easily be grazed at different intensities, but this would not provide much information as to what was taking place over the whole watershed.

It may prove even more difficult for the livestock to get over the slopes after the fences are installed. The draws are naturally too steep, so upward progress has most likely been by zig-zagging up the ridges. Then, too, the more accessible portions at the top were no doubt reached from the main ridge and in a large part by drift from the Sycamore Creek side. When these watersheds are fenced the livestock will be limited to long, narrow, increasingly steep pastures. This will so restrict their movements that they probably will not be able to use the upper portions of the watersheds.

Manipulation of the cover through burning may not be a desirable move in this area. Burning ordinarily is not considered advisable, even by the local stockmen. The brush and tree cover is naturally limited, and there is not the problem of woody species taking over the land and eliminating the herbaceous forage species. Furthermore, the dry feed is commonly needed for the livestock in the fall and therefore the livestock owners would not want to lose it through burning. If further check shows these things to be true, it would seem unwise for us to bring burning to public attention by introducing it into the experiment.

Recommendations.

1.A Range Studies

Administration should discontinue all effort of a range research nature, referring all research problems to the Experiment Stations. Thereafter, under the direction of the station, administration might undertake projects at the discretion of the Director and Regional Forester if:

A. The project needs special attention and cannot be studied by the station proper.

D. Erosion controlled.

B. Adequate time and finances are set up.

C. Competent personnel is assured during the life of the project.

Wildlife Studies. Administration should continue wildlife studies so long as the following conditions prevail:

A. The problem needs investigation yet it is not possible for the proper cooperating agency to initiate the study.

B. The study is carefully planned and adequate direction is provided by the proper cooperating scientific agency and the

Regional Forester.

C. Conditions B & C under range studies are assured.

2. Administration should concentrate on field demonstration of established principles and practices.

A. Plots Fenced plots, similar to the past study plots, that demonstrate the vegetation recovery or lack of recovery under a particular set of grazing, soil, plant, and moisture conditions will be allowed by the Regional Forester if:

1. They are needed to demonstrate the administrative action thought necessary.

2. The demonstrations can be carefully located so that there is little doubt that it will prove the desired points.

3. The plots are readily accessible to the public and their purpose explained by signs.

B. Demonstration Allotments.

At least one demonstration allotment should be developed on each forest. These allotments should be used as examples of acceptable range management practices and resource condition. They should have:

- A. Proper stocking, so that the soil and plant cover are satisfactory or are definitely approaching it.
- B. The fullest practical development by fences and water development.
- C. Adequate salt plans.

D. Erosion controlled.

Respectfully submitted,

2 C Demonstrations, other than plots and allotments, that serve as field trials of principles developed by the Experiment Station. Such demonstration trials will be primarily for the members of the Service, rather than the public, as Forest Officers must understand a principle before it can be applied or passed on to the public. These demonstrations:

1. Should be carefully planned by the Director, Regional Forester and the Forests concerned.
2. Should have adequate provisions for finances and supervision.
3. Should be given wide application if trials are successful.

Date

Approved

3. From the above it naturally follows that the Experiment Station and Regional and Forest personnel should be familiar with the major aspects of each others work and problems. This can be accomplished by

- A. Short periodic details of station Range men to grazing forests.
- B. A closer tie between the Region and Station field headquarters.
- C. A gradual feeding of station studies and findings to the administrative field force.
- D. Application by administration of principles as developed by the station, and provided for under 2C.

4/1/38

R(R)
Management
Utilization Standards

Director, C. F. & R. E. S.

My job list of October 16, 1937 provides for a statement on the present station research as it relates to utilization with additional utilization problems needing solution. As I interpret this, some of my statements can be personal opinions unsupported by any detailed analysis.

The present programs at Burgess Springs and the San Joaquin Range are definitely attacking the utilization problem. In fact, in a broad sense, perhaps all the range work is applied eventually to the determination of what constitutes proper use.

Although I am not too familiar with the methods used — indeed am not competent to judge their worth — I nevertheless have the temerity to offer some opinions. These are:

A. Of all the approaches to allowable use, the actual grazing of the run-off plots has the greatest appeal to me. This is because it seems logical to first discover what is the minimum cover needed to prevent abnormal run-off and erosion under actual grazing use. After this important limit has been determined, such refinements as the effect of season of use, climate, etc., on forage volume and composition could be correlated. If the opportunity afforded, I would suggest that intensity of use pastures be coincident with complete drainage systems, so that the run-off and erosion could be measured.

B. The Range staff is doing fine work at both field stations — but unfortunately these stations are not on the critical range problem areas under National Forest Administration. With due regard for "budget appeal", maintaining

our leadership in range work and developing alternate practices for livestock enterprises barred from the Forests, we nevertheless still have the first job of managing the resource under our immediate supervision. The present range work does not meet that requirement, even though Burgess Springs is a step in that direction. My criticism with Burgess Springs is that it is an off-shoot of Silviculture and does not fully provide for the range viewpoint. In this Region range men, and many silviculturists, are not concerned over livestock damage to conifer reproduction: Furthermore, timbered areas rarely constitutes a range sore spot.

From the administrative standpoint — and perhaps also to the stockmen — a part of the San Joaquin Range should be used in connection with some National Forest range. In this way, knowledge of the problems and practices as encountered by the cattle permittees would be gained. Through this knowledge a greater appreciation of the practical phases would be acquired, as a result we would have more of a common ground to sell improved range practices. It all comes back to my central point — that after all the first thing should be to do a good job administering the resource already under our jurisdiction.

