

*Gus: This is a more detailed outline of material for range management services unit. 9/70
 I am coming before you get here.*

COLLEGE OF AGRICULTURE

Course Syllabus

Department and course number RM 409 Credits 4 Quarter(s) offered A.

Name of Instructor in charge of course G. F. Payne

Title of Course Grazing Influences and Practices

Specific Objectives of the course:

To give students a basic understanding of the physiological effects of foliage removal on roots and photosynthetic material of plants. Responses to simulated and actual grazing will be considered. This leads to a study of the effects of large animal grazing on the ecosystem and to the development of grazing systems for range resource management. The special relationships of drought, small mammals and insects to ecological changes in vegetational composition and production are included.

Text(s) and/or principle references:

Current literature.

Course Outline:

- I. Relationship of anatomy of plants (grasses, forbs, shrubs) to defoliation.
 - A. Apical meristem growth and removal
 - 1. Management factors affecting development of phytomers
 - 2. Location of meristematic tissue
 - 3. Hormone relationships
 - 4. Classification of range plants on the basis of meristem location
 - 5. Classification of plants according to differential response to grazing pressure.
 - B. Form, longevity and depth of root systems in relation to grazing
 - 1. Production response
 - a. Depth
 - b. Quantity
 - c. Diameter
 - 2. Environmental relationships
 - a. Freezing resistance
 - b. Drought resistance
 - C. The plant unit - what it is anatomically and physiologically?
- II. Relationship of food manufacture and storage in plants (grasses, forbs, shrubs) to the grazing influence.
 - A. Seasonal patterns of synthesis of carbohydrates, proteins, and fats.
 - B. Food storage patterns in range plants
 - C. Relationship of grazing to food storage and to food use for regrowth

- III. Effects of intensity and season of grazing on rangelands
 - A. Responses of individual plants
 - 1. Foliage growth
 - a. Leaves
 - b. Stems
 - 2. Reproduction
 - 3. Interpretation in terms of "vigor"
 - B. Responses of the range complex
 - 1. Species composition
 - 2. Vegetational production
 - a. Live plants
 - b. Dead organic materials
 - 3. Soil relationships
 - a. Erosion
 - b. Compaction
 - c. Organic matter
 - d. Moisture

- IV. Effects of intensity and season of grazing on animal production
 - A. Weights
 - B. Reproductive performance
 - C. Relationship to genetic potential

- V. Grazing management systems
 - A. Basis in plant physiology and ecology
 - B. Animal production characteristics
 - C. Design of systems — *we will have to talk about rotation or not involving a year of rest in the rotation, and about one of the systems used in south Africa.*

- VI. Distribution of grazing animals
 - A. Factors affecting grazing animal distribution
 - B. The key area concept in management of grazing animals
 - C. Methods of improving distribution

- VII. The drought problem in range management
 - A. Vegetational composition and production changes
 - B. Problems in grazing animal management resulting from drought

- VIII. The small mammal problem in range management
 - A. Major small mammal problems
 - B. Characteristics and effects of small mammal utilization
 - C. Relationship of large animal grazing to small animal populations

- IX. The insect problem in range management
 - A. Major insect problems
 - B. Characteristics and effects of insect utilization
 - C. Relationship of large animal grazing to insect populations

File! Please



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

IN REPLY REFER TO:

3: 1400-410.4.44

State Office
316 North 26th Street
Billings, Montana 59101

SEP 2 1970

Dr. Gene Payne
Chairman, Animal and Range Science Department
Montana State University
Bozeman, Montana 59715

Dear Gene:

Pursuant to your request, Gus Hornay will spend December 10 and 11 with your students and faculty.

Gus will be conducting a training session in Billings the preceding three days. The training session will extend through 5:00 p.m. on December 9, therefore he will stay that night in Billings. We will plan on driving him to Bozeman the morning of December 10, so he should arrive approximately 10:30 a.m.

We suggest you contact Gus directly concerning the details of the two day visit. We would appreciate a carbon copy of the correspondence. Gus's address is:

Mr. A. L. Hornay
Pacific Southwest Forest and Range
Experiment Station
1960 Addison Street
P. O. Box 245
Berkeley, California 94701

We will be most happy to assist with any arrangements.

