

MARK ALL PACKAGES AND PAPERS WITH CONTRACT AND/OR ORDER NUMBERS

1. DATE OF ORDER 1/4/80	2. CONTRACT NO. (if any)	3. ORDER NO. 61590-0025 (80)	PAGE 1 OF 1
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4. ISSUING OFFICE DEPARTMENT OF THE INTERIOR, U.S. FISH AND WILDLIFE SERVICE
 CMR PLANNING TEAM, CHAS. M. RUSSELL NWR, Airport Rd, P.O. Box 698, Lewistown MT 59457

5. ACCOUNTING AND APPROPRIATION DATA
 61590-1220-160-00

6. SHIP TO (Consignee and Address, ZIP Code) SAME AS BLOCK #4	VIA Best Way
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7 TO: CONTRACTOR (Name, Address, ZIP Code) A. L. Hormay 101 Arcadia Street San Francisco, California 94131	8. TYPE OF ORDER <input type="checkbox"/> (a) Purchase Reference your _____ Please furnish the following on the terms specified on both sides of this order and on the attached sheets, if any, including delivery as indicated. This purchase is negotiated under authority of 41 US 252 (c) (3) _____ <input type="checkbox"/> (b) Delivery Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.
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9. REQUISITION OFFICE CMR PLANNING (HINCKLEY)	10. REQUISITION NO./PURCHASE AUTHORITY
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11. F.O.B. POINT	12. GOVERNMENT B/L NO.	13. DELIVERY TO F.O.B. POINT ON OR BEFORE	14. DISCOUNT TERMS
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15. SCHEDULE *See reverse for rejections

Item No (a)	Supplies or Services (b)	Quantity Ordered (c)	Unit (d)	Unit Price (e)	Amount (f)	Quantity Accepted (g)
1.	A. Design of rest-rotation grazing systems for two allotments to best reach wildlife habitat objectives within 8-10 years. Finished product will include at least maps with legends and narratives, including stocking rates, schedule of use, necessary developments, and class of livestock by pasture. This will be done in the Fish and Wildlife Service (henceforth called Service) office on January 8, 9, and 10, 1980. The Service will provide maps, typing, duplication, office space, and information from soil survey, range survey, and wildlife habitat inventory.	3	da	\$200.00	\$ 600.00	
	B. Transportation (San Francisco-Lewistown MT & return), airplane fare \$288.00, car mileage \$3.60, parking airport \$17.50.				\$ 309.10	
	C. Subsistence, not to exceed \$35.00 for each full day	5	da	\$35.00	175.00	
NOTE: Above in accordance with Request for Quotation, PT-01, attached, and made a part of this order.						

16. CLASSIFICATION: <input checked="" type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> OTHER THAN SMALL BUSINESS <input type="checkbox"/> MINORITY BUSINESS ENTERPRISE	15. (h) Total from continuation pages
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SEE BILLING INSTRUCTIONS ON REVERSE	17. SHIPPING POINT	18. GROSS SHIPPING WEIGHT	19. INVOICE NO.	15. (i) GRAND TOTAL
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20. MAIL INVOICE TO (Include ZIP Code) BLOCK # 4 SEND ALL COPIES	\$1,084.10	15. (i) GRAND TOTAL
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21. UNITED STATES OF AMERICA BY (Signature) <i>Dan K. Hinkley</i>	22. NAME (Typed) DAN K. HINCKLEY, TEAM LEADER TITLE: CONTRACTING/ORDERING OFFICER
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ORIGINAL

A. L. HORMAY

101 Arcadia Street
San Francisco, California 94131

January 10, 1980

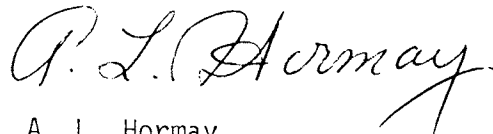
Mr. Dan K. Hinckley
CMR Planning Team
U.S. Fish and Wildlife Service
Department of Interior
Charles M. Russell National
Wildlife Refuge
P.O. Box 698
Lewistown, Montana 59457

Dear Dan:

Enclosed are my suggestions on rest-rotation grazing systems for the Nichols Coulee and Telegraph Creek allotments and other subjects enumerated in your request of December 20, 1979.