The problem of administration is how to adjust the use of the various areas and types within a given grazing allotment. The Station of course, fully appreciates this need and hopes some day to study the relationships and use of the several types within an allotment. In the mean time, however, I cannot help expressing a regret that the real problem range areas (as meadow, sage and Juniper types) under our jurisdiction are not being studied.

C. So far as forest administration and resource management is concerned, I believe, the forage types needing study, in order of importance, are:

1. Sage and Sage-Bitterbrush
2. Juniper - Sage
3. Dry (bunchgrass) meadows
4. Scattered Jeffrey pine-sage-bitterbrush
5. Shorthair sedge
6. Wet meadows.

This classification places emphasis on the types that should always be chiefly valuable for forage. For the most part they are types characterized by low rainfall and severity of site, and therefore are easily damaged by excessive cropping. Recover, too, is much slower than on more favorable sites.

D. Closely tied to utilization is the subject of grazing surveys. The system of surveying is open to question as indicated by the revisions made in the method during 1937. Perhaps the whole system should be overhauled. In this region there is a crying need for more reliable forage acre requirement figures. Their development could well be a Station-Region endeavor.

Forest Ecologist

BEAVER INTRODUCTIONS IN THE CALIFORNIA NATIONAL FORESTS

Although California never supported beaver to the extent that Oregon and Washington or the Rocky Mountain states did, it nevertheless had a sizable population. In fact three races were represented within the State: Sonora Beaver (Castor canadensis frondator) on the Colorado River, the Golden Beaver (C. c. subauratus) in the Great Valley, and the Shasta Beaver (C. c. shastensis) in the mountains of northern California.^{1/} Through trapping, conflict with farming, and other disturbances, the races were reduced until only occasional colonies remain today.

The distribution of the native beaver is interesting. Despite their presence in the Great Valley and both ends of the State, there is no evidence to show that any races inhabited the Sierra Nevada or Coast Range mountains. This is a curious situation, as the mountains provide the most desirable beaver habitat.

Prior to 1934, workers in the Forest Service and other interested groups considered the advisability of introducing beaver to selected sites on the national forest areas of the Sierra Nevadas. Perhaps the first attempts were made by the State Division of Fish and Game and the Modoc Forest to trap and transfer Shasta Beaver from Modoc County. Although several attempts were made, notably in 1931, and some beaver taken, no transfers and introductions were ever carried out.

The interest in beaver continued, and in 1934 the cooperation and consent of the U. S. Biological Survey and the State Division of Fish and Game were obtained for introducing Pacific Beaver (Castor canadensis pacificus) from

^{1/} Grinnell, Joseph, Joseph S. Dixon and Jean M. Linsdale.

Fur-bearing Mammals of California. 2 vol. illus. Vol. 2. Berkeley. 1937

Idaho.^{2/} In all, eleven beaver were received, two pairs from Bingham County and three pairs and a female (to replace a loss from an earlier shipment) from Blaine County, central Idaho. In the middle of September, two pairs from Blaine County were released in temporary dams in Wheats Meadows on the Stanislaus National Forest. The remaining Pacific Beaver, two pairs from Bingham County in late August and one pair from Blaine County in early November, were planted in temporary ponds on Rowland Creek, in the Plumas National Forest.

Both introductions have been successful, the beaver increasing in number of individuals and colonies in the planted streams, and to a limited extent migrating to and establishing new colonies on nearby streams. They now appear to be well established and should become a permanent addition to the Sierra Fauna.

^{2/} Anthony, H. E. Field Book of North American Mammals. 625 pp., illus.
New York. 1935.

LLOYD W. SWIFT
U. S. Forest Service

June 1938

CHARLES C. ADAMS
DIRECTOR
ALVIN G. WHITNEY
ASSISTANT DIRECTOR

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
NEW YORK STATE MUSEUM
ALBANY, N. Y.

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ASSISTANT STATE ZOOLOGIST
NOAH T. CLARKE
STATE ARCHEOLOGIST

OFFICE OF DIRECTOR

November 10, 1938

Mr. Lloyd W. Swift
Giannini Hall
Berkeley, Calif.

Dear Mr. Swift:

I presume you have returned from your eastern trip; and I hope that you had no difficulty in traveling through Connecticut and Rhode Island though it was only ten days after the hurricane of Sept. 21. It was a pleasure to have you and Mrs. Swift here for a day and to know the family associations which made the State Museum of more than usual interest to you.

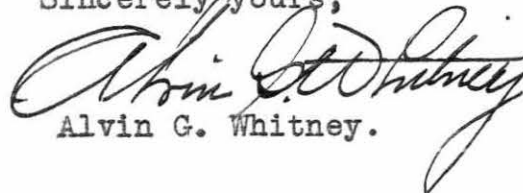
I recall that during our conversation on preservation of natural conditions on wild lands, you mentioned the gasoline stations in Southern California distributing road maps showing what purport to be projected highways across the southern sierras, where actually no roads have been proposed. I wish I could obtain copies of one or more of these maps, as examples of how the thought is put in the minds of the traveling public. Please advise me how or where to get them.

It would be a real satisfaction if we might keep in touch on erosion and land restoration questions.