Sincerely yours,

Edwin Zaidlicz

Edwin Zaidlicz
State Director

cc:
✓ Gus Hornay
Director (330)

File
Please



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

IN REPLY REFER TO:
3: 1400-410.4.44

STATE OFFICE
316 NORTH 26TH STREET
BILLINGS, MONTANA 59101

SEP 2 1970

Mr. Wynn Freeman
Chief, Game Management Division
Montana Fish and Game Department
Helena, Montana 59601

Dear Wynn:

This letter will confirm the conversation between you and Rex Cleary concerning Gus Hormay's training session.

The session will be conducted on December 7, 8, and 9, in the Rimrock Room of the Northern Hotel in Billings. The times will be from 8:00 a.m. to 5:00 p.m. daily.

We will let you make room reservations for your personnel if that meets with your approval.

By October 1, we would appreciate your best estimate of the number of your personnel that will attend. Then by November 23, we would appreciate a list of the names so that name cards can be prepared in advance.

You are welcome to send as many personnel as you wish. Montana and Wyoming BLM personnel will also be in attendance.

Sincerely yours,

Edwin Zaidlicz
State Director

cc:
Gus Hormay ✓

File Please



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
State Office
316 North 26th Street
Billings, Montana 59101

IN REPLY REFER TO:

3: 1400-410.4.44

SEP 3 1970

Memorandum

To: State Director - Wyoming
From: State Director - Montana
Subject: Gus Hornay Training Session

In accordance with Information Memo 70-107, we will arrange the training session for December 7-9.

The training will be conducted in the Rimrock Room of the Northern Hotel in Billings. The time will be from 8 a.m. to 5 p.m. daily.

By October 1, we would appreciate your best estimate of the number of employees that will attend. We will reserve a block of rooms in the Northern Hotel if that meets with your approval.

By November 9, we would appreciate a list of attendees. Along with this list, please furnish the preferences for room accommodations as to single or double and choice of roommate. Also, the number of nights the rooms should be reserved.

Edwin Zaidlicz

cc:
Gus Hornay ✓

P. O. Box 245
Berkeley, Calif. 94701

September 4, 1970

Memorandum

To: Chief, Division of Range Management (330) Wash., D. C.
From: A. L. Hormay, Range Conservationist, Berkeley
Subject: Monthly Report, August 1970

Handwritten: I conducted the range training course in Reno, Nevada, August 10-12 as scheduled. About 121 people, mainly from BLM, attended. A list of the trainees is enclosed.

On August 13 together with representatives of the Carson City District, Nevada State Office, Nevada Department of Fish and Game and California Department of Fish and Game, I visited the Lassen-Washoe deer winter range area located approximately 20 miles northwest of Reno. The following men were on the trip: Carson City District - Ken Harrison, Bob Berg, Don Pomi; Nevada State Office - Jim Yoakum; Nevada Fish & Game - William Molini; California Fish & Game - Ken Conrad.

The range lies in Nevada and California. A major portion of the area is occupied by Peterson Mountain and a 20-mile long, narrow valley immediately to the west.

The key browse on the range for deer is bitterbrush. In some places it is in good condition and in others poor. The entire range is in poor to fair condition and in need of better management. Three BLM cattle allotments cover the area west of the Peterson Mt. backbone. These are the ones we looked over. Another 2 or 3 allotments lie east of Peterson Mt.

I suggested getting started with rest-rotation grazing management on one of the three west side allotments as soon as possible. I suggested a management formula for the area. The proposal was discussed by the group in the Carson City District Office the following morning, August 14.

The afternoon of the 14th the group visited the Jacks Valley deer winter range area some 10 miles south of Carson City. Rest-rotation grazing

management with cattle is planned for this range. Management facilities are about completed. In fact, two pastures were grazed this year. One of these pastures consists largely of a burn area that was seeded with bitterbrush, crested wheatgrass, alfalfa, and burnet about 3 years ago. This year's grazing looks good.

You may be interested in the enclosed news release on developments on the Boise Front deer winter range in Idaho.