Please refer to U.S. Fish and Wildlife Service and Bureau of Land Management files for description of the allotments including maps, management objectives, and history of management to date.

Sincerely,



A. L. Hormay
Range Conservationist
Consultant (Ret)

Enclosure

REST-ROTATION

First, what is rest-rotation grazing and what is it designed to accomplish? It is a type of grazing that is designed specifically to promote the growth of vegetation under livestock grazing use. This is its sole purpose and is accomplished through periodic resting of the vegetation from use so plants can meet their growth requirements.

Rest is provided to:

1. Allow plants opportunity to make and store food and thus maintain vigor and normal growth capacity
2. Allow time for seeds to ripen
3. Allow time for reproduction to establish.

These treatments are applied in the order listed after but one season of grazing during the green period. The amount of rest needed depends on the growth requirements of the plants on the particular range and the season of grazing.

A minimum of two years of resting in succession are needed to restore plant vigor following one year of use during the green period.

One year of rest is sufficient for establishment of reproduction.

Grazing together with these grazing treatments results in vegetation improvement. The test of whether rest-rotation grazing is working or not is whether or not the vegetation is improved. This is the sole criterion.

A.L. Hormay
Jan 8, 1980

Rest-rotation grazing relates to livestock and wildlife production and other renewable resource values only insofar as it promotes the growth of vegetation which is the basis for these products and values.

To practice rest-rotation grazing, the range is divided into pastures. Some of these are grazed, and others rested each year. With such a system, a substantial portion of the range is not grazed each year so is available for other uses, including wildlife. Further provision for other uses can be made by including more rest in the grazing formula which means more pastures, by regulating season-of-grazing and/or stocking rate and by fencing off areas within pastures.

Desirable vegetation and the overall productive capacity of the range can be increased more rapidly with rest-rotation than with full protection from grazing. With this system, livestock can be used to trample seed into the soil, thereby promoting more vegetation and a better soil cover; to remove stifling old growth on plants, thus increasing plant vigor and production of usable herbage; to stimulate stooling and adventitious growth and higher quality herbage and to reduce fire hazard.

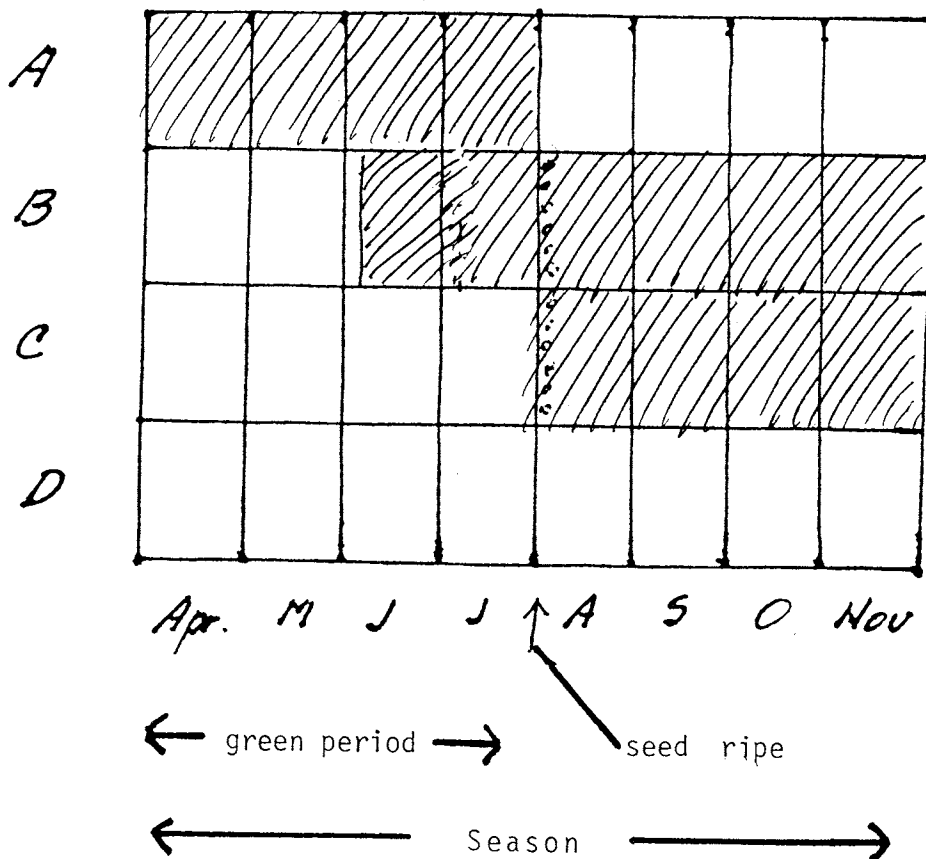
Please refer to my publication "Principles of Rest-Rotation Grazing and Multiple-Use Land Management", (TT-4) (2200), U. S. Department of Agriculture, Forest Service, September 1970, for more information on rest-rotation grazing.