And when you see my old friend Stuart Show, do assure him my warm regard.

With all kind wishes to you and Mrs. Swift,

Sincerely yours,


Alvin G. Whitney.

AGW:MEB

December 14, 1938

Mr. Alvin G. Whitney
Assistant Director
New York State Museum
Albany, New York

Dear Mr. Whitney:

My quest for further data on the proposed highways across the Southern Sierra did not yield as much information as I had hoped. I did find, though, that the matter was more involved than I had suspected.

Apparently a lot hinges on what is meant by a "proposed highway." The State Engineer's office advises me that the road maps are correct in showing state routes 168, 180 and 190 as proposed routes over the Sierra. On the other hand, their own map (copy was requested but not received) of the highway routes in the state only shows 190 as a through route. Furthermore, they report that the engineering problems associated with routes 168 and 180 are almost insurmountable and cannot be justified under present conditions, but that 190, under present plans, will be ultimately completed. Enclosed copies of letters from the California State Division of Highways and the California State Automobile Association elaborate on this situation. Perhaps the last two paragraphs in the Auto Club letter could be interpreted as an invitation for the Wilderness Society to present its views before the Club's Board of Directors.

In discussing these roads with the Forest Highway men in my own organization, I found that 190 had been an approved route until recently. Within the last few months it has been removed from the Forest Highway system as a through route, now only being approved on the west side to Quaking Aspen, which is well removed from the high country.

The variation in the five enclosed maps is interesting, but I cannot explain it. Associated and Shell show all three routes as proposed in full. Union shows 180 only, and Texaco shows 180 as nearly a proposed through road. Standard leaves all three out, but I have a slightly older issue of theirs that is similar to the Associated and Shell maps in indicating 168, 180 and 190 as proposed through routes.

Mrs. Swift and I read with interest Dr. Ruedemann's findings on "Beaver at Troy" as reported in the December 12 issue of Time Magazine. Please convey our regards to him.

I gave your message to Mr. Show. He is surely a busy man these days. As you may know, one of the big issues out here is the proposed Kings River National Park. No doubt it will come up again in this session of Congress.

We expect to move to Denver by the middle of January, where I will be the Fish and Game man for the Rocky Mountain Region of the Forest Service. We will look forward to a visit with you whenever you happen to be out our way.

Sincerely yours,

CALIFORNIA STATE AUTOMOBILE ASSOCIATION

INCORPORATED SEPTEMBER 4TH, 1907

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SAN FRANCISCO, CALIFORNIA

December 8, 1938

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Mr. L. W. Swift,
907 Oxford Street,
Berkeley, California.

Dear Mr. Swift:

Your recent letter addressed to our Oakland Office relative to the continuation of State Routes #190, #168, and #180, has been referred to the writer for reply.

In discussing this matter with the State Engineers, I find that the only proposed extension of these routes applies to #190. Apparently there is some real need for completing this route. However, with respect to routes #168 and #180, it is the understanding of this writer that the engineering problems involved in any attempted continuation of these routes are almost insurmountable; and that for the present at least, it would be difficult to justify the tremendous expenditure which would be required to accomplish such an objective.

I do not believe that this matter has ever been before our Board of Directors for action, and if you have any thoughts or suggestions on this subject I should be pleased to have them in order that they might be presented to the Board for definite action. In any event, as I understand the situation at the present time, there is no thought of continuing routes #168 and #180, although #190 will, under present plans, be ultimately completed.

I would appreciate having your further views on this matter.

Yours very truly,

C. C. COTTRELL, Manager
Highways Bureau

By *William S. Moore*
Assistant Manager



ESM:ve

NATION WIDE SERVICE THROUGH AFFILIATION WITH AMERICAN AUTOMOBILE ASSOCIATION

STATE OF CALIFORNIA
Department of Public Works

SACRAMENTO

DIVISION OF HIGHWAYS
PUBLIC WORKS BUILDING

December 5, 1938

PLEASE REFER TO
FILE NO.

900.71

Mr. L. W. Swift
907 Oxford Street
Berkeley, California

Dear Sir:

Reference is made to your letter of November 30 relative to State Sign Routes 168, 180, and 190 over the Sierra.

The maps to which you refer are correct in showing the portions of these routes across the divide as proposed.

Route 168 is proposed from Huntington Lake to a point west of Bishop near Sabrina Reservoir.

Route 180 is proposed from the head of construction at a point on the Kings River near Granite Creek to Independence.

Route 190 is proposed from the head of the South Middle Fork of Tule River to a point southwest of Lone Pine near Wonoga Peak.

Very truly yours,

C. H. PURCELL
State Highway Engineer

By RICHARD H. WILSON
Office Engineer

By *John D. Gallagher*
Assistant Office Engineer

114

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
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NOAH T. CLARKE
STATE ARCHEOLOGIST

OFFICE OF DIRECTOR

December 19, 1938

Mr. Lloyd W. Swift
907 Oxford Street
Berkeley, California

Dear Mr. Swift:

received today

Your interesting letter of December 14 and the six California highway map folders. I think this is very important as illustrating the persistent tendency to push highways into and through remote and difficult terrain just as fast as funds can be extracted from the unwitting taxpayers, — regardless of actual necessity. The urgent need for a Federal departmental reorganization in which the National Resources Committee would become a National Resources Planning Board seems clear in that highway developments might then be regulated according to a long-time plan. At present such developments are running wild.