Do you have any information yet on just when the Forest Service is going to release the rest-rotation grazing management publication?

A. L. Hornum

Enclosures

4112.16

Director (330)

September 30, 1970

State Director, Idaho

Gus Hormay Training Sessions

Attached are copies of the attendance rosters showing those who attended the Rest-Rotation Grazing Management Training Sessions sponsored by the Idaho Cattleman's Association in Challis on September 9 and in Salmon on September 10. These sessions were scheduled in Information Memo 70-107.

Attachments

/s/ WM. L. MATHEWS

✓cc: Gus Hormay w/attachments

Note: Also enclosed is a newspaper clipping regarding the Morgan Creek area which may be of interest to you.

Attendance Roster

Rest-Rotation Grazing Management

By A. L. "Gus" Hormay, Challis, Idaho, September 9, 1970 /

<u>Name</u>	<u>Location</u>	<u>Occupation or Agency</u>
1. Tom Koualicky	Stanley	U. S. Forest Service
2. Garth Baxter	Mackay	U. S. Forest Service
3. Golden Westergard	Challis	Rancher
4. LeeRoy Stephens	Challis	Rancher
5. Bill Davidson	Salmon	Idaho Fish and Game
6. James Whittin	May	Rancher
7. Doyle Luizinger	Challis	Rancher
8. Larry Nelson	Challis	Rancher
9. Earl Bradbury	Challis	Rancher
10. Bud Nelson	Challis	Rancher
11. Lester Bradbury	Challis	Rancher
12. Johnny Hammond	Challis	Rancher
13. Floyd E. Ewing	Salmon	BLM
14. Harold D. Sherrets	Salmon	BLM
15. Rex L. Christensen	Salmon	BLM
16. Timothy C. Fay	Salmon	BLM
17. Glen Hunt	Challis	SCS
18.. Grant Thorson	May	U. S. Forest Service
19. Tom Stinson	Challis	U. S. Forest Service
20. Delbert Hughes	Challis	Rancher
21. Allen Getty	Clayton	Rancher

22.	Tom Chivers	Challis	Rancher
23.	Norm Hack	Challis	U. S. Forest Service
24.	L. F. Bradbury	Challis	Rancher
25.	David Fulton	Mackay	Rancher
26.	John Chivers	Challis	Rancher
27.	Francis Smith	Mackay	Rancher
28.	Victor Johnson	Mackay	Rancher
29.	Harold Smith	Darlington	Rancher
30.	Bolen Uresti	Challis	Rancher
31.	Tom J. Ocamica	Boise	Rancher
32.	Syd Dowton	May	Rancher
33.	Sam Warren	Challis	Forest Service
34.	Micheal Talley	Challis	Forest Service
35.	Worth Boggeman	Challis	Rancher
36.	Jay Horton	Challis	Rancher
37.	Burl L. Hamilton	Challis	Forest Service
38.	Bill James	Stanley	Forest Service
39.	Grant Dobbs	Challis	Rancher
40.	J. J. Sanderson	Challis	Rancher
41.	Ron Wilson	Challis	Rancher
42.	Mark Stark	Challis	Rancher
43.	Sydney Dowton	May	Rancher
44.	George Whitworth	May	Rancher
45.	Frank Hartmann	Howe	Rancher
46.	Jack R. Hill	Challis	Rancher

47.	Dan Pence	Clayton	Forest Service
48.	Hugh Harper	Boise	BLM
49.	Glen Ford	Salmon	BLM
50.	Delbert Fallon	Boise	BLM

Ranching and Livestock	31
U. S. Forest Service	10
Soil Conservation Service	1
Bureau of Land Management	7
Fish & Game Department	<u>1</u>