A.L. Hormay
Jan 8, 1980

NICHOLS COULEE ALLOTMENT
(Rest-rotation Grazing and Vegetation)

This allotment has been under what has been called a four-pasture rest-rotation grazing system for about twelve years. It fails to qualify as a rest-rotation grazing system because the grazing management formula developed for the allotment does not provide adequately for meeting plant growth requirements.

The grazing formula is diagrammed below (figure 1):



A.L. Hormay
Jan 8, 1980

This formula provides for grazing each pasture two years in succession during the green period, treatments A and B. As a result, anticipated improvement in the vegetation has not been obtained. Not enough rest is provided in treatments C and D to compensate for the harmful effects of treatments A and B.

The deficiency in the formula is corrected by ending use in treatment A at the end of May just as rapid spring growth gets underway. Growth will develop almost normally thereafter and plants will have an opportunity to make and store a normal supply of food reserves. With this adjustment, one season of grazing during the green period (treatment B) will be followed by three seasons of resting, which is more than enough to maintain plants in vigorous condition and the plant cover improving.

WILDLIFE

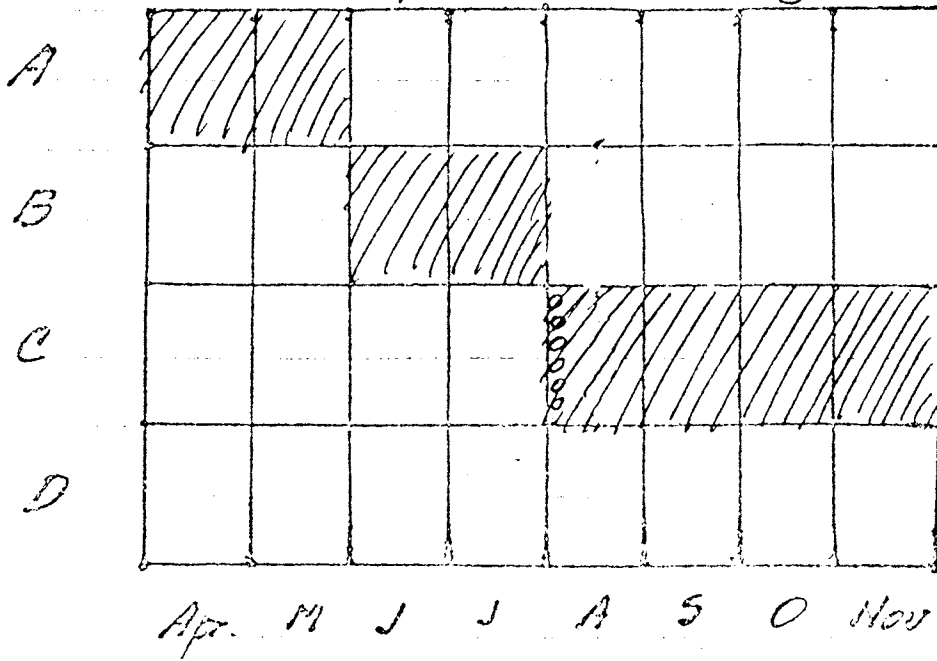
Apparently no provision was made for wildlife in the original grazing formula beyond what is automatically provided by the formula. A substantial portion of the allotment is not grazed each year so is available for other uses including wildlife. (See figure 1.)