Have you called this California situation to the attention of the Wilderness Society, or do you intend to?

Are you willing that I transmit copies of this correspondence and road maps to Mrs. C. N. Edge, Chairman of the Emergency Conservation Committee which has been so active in getting critical areas added to the Yosemite and Olympic reserves, and which is vitally interested in the question of retarding highway development in wilderness areas? These letters are of course unofficial, but my thought is to be sure their use will in no way embarrass you as a government employe.

As to the beaver as agents of physiographic change, that article by Ruedemann and Schoonmaker in Science (Dec. 2, 1938) has brought a remarkable response to Dr. Ruedemann. Though nothing new, that brief note "took" with the public at this time when the subject of soil migration is so much in the news. I have just now given your message to Dr. Ruedemann and he hands me the enclosed reprint for you.

Mr. Lloyd W. Swift

-2-

December 19, 1938

Between 1920 and 1925 I spent several summers in the western Wyoming beaver country and closely observed conditions. If you are interested to get the Roosevelt Wild Life Annals, Vol. 1, Nos. 1-2 (see list enclosed), I think you will find a note of mine in the Addendum to Warren's paper on the beaver of northeastern Yellowstone Park regarding an apparent ancient beaver meadow surrounded by dense lodgepole pine, adjacent to Tower Creek, and with a sloping surface such as Ruedemann has observed. I distinctly recall how that caught my eye, though I may not have mentioned it in the printed report. *Sant*

I send kindest holiday greetings to you and Mrs. Swift, and hope we may keep in touch after your transfer to Denver.

Sincerely yours,

Alvin G. Whitney
Alvin G. Whitney.

AGW:MC
Enc.

December 27, 1938

Mr. Alvin G. Whitney
Assistant Director
New York State Museum
Albany, New York

Dear Mr. Whitney:

Your letter of December 19, with Dr. Ruedemann's beaver reprint and List of State College Publications has been received.

After some thought, I think it would perhaps be unwise to transmit the correspondence and my letter of December 14 to Mrs. Edge. It is rather an involved situation, and I am not sure that my own organization has adopted a clear-cut course. Perhaps it would be best for Mrs. Edge to write direct to the State Engineer and others concerned.

Bob Marshall and others are in close contact with the road situation in the High Sierra, and I think have brought it to the attention of the Wilderness Society.

Thanks for the List of Publications of the Roosevelt Wildlife Station. I had the pleasure of stopping at Syracuse while East. I especially enjoyed talking to Dr. Stegeman, who had just published on the European Wild Boar in the Cherokee National Forest. Apparently the wild boar in our Santa Lucia mountains are the same stock.

Sincerely yours,

LLOYD W. SWIFT

Is there a place for burning in the management of California lands?

Yes, almost everywhere. Benefits to (1) livestock industry,
(2) wildlife, (3) lumber industry, and (4) water users, etc.

Will show no clear-cut no-burning policy possible.

Livestock industry

Situation — importing state
1 million sheep yearly.
750 thousand cattle

Need — range for feeders — not feds, to use agricultural by-products
(meals, pulps)

Full use of resource — low value land and intense agriculture.

Foothills — most of 16 million acres brush and woodland here.
Intermediate area — valley and pine
Yields little, yet close to good land
Need to burn these areas — remove brush — get grass
Better soils will make permanent grass
Best crop first year, nutrients
Controls erosion, alternate burns
Brush due to past fires — Yes area to prevent slaughter
Need more frequent fires
Kill brush before heavy seeding

Can be done — even on chamise.

One case — Caribaldi — 300 acres. Cost \$5 — 5.60 clearing and burning —
10.60. 20 head 6 months to 100 head if \$1 a cow mo — \$2 income acre
Capitalized at 5% — \$40 an acre

North Coast Range Stock Ranges
Accepted practice
Good results
18,000 acres burned by State
Elimination of incendiary fires

Fight fire with fire
Cut-over and burned land in mixed conifer

No timber famine — even foresters see it now.

Possibly forage a higher use
Deerbrush (sweet-birch) points the way
Steer to acre — 4 mo. — Stanislaus pasture
1 cow month to acre on open range

Lumber Industry

Dr. Haig - Oct. '1938 Jour. For.

Fire important long leaf generation

Supported by workers Southern Expt. Sta., Harper and Osborne

One study 44 years burning no deterioration soil fertility

Mentioned South because technical workers slow to admit use of fire.

Same thing may be true here.

Do need to burn to get reproduction

Show and Kotok report 20,000 seedlings burned acre - none, unburned

Fire exclusion converts forest from pine to fir and cedar.

Redwoods -

Used to burn three times

Fires often deplored

Even foresters now admit fire needed

Remove slash

Permit reproduction

Insects

Does not start epidemic, even from killing burn.

Water yield

Engineers and irrigation men have long disagreed with foresters.

Professional groups, story may be good one.

Evaporation from soil nothing important

Horticulture - plow to remove weeds - not to stop evaporation from soil

Plants transpire tremendous amount

4-year prune tree, 1250 lbs. water one summer

Think of forest or brush field

Also rain caught in foliage, lost in litter

Hoyt and Troxell Report - 1932

Wagon Wheel Gap - Colorado

Santa Ana & Fish Cr. - S. Calif.