50

Attendance Roster

Rest-Rotation Grazing Management

By A. L. "Gus" Hormay, Salmon, Idaho, September 10, 1970

	<u>Name</u>	<u>Location</u>	<u>Occupation or Agency</u>
1.	Steve Hawks	Salmon	BLM
2.	Lee Pattison	Salmon	BLM
3.	John Moore	Lemhi	Rancher
4.	A. M. Callaway	Lemhi	Livestock
5.	Robert W. Himes	Salmon	SCS
6.	Robert G. Steele	Salmon	BLM
7.	L. F. Bradbury	Challis	Rancher
8.	Tex Schmidt	Leadore	Rancher
9.	E. C. Bolander	Carmen	Rancher
10.	Harold McFarland	Carmen	Rancher
11.	Steve Mahaffey	Tendoy	Rancher
12.	Joe Mabey	Tendoy	Rancher
13.	Ray Rusk	Tendoy	Rancher
14.	G. Carl Udy	Leadore	Rancher
15.	Elizabeth Udy	Leadore	Rancher
16.	Jessie Engquist	Salmon	Rancher
17.	Albert Schults	Salmon	Rancher
18.	Doyle L. Mulkey	Salmon	Rancher
19.	Edger Elwards	Salmon	Rancher
20.	Mark L. Edwards	Salmon	Rancher
21.	Robert S. Carpenter	Leadore	U. S. Forest Service

22.	James B. Stroud	Leadore	U. S. Forest Service
23.	Jerry Hustead	Salmon	U. S. Forest Service
24.	Louis E. Beardall	Salmon	U. S. Forest Service
25.	William K. Jensen	North Fork	U. S. Forest Service
26.	F. Carl Pence	Cobalt	U. S. Forest Service
27.	Gene S. Jensen	Cobalt	U. S. Forest Service
28.	Charles B. Jones	Salmon	Student
29.	Ed Jones	Salmon	BLM
30.	Roger Taylor	Salmon	BLM
31.	Willard Scouter	Salmon	U. S. Forest Service
32.	Bill Davidson	Salmon	Idaho Fish & Game Dept.
33.	Hugh Harper	Boise	BLM
34.	Glen Ford	Salmon	BLM
35.	Delbert Fallon	Boise	BLM
36.	Stanley R. Miller	North Fork	U. S. Forest Service

Ranching & Livestock	16
U. S. Forest Service	9
Bureau of Land Management	8
Soil Conservation Service	1
Fish & Game Department	1
Student	<u>1</u>
	36

Hormay Rest Rotation Training Session

Albuquerque, New Mexico

September 28-30, 1970

Attendance

Name	Agency	Location	Room
1. John A. Rietz	Bureau of Land Management	Safford	406
2. Jerry P. Townsend	" "	Safford	406
3. Homer Byrd	" "	Safford	400
4. Bob Soule	" "	Safford	421
5. Harlen Smith	" "	Las Cruces	414
6. Monty Woody	" "	Albuquerque	--
7. Jack Norris	" "	Phoenix	415
8. Donnie Sparks	" "	Albuquerque	--
9. Myron H. Allen	" "	Phoenix	409
10. Terry Driver	" "	Phoenix	413
11. Glenn Martin	" "	Safford	400
12. Bob Calkins	" "	Albuquerque	--
13. Dave Jones	" "	Roswell	417
14. Robert Lawrence	" "	Las Cruces	416
15. Jack Albright	" "	Las Cruces	416
16. Howard S. Gebel, Jr.	" "	Roswell	411
17. Larry Powell	" "	Phoenix	307
18. John Keenan	" "	Phoenix	419
19. Arthur L. Burke	" "	Phoenix	419
20. Von Swain	" "	Phoenix	405
21. Bob Crockett	" "	Phoenix	413

Name	Agency	Location	Room
22. Mel Wilhelm	Bureau of Land Management	Safford	421
23. Jon Weddle	" "	Farmington	412
24. Ken Stinson	" "	Farmington	412
25. Gary A. McVicker	" "	Albuquerque	--
26. Ray F. Graham	" "	Albuquerque	--
27. Bill Barker	" "	Albuquerque	--
28. Richard Wright	" "	St. George	401
29. William D. McNally	" "	St. George	403
30. Strat Murdock	" "	St. George	403
31. Dearl Wallace	" "	Phoenix	415
32. Elwin Price	" "	Phoenix	407
33. Marvin Woodbury	" "	Arizona Strip	401
34. E. Dwain Glidewell	New Mexico State Land Office	Santa Fe	--
35. Levi D. Deike	Bureau of Land Management	Roswell	417
36. Bob Alexander	" "	Albuquerque	--
37. Ken Currey	" "	Roswell	427
38. Gerald Orr	" "	Roswell	427
39. Samuel R. Rowley	" "	Arizona Strip	405
40. James F. Kelly	" "	Santa Fe	--
41. Rex W. Hendryx	" "	Albuquerque	--
42. George Peternel	" "	Socorro	
43. Dave Kathman	" "	Socorro	
44. Paul D. Leonard	" "	Santa Fe	404
45. A. L. "Gus" Hormay	" "	Washington, D.C.	224

