

13 April 1977

Mr. Richard Myers
1420 Hawthorne, Apt. E
Moscow, Idaho 83843

Dear Richard:

It's a pleasure to inform you that your proposal entitled "Daily (24 Hour) Movement Patterns and Food Preferences of Radio-collared Bighorn Sheep on their Summer Range, Bordering the Middle Fork of the Salmon River, Idaho" has been accepted by the Wilderness Research Center. We hope you can begin on this project at least by early June. We will expect you to register for 3 credits of special problems, FWR 499, for the summer. The project report will be due in polished draft form five weeks after the start of the fall semester. We then expect the reports will be ready for publication by the end of fall semester.

Your \$600 honorarium will be paid upon completion of the summer field work and in time for fall registration. Arrangements for food, lodging or transportation should be made through your project advisor and Mr. Ken Sowles.

Congratulations on a well-written proposal.

Sincerely,

John H. Ehrenreich
Dean

JHE:bmk

Comments on Richard Myers' proposal

1. Does Idaho Fish & Game employ him?
If so do we award an internship to a person who is being paid from another source?
2. An ethogram is an inventory of behavioral patterns, or more specifically an inventory of fixed action patterns. Is this really the intent?
3. Unless one can get extremely ^{close}, such as standing beside an animal, it is almost impossible to detect what is being selected from the ground layer of vegetation.
4. What about facilities for analyzing fecal pellets? Is he going to use our lab and if so have arrangements been made?

This sounds like a good study. It is not nearly as clear cut as the proposal implies. A band of sheep can cross a canyon in minutes that will take the researcher hours to negotiate.

E. D. Ables

1101 East Third Street
Moscow, ID 83843
February 4, 1977

The Wilderness Committee
College of Forestry
University of Idaho
Moscow, ID 83843

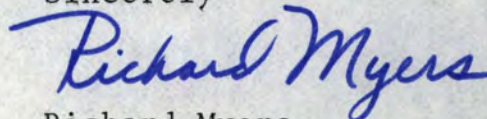
Committee Members:

I am submitting this proposal for the Wilderness Internship program based out at the Taylor Ranch Field Station in the Idaho Primitive Area. This proposal is for summer study (1977) on Rocky Mountain bighorn sheep in the Idaho Primitive Area, generally east of the Middle Fork of the Salmon River, depending on where the sheep migrate for the summer.

Presently, William O. Hickey, Game Research Biologist for Idaho Fish and Game Department, is conducting a year-round study on the ecology of bighorn sheep herds along the Middle Fork of the Salmon River and other areas. He has marked and radio-collared several of the sheep and is collecting data on their daily (24 hour) movements and food habits. My summer project will be coordinated with Mr. Hickey and his study. Mr. Hickey was contacted by Dr. James Peek in September of this year, and Mr. Hickey said that he could use someone to follow some particular animals during the summer of 1977 and record their daily (24 hour) movement patterns. Also, Dr. Winifred Kessler will advise me during this study on collecting and analyzing data on food habits.

I hope this proposal will be adequate for summer study suited to the internship program and that it will elicit a valuable learning experience.

Sincerely