Colorado cut and burned, but coppice + weeds and grass

Fish Cr. burned.

Summer flow

Colorado - increased 12% over 7 years

S. Calif. - " 474% " 6 "

Minimum increased

Colorado - 12% delayed 5 days

S. Calif. - 400% " 40 "

Probability of doubt not needed to know 400% significant.

Historical evidence refutes foresters

As evidence for burning in the management of California lands?

Flood of 1861-62 highest -

Higher before beneficial to (1) livestock industry,
(2) agriculture, (3) Forests little altered, (4) water runoff.

River channel not confined

Drought of 1863-64 - burning policy possible.

1/3 livestock died, start of use of mountain meadows

Forests little help

Lieutenant Ringgold, August 1841

River very low - salty

Shoals at Sacramento, bars at mouth American and Feather Rivers,

Certainly before forest and other cover was damaged by products
of fire.

Go to extremes in watershed - no land and intense agriculture.

Mendocino watersheds for water to run to ocean without industrial or
irrigation use.

Brushlands - most of 16 million acres brush and woodland here, in

intermediate area - valley, not fire

Foresters need new concept - place to grow land

Need to turn these areas - remove brush - get grass

Ecologists slow to accept role of animals in development of plant
communities. yes. nutrients.

Intense selection - alterable - burning

Ecologists and foresters likewise slow to appreciate role of fire.

Need more frequent fires.

Often refuse to accept fact - California types developed under influence
of fire.

Indians may have burned. Lightning certainly.

Early settlers - 1840s - 1850s - 1860s - 1870s - 1880s - 1890s - 1900s - 1910s - 1920s - 1930s - 1940s - 1950s - 1960s - 1970s - 1980s - 1990s - 2000s - 2010s - 2020s - 2030s - 2040s - 2050s - 2060s - 2070s - 2080s - 2090s - 2100s - 2110s - 2120s - 2130s - 2140s - 2150s - 2160s - 2170s - 2180s - 2190s - 2200s - 2210s - 2220s - 2230s - 2240s - 2250s - 2260s - 2270s - 2280s - 2290s - 2300s - 2310s - 2320s - 2330s - 2340s - 2350s - 2360s - 2370s - 2380s - 2390s - 2400s - 2410s - 2420s - 2430s - 2440s - 2450s - 2460s - 2470s - 2480s - 2490s - 2500s - 2510s - 2520s - 2530s - 2540s - 2550s - 2560s - 2570s - 2580s - 2590s - 2600s - 2610s - 2620s - 2630s - 2640s - 2650s - 2660s - 2670s - 2680s - 2690s - 2700s - 2710s - 2720s - 2730s - 2740s - 2750s - 2760s - 2770s - 2780s - 2790s - 2800s - 2810s - 2820s - 2830s - 2840s - 2850s - 2860s - 2870s - 2880s - 2890s - 2900s - 2910s - 2920s - 2930s - 2940s - 2950s - 2960s - 2970s - 2980s - 2990s - 3000s - 3010s - 3020s - 3030s - 3040s - 3050s - 3060s - 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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION



ADDRESS REPLY TO
DIRECTOR
AND REFER TO

UNIVERSITY OF CALIFORNIA
330 GIANNINI HALL
BERKELEY, CALIFORNIA

R
Meetings
Staff

January 4, 1939

MEMO TO STATION STAFF

The staff meetings this year are to be divided between controversial subjects related to forestry and informational talks on station activities. Discussion of controversial subjects will be in the form of debates. Each speaker will present all the arguments to prove his side of the question whether or not they represent his own convictions.

On January 9, Lloyd Swift and Jesse Nelson will square off on the question "Is there a place for burning in management of California lands?" Mr. Swift will present the affirmative and Mr. Nelson the negative side. Mr. Talbot will be chairman for the meeting. Time: 4:00 P.M.; Place: 133 Giannini Hall.

Bring your own questions and arguments and join in the discussion after the speeches.

PROGRAM COMMITTEE

J. R. Bentley, Chairman
M. R. Brundage
V. A. Clements

December 39, 1938

SUBJECT: Is there a place for burning in the management of California lands?

Pro -- Swift

1. Burning benefits livestock industry

- A. California deficient in livestock production area. Need more feeder stock to use agricultural pulps, meals, etc.
- B. Brush and woodland brush areas adjacent to Great Valley should be burned so some feed can be obtained.
- C. Burning has proved beneficial on sheep ranges in North Coast Range country.
- D. Cutover and burned lands in mixed conifer often support deerbrush stands of high carrying capacity.
- E. Even in Southern California stockmen believe in burning.

2. Burning benefits wildlife

- A. Large uniform types are often biological deserts, need interspersions of types and many edges.
- B. Best deer range in burns -- most and fattest bucks taken in burns.
- C. Quail foods conditions improved by burning.
- D. Bobwhite quail of south benefitted by burning, according to Stoddard's work.
- E. Burning of heath necessary to grouse production in Scotland.

3. Fire an aid to logging

- A. Used as a tool in management of southern pine forests.
- B. Tends to control insect infestations
- C. Slash burned on government sales.
- D. Fire recognized as a need in the redwoods to remove slash and prepare seed bed.

4. Burned watersheds have increased water yield.

- A. Little moisture evaporated from the soil surface from the soil moisture supply.
- B. Plants use tremendous volumes of water.