Hormay

IN REPLY REFER TO:



UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

State Office
Post Office Box No. 11505
Salt Lake City, Utah, 84111

4112.16
1400-410

September 30, 1970

Instruction Memo No. USO 70- 150
Expires 12/31/70

To: : District Managers, Utah
From: State Director, Utah
Subject: Rest Rotation Training Session

Arrangements for the Rest Rotation Training School to be held in Salt Lake City have been completed. The sessions will convene promptly at 8:00 a.m. Wednesday November 4, 1970, in the Imperial Room of the World Motor Hotel, 1900 South State Street.

My staff has contacted each of you in order to set up a roster of individuals who have not had the rest rotation training or who should be brought up-to-date on Gus' current material, particularly as it relates to grazing techniques with browse species. The attached list was developed from your suggestions. Rooming arrangements are also attached.

Since this will probably be the last training session that will be given by Gus Hormay in this area, I do not wish to overlook any individual who has not had this training and who is in a position where the knowledge will be applied. If I have overlooked such an individual or if for any other reason you desire to make any changes in the list of participants from your district please advise me as soon as possible.

Attachments

Distribution
WO-554
DSC-530

R.D. Nelson

Rest Rotation Grazing Training Session
Salt Lake City, Utah, Nov. 4-5-6, 1970

Salt Lake District

Larry Maxfield
Lowell Decker (R)
Mervin Miles
Grant Rogers (R)
Lloyd Carpenter
Conway Parry

Fillmore District

Vance Turner
Ervin Larsen
DeWayne Bayles
Don Burt

Cedar City

Gerald Nelson
Doug Melling
Burt Lowery
Gordon Staker (R)

Richfield District

Craig Zufelt
Dale Ross (R)
Vernon Davis

Monticello District

Dick Burch
Ken Moore
Carl Mahon
Reed Wilson
Josh Warburton (R)

Price District

Gary Hansen
Terral King (R)
Quinton Pickup
Doug Thurman

Vernal District

Jerry Huff
David Moore
Mark Bailey
Larry Oldroyd (R)

Kanab District

Darwin J. Snell
John Naylor
Bob Mitchell
Bill Lamb
Ed Sherick
Cliff Yardley

(R) indicates individual has had previous exposure to rest rotation training, but should participate for review and up-dating.

A block of rooms have been reserved for November 3-4-5, at the World Motor Hotel for Utah participants.

Double Rooms

Vance Turner John Mitchell
Ervin Larsen Ed Sherick

Dwayne Bayles Bill Lamb
Don Burt John Naylor

Gerald Nelson
Doug Melling

Burt Lowery Single Room
Gordon Staker

Craig Zufelt
Dale Ross Gus Hormay

Vernon Davis
Carl Mahon

Dick Burch Idaho personnel
Josh Warburton

Ken Moore Jim Gabetas
Reed Wilson Bob Brock

Gary Hansen Rod Harris
Terral King Dean Zeller

Quint Pickup Lou Martindale
Doug Thurman Bill McIlvain

Jerry Huff
Dave Moore

Mark Bailey
Larry Oldroyd

Darwin Snell
Cliff Yardley

Room rates are \$9.00 for single and \$14.00 for doubles

In the event that the above arrangements are not satisfactory, or if any participants will not be arriving on the night of November 3, please contact Division of RPM - (Leah Hottinger)



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
State Office
Post Office Box No. 11505
Salt Lake City, Utah 84111

IN REPLY REFER TO:

4112.16
1400-410

September 30, 1970

Memorandum

To: State Director, Idaho
From: State Director, Utah
Subject: Rest-Rotation Training - Salt Lake City

This will advise you that we can accommodate the six Burley District people who are interested in the rest-rotation training session to be held here November 4 and 5.