With the suggested adjustment in treatment A, vegetation in two fields, half the allotment, remain ungrazed at the end of the grazing season. This residual growth which will be found in two pastures is important the following year in springtime to birds and other wildlife.

A.L. Hormay
Jan 8, 1980

Further provision for wildlife can be made by terminating grazing under treatment B on August 1 or soon thereafter.

With these adjustments, the grazing formula would read as shown below (figure 2):



There would not be any livestock in three pastures out of four at any one time during the season.

Further provision for wildlife can be made by adjusting season-of-use and stocking and by fencing areas within pastures.

A.L. Hormay
Jan 8, 1980

STOCKING RATE

Determination of stocking rate is the responsibility of the land manager. It always poses a problem.

Any figure obtained from a range survey or other source is but an estimate and is regarded as a starting figure to be adjusted later on the basis of results.

I suggest starting grazing with a number of animals presently grazed on the range or any number less than that the livestock operator wishes and make adjustments in due time on the basis of results with livestock, wildlife, or other value.

In a four-pasture system, monitor results for at least four years to test the grazing capacity of each of the fields for livestock.

TELEGRAPH CREEK ALLOTMENT

I suggest establishing one four-pasture rest-rotation grazing on lands grazed by the Weiderrick Brothers encompassing BLM, State, CMR, UL Bend and private lands. The Weiderrick operation is similar to Nichols Coulee. I suggest using the same four-pasture grazing formula as the one used on Nichols Coulee.

A.L. Hormay
Jan 8, 1980

U.S. Fish & Wildlife Service CTR Lemistown, Montana 1980 Consulting

Prepared By: _____
 Approved By: _____
 Initials: _____
 Date: _____

Date	Place activity	Meals	Lodge	Plane fare	Plane Parking	Car mileage	Days	Services	Total Amt billed
							No	\$	\$
Jan 6 1980	SF → Helena	—	20.00	288.00	—	1.80		200.00	
" 7	Helena → Lemistown	36.60	20.00	—	—	—	1	200.00	
" 8	Lemistown	15.60	20.00	—	—	—	1	200.00	
" 9	"	2.60	20.00	—	—	—	1	200.00	
" 10	" → Helena	11.50	20.00	—	—	—	1	200.00	
" 11	Helena → SF	3.75	—	—	21.00	1.80		600.00	1081.10
Total		69.55	60.00	288.00	21.00	3.60		600.00	

AUGUST L. HORMAY
RANGE MANAGEMENT CONSULTANT

101 ACADIA STREET • SAN FRANCISCO, CALIFORNIA 94131

January 14, 1980

Invoice

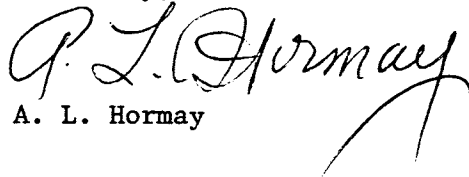
For services January 7 - 11, 1980 per Order No. 61590-0025
(80) attached

- A. Designed rest-rotation grazing systems for The Nichols
Coulee and Telegraph Creek cattle allotments and
provided narratives of the systems and other infor-
mation called for in the order.

Explained the grazing systems and benefits to
wildlife to personnel of the Fish and Wildlife
Service and other concerned federal, state and
private interests on January 10, 1980

	3 days	\$200.00	\$ 600.00
B.	Transportation (San Francisco, CA - Lewistown MT and return)		\$ 309.10
C.	Subsistence	5 days	175.00
D.		Total	<hr/> \$1084.10

Sincerely,


A. L. Hormay

YOUR TYPE
Word Processing Specialists

2140 Shattuck Avenue, Suite 202
Berkeley, California 94704
415/841-1716

Jan 15/80

INVOICE

To: August L. Hormay
101 Acadia Street
San Francisco, CA 94131

January 14, 1980

Date	Description	Amount
1-14-80	Typing services rendered	\$5.00

Item (1)

Paid Jan. 15/80 U.S. FEELS

*Nichols Coulee
Telegraph Ck*

108410