- C. Herbaceous cover would be better than forest or brush.
 - D. Historical records show both floods and drought before settlement.
 - E. Hoyt and Troxell report blasts the forest-watershed myth.
5. Foresters should accept fire and use it, not blindly fight it on all fronts.
- A. Our forests and other types developed under influence of fire, and were in good condition.
 - B. Old Timers' statements indicate our present policy unwise.
 - C. Now have a dense stand that cannot be protected, despite unlimited funds.
 - D. Foresters should recognize place of fire and assist in its wise use.

Con -- Nelson

1. Damage to livestock grazing by burning
- A. Our foothills adjacent to great valleys; it changes type of vegetation and increases erosion.
 - B. In Coast Ranges it increases worthless brush types.
 - C. High mountain areas, it crowds back timber line and increases runoff; decreases timber supply; increases erosion; is detrimental to recreation.
 - D. In southern California burning:
increases erosion,
is injurious to adjoining agriculture,
results in loss of human life,
damage to private property,
increases worthless brush cover.
2. Burning a detriment to wildlife
- A. Reduces natural forest cover for deer.
 - B. Increases kill of deer by hunters.
 - C. Reduces cover for upland game birds.
 - D. Increases loss from predators
 - E. Destroys nesting cover

3. Fire injurious to logging.

- A. Loss of commercial log material
- B. Injurious to reproduction
- C. Removes litter and ground cover
- D. Increases erosion
- E. Increases insect invasion.

4. Reduces usable water yield.

- A. Removes ground cover
- B. Increases erosion
- C. Increases floods
- D. Reduces natural reservoirs
- E. Impoverishes the soil

5. Why accept fires --

- A. Does one accept communicable diseases?
- B. Fire is necessary but must be used in moderation.
- C. Man has improved forest conditions.
- D. Science and knowledge has improved our perspective.
- E. Can fires be controlled?

1
Is there a place for burning in the management of California lands.

Benefits to
yes, almost everywhere ① Livestock
Industry ② Wildlife ③ Lumber
Industry ④ Water users

will show no clear cut no burning
policy possible

Livestock Industry.

Situation - importing state -

1 million sheep
750 thousand cattle

Need - range for feeders - ^{not feds}
to use agricultural by-products {meats
pulp}

Full use of resource - low value land
+ intensive agriculture

Foothills - most of 16 millions
acres brush & woodlands here

Intermediate area - valley & pine

yields little, yet close to good land

Buy ^{on hand} for spring feed
Better than spring - fall range elsewhere

Perfect burning
Have you done it?

✓

K
Personnel, Training
1939 Senior Ranger Camp

my

Denver, March 10, 1939.

MEMORANDUM FOR MR. SWIFT
Range Management

There will be 14 men at training camp. If you plan on covering anything on fish culture, may I suggest that you have 14 copies of Mr. Feast's mimeograph on fish culture and management for distribution to the men.

You may also wish to give the men mimeographed information sheets on wildlife management. These sheets brief the information given by the camp instructor and save the men from taking lecture notes. They are used only for important items or phases of the work when the instructor wishes the trainee to get exact facts or detailed procedures for doing the work.

I will be glad to assist you in getting started in this. The general form used is

Wildlife Management
Information Sheet

Objective - (Ex. - To outline the methods of making game surveys)

Purpose - (Ex. - To develop an understanding of the purpose and procedure in making game surveys)

Problem - (May state a work or job problem if one is involved on which information is based, otherwise may omit)

Information - (Body of, information, statement of procedure, methods, facts, etc.)

The same idea is adopted to problem sheets. For example, you can have a problem mimeographed or typed which you want solved and distribute it to the trainees in class. This saves instructors' and trainees' time in class whether the problem is solved in class or done as "home work" and handed in later. It also insures that each man "gets the problem" completely as stated by the instructor - no misunderstandings. Wildlife Management is scheduled for one full day on April 24 at the camp.

Lee P. Brown
LEE P. BROWN
Training Officer
Division of Operation.

UNITED STATES DEPARTMENT OF AGRICULTURE
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ADDRESS REPLY TO
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331 GIANNINI HALL
BERKELEY, CALIFORNIA

RR
Administrative Studies
Squaw Valley

April 20, 1939

Mr. Lloyd W. Swift
U. S. Forest Service
Post Office Building
Denver, Colorado

Dear Lloyd:

The Squaw Valley report has now been typed up and assembled, and a copy for you is enclosed.

In accordance with your wishes, we have forwarded three copies to the Regional Office — one for their files, one for the Tahoe Forest, and one for Leland Smith — and have retained one copy here.

Sincerely,

M. W. Talbot
M. W. TALBOT
In Charge Range Research

P.S. *As you requested, I'll keep you advised on reactions.*

Thanks for good letter re-Wildlife trip. Just what I wanted. Shantz kindly sent his comments, too. Both appreciated.
Enclosure
Regards, Cheers, Luck n' everything.
mf

May 17, 1939

MEMORANDUM FOR DR. IRA N. GABRIELSON

Chief, Bureau of Biological Survey.

Dear Mr. Gabrielson:

As requested in your memorandum (R Necedah) of May 3, consideration has been given to the opinion of April 19 of the Attorney General of Wisconsin regarding the relative jurisdictions of the State and of the United States over the Necedah Migratory Waterfowl Refuge. He holds that the prohibition against hunting set forth in the Executive Order of March 17, 1939 (Federal Register, Vol. 4, No. 52, page 1241), establishing the reservation, is void because of his view that the State, not having ceded jurisdiction to the United States, has exclusive jurisdiction over wild life within the Refuge.