The sessions will be held at the World Motor Hotel, 1900 South State Street in the Imperial Room.

Information concerning motel accommodations will be sent directly to the district manager, Burley, Idaho.

R. D. Nelson

Form 1541-1
(May 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SHORT NOTE TRANSMITTAL

September 30, 1970

(Date)

TO : Gus Hormay
FROM : Nick Cozakos
SUBJECT: Rest-rotation grazing

Thought these articles might be of interest
to you.

Nick

Note: Return this form when action is completed or attach it to data requested

Rains Help In Test Of Range

LOGAN — "All signs say 'go' on rest-rotation grazing," declared Karl G. Parker, Extension range specialist, Utah State University.

He noted that weather conditions have favored good progress on this increasingly popular system for grazing management on rangelands. Rainfall has been heavy enough in most areas of Utah to promote adequate range plant growth for a full season of grazing.

GETTING FULL USE

Parker explained that getting full use of all the usable plants in all areas of a pasture is the aim of the first step in a standard four-year "rest-rotation grazing" system. In this step, all of the plants in the range — not just the more palatable "ice cream plants" — share the burden of grazing uniformly.

The second step involves a year of rest. It is designed to allow all the desirable plants to regain vigor and produce litter to protect the soil surface.

During the third year, the range is rested until the latter part of the season. It is not grazed until after the desirable range grasses have formed seeds. When the seeds are ripe, livestock are put on to graze. Their hooves punch the seeds into the soil and give them a good chance to germinate, thereby increasing the number of desirable plants in the range.

FOURTH AND FINAL

The fourth and final step in this system involves a full season of rest to permit seedling establishment. The new plants are allowed to get established and become mature enough so they can withstand grazing by livestock and wildlife.

Parker said, "If the weather conditions are poor and not conducive to germination of seed and establishment of new plants, more than one year of rest might be necessary. However, this year range men who have pastures in the last stage of the rest-rotation system are fortunate. In most localities we have had sufficient moisture for good seedling establishment."

"Check the new seedlings closely to determine whether or not they are anchored well enough and are mature enough to withstand grazing next spring," he advised.

Utah Farmer
October 1, 1970

Rest-Rotation Grazing lauded

"ALL signs say 'Go' on rest-rotation grazing," declared Karl G. Parker, Extension Range Specialist, Utah State University.

He noted that weather conditions have favored good progress on this increasingly popular system for grazing management on rangelands. Rainfall has been heavy enough in most areas of Utah to promote adequate range plant growth for a full season of grazing.

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The Final Step

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You can expect your UNPEL program to give you these benefits:

More forage—two to three times more yield than unfertilized grass.

Higher quality grass—with more protein, more total digestible nutrients and more palatability. Cows eat more, walk less and gain faster.

Faster Spring green-up—two to three weeks earlier for extra grazing.

Healthier, more vigorous grass—which is better able to crowd out weeds. And stronger root systems that enable plants to withstand hard winters.

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How Much Rain

This Month?

THE following tables show precipitation probabilities by amount and week for October for various climatic areas of Utah and neighboring areas of Nevada and Wyoming. Each table shows the probability of getting at least the specified amount of rain in the seven-day period beginning at the date given in the first column.

Per Cent
Probability

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ROUTING AND TRANSMITTAL SLIP

To: _____ Division or Branch _____ Date 9/30/70

- (1) Sus Hornay _____ Necessary action
- (2) _____ Approval
- (3) _____ Signature
- (4) _____ Prepare reply

Remarks: _____ Your comment and return

This is a slightly _____ Note and surname

different copy of the _____ Note and return

AMP I sent a few _____ Your information

weeks ago. Most of _____ See me

the change is in the _____ _____

licensing section & change _____ _____

of treatment. This one is _____ _____

Signed too.

Jim Lambert _____ Seattle Mtn. _____

(Name) (Office)