The Executive Order recites that certain lands were acquired under authority of Title II of the National Industrial Recovery Act, approved June 16, 1933, 48 Stat. 200, and the Emergency Relief Appropriation Act of 1935, approved April 8, 1935, 49 Stat. 115, and that all the right, title and interest of the United States in them were transferred to the Secretary of Agriculture for use, administration, and disposition, in accordance with the provisions of Title III of the Bankhead-Jones Farm Tenant Act, approved July 22, 1937, 30 Stat. 322, 523, and the related provisions thereof. It then reserves them and the intermingled public lands for the use of the Department of Agriculture as a refuge and breeding ground for migratory birds and other wild life by virtue of the general powers of the President, and in accordance with authority specifically conferred upon him by Section 32 of the Bankhead-Jones Act and by the Act of June 25, 1910, 36 Stat. 847, as amended by the Act of August 24, 1912, 37 Stat. 497.

The final paragraph of the Order provides:

It is unlawful for any person to hunt, trap, capture, wilfully disturb, or kill any bird or wild animal of any kind whatsoever within the limits of this refuge, or to enter thereon, except under such rules or regulations as may be prescribed by the Secretary of Agriculture.

The question as to the extent of the jurisdiction of the United States is necessarily a Federal question. Mason v. Tax Commission, 302

U. S. 186, 197, citing Brewer-Elliott Oil Company v. United States, 260 U.S. 77, 87, United States v. Utah, 283, U. S. 64, 75, and Borax Consolidated v. Los Angeles, 296 U.S. 10, 22. It must therefore, be determined according to Federal Law. Neither the National Industrial Recovery Act nor the Emergency Relief Appropriation Act of 1933 requires the consent of a State before land can be purchased within its boundaries. The only provision in the Federal Constitution in that respect is that the United States shall have exclusive jurisdiction over lands purchased with the consent of the State for forts, magazines, arsenals, dock yards and other needful public buildings. Article I, Section 8, Clause 17. It obviously has no application here. It is well settled by decisions of the Supreme Court of the United States that the United States may purchase lands for its purposes without the consent of the State, and that such consent is necessary only where exclusive jurisdiction is desired. Kohl v. United States, 91 U.S. 361, 371, 372; James v. Dravo Construction Company, 302 U.S. 134; Mason v. Tax Commission, 302 U.S. 185, 207; Collins v. Yosemite Park Company, 304 U.S. 418, 530. In James v. Dravo Construction Company the Court said:

The right of eminent domain inheres in the Federal Government by virtue of its sovereignty and thus it may, regardless of the wishes either of the owners or of the States, acquire lands which it needs within their borders. Page 147.

The United States is under an obligation to protect migratory birds by virtue of the existing treaties which it entered into with Great Britain, 39 Stat. 1702, and with the United Mexican States, 30 Stat. 1311. The furtherance of the objects of the treaties is clearly a Constitutional Federal function. Missouri v. Holland, 252 U.S. 416. Moreover, long prior to these treaties Federal refuges for the protection of birds were established under the President's general powers and their validity was recognized by the Supreme Court of the United States in United States v. Midwest Oil Company, 236 U.S. 439. That power still exists. United States v. Wilbur, 283 U.S. 414, 419. In the Midwest Oil case the Court said:

The President's power to reserve public lands for public use finds its sanction in Acts of Congress. Even where no specific statute directly authorizes the executive act, it nevertheless derives its authority from an assumed grant by Congress, manifested by frequent enactments of statutes giving like authority in like cases. Its extent is limited to the setting apart of particular tracts of land for public use, as the exigencies of the public service may require.

There can, therefore, be no doubt as to the validity of the order establishing the Refuge.

The Attorney General of Wisconsin contends, however, that the prohibition made by the Executive Order against hunting on the Refuge is invalid because, he says, the State is the owner of the game and

has exclusive jurisdiction and control over it. But the Supreme Court of the United States has said that the State has that power only in the absence of a valid exercise of authority in that regard by the Federal Government under the provisions of the Federal Constitution. In Geer v. Connecticut, 161 U.S. 519, 528, the Court said:

It is also certain that the power which the colonies thus possessed passed to the States with the separation from the mother country, and remains in them to the present day, insofar as its exercise may be not incompatible with, or restrained by, the rights conveyed to the Federal Government by the Constitution. (Underscoring added.)

In Kennedy v. Becker, 241 U.S. 536, the Court said:

It is not to be doubted that the power to preserve fish and game within its boundaries is inherent in the sovereignty of the State (Geer v. Connecticut, 161 U.S. 519; Ward v. Racehorse, 163 U.S. 504, 307), subject, of course, to any valid exercise of power under the provisions of the Federal Constitution. (Underscoring added.)

In Carey v. South Dakota, 250 U.S. 118, 120, the Court said:

It is admitted that, in the absence of Federal legislation on the subject, a State has exclusive power to control wild game within its boundaries and that the South Dakota law was valid when enacted although it incidentally affected interstate commerce. (Underscoring added.)

In Missouri v. Holland, 252 U.S. 416, the Court, in sustaining the validity of the Migratory Bird Treaty Act said, at page 434:

No doubt it is true that as between a State and its inhabitants the State may regulate the killing and sale of such birds, but it does not follow that its authority is exclusive of paramount powers. To put the claim of the State upon title is to lean upon a slender reed. Wild birds are not in the possession of anyone; and possession is the beginning of ownership. (Underscoring added.)

State control over wild life is merely an exercise of its police power. In Geer v. Connecticut, 161 U.S. 519, 534, the Court said:

The right to preserve game flows from the undoubted existence in the State of a police power therein which may none the less be efficiently called into play though by doing so interstate commerce may be remotely and indirectly affected. * * * Indeed, the source of the police power

as to game birds (like those covered by the statute here called in question) flows from the duty of the State to preserve for its people a valuable food supply.

As the court said in Missouri v. Holland, supra: "To put the claim of the State upon title is to lean upon a slender reed".

The Federal Government possesses with respect to its property a power analagous to the police power of the States. Camfield v. United States, 167 U.S. 518, 525. In that case the Court said:

The General Government doubtless has power over its own property analagous to the police power of the several States, and the extent to which it may go in the exercise of such power is measured by the exigencies of the particular case.

The United States may carry out its projects without regard to the police power of the States. United States v. Hunt, 278, U.S. 96; Arizona v. California, 283 U.S. 423. In the Hunt case, in sustaining the right of the United States to kill surplus deer on the Kaibab National Forest and the Grand Canyon Game Preserve, the Court said:

That this was necessary to protect the lands of the United States within the reserves from serious injury is made clear by the evidence. The direction given by the Secretary of Agriculture was within the authority conferred upon him by act of Congress. And the power of the United States to thus protect its lands and property does not admit of doubt. Camfield v. United States, 167 U.S. 518, 525-526; Utah Power and Light Company v. United States, 243 U.S. 389, 404; McKelvey v. United States, 260 U.S. 353, 359; United States v. Alford, 274, U.S. 264, the game laws or any other statute of the state to the contrary notwithstanding. (Underscoring added)

The United States has not undertaken to exercise exclusive jurisdiction over the Necedah Migratory Waterfowl Refuge. The State retains full jurisdiction over the lands except that it may not interfere in any way with the United States in carrying out the purpose for which the preserve is established and is being maintained. As said by the Supreme Court in the Utah Power and Light case, supra, at page 404:

True, for many purposes a State has civil and criminal jurisdiction over lands within its limits belonging to the United States, but this jurisdiction does not extend to any matter that is not consistent with full power in the United States to protect its lands, to control their use and to prescribe in what manner others may acquire rights in them. Thus while the State may punish public offenses, such as murder or larceny, committed on such lands, and may tax

private property, such as live stock located thereon, it may not tax the lands themselves or invest others with any right whatever in them. * * * From the earliest times Congress by its legislation, applicable alike in the States and Territories, has regulated in many particulars the use by others of the lands of the United States, has prohibited and made punishable various acts calculated to be injurious to them or to prevent their use in any way intended, and has provided for and controlled the acquisition of rights of way over them for highways, railroads, canals, ditches, telegraph lines and the like. The States and the public have almost uniformly accepted this legislation as controlling, and in the instances where it has been questioned in this court its validity has been upheld and its supremacy over state enactments sustained. * * * And so we are of opinion that the inclusion within a State of lands of the United States does not take from Congress the power to control their occupancy and use, to protect them from trespass and injury and to prescribe the conditions upon which others may obtain rights to them, even though this may involve the exercise in some measure of what commonly is known as the police power. "A different rule," as was said in Camfield v. United States, supra, "would place the public domain of the United States completely at the mercy of state legislation."

said: In McKelvy v. United States, 260 U.S. 353, 359, the Court

It is also well settled that the States may prescribe police regulations applicable to public areas so long as the regulations are not arbitrary or inconsistent with the applicable Congressional enactment.

In Surplus Trading Company v. Cook, 281, U.S. 647, 650, the Court said:

It is not unusual for the United States to own within the States lands which are set apart and used for public purposes. Such ownership and use without more to do not withdraw the lands from the jurisdiction of the State. On the contrary, the lands remain part of her territory and within the operation of her laws, save that the latter cannot affect the title of the United States or embarrass it in using the lands or interfere with its right of disposal. (Underscoring added.)

The provision in the Executive Order with reference to hunting is in reality merely an informative statement of what the law is, Hunting on wildlife refuges is made a criminal offense by Section 84 of the Penal Code as amended April 15, 1924, 43 Stat. 98, 18 U.S.C. 145.

It is clear from the foregoing decisions of the Supreme Court of the United States that the prohibition against hunting as set forth in the Executive Order is a valid exercise of power by the United States, that the Federal Government does not have exclusive jurisdiction over the Refuge, and that the land within the Refuge is subject to operation of State laws to the extent that they do not interfere with the Federal Government in the exercise of any of its duties and powers.

Very truly yours,

Very truly yours,

Nov. 19, 1939

Dear Mrs Swift,

I am seeking information as to the present whereabouts of a young lady by the first name of Marie who (if I am not mistaken) worked for you during the month of July (1938).

If you can send any information as to her home address and last name or school she attended or where she is at the present time. I would appreciate it very much.

Thank you
Claude Beaman,
Spencerport N.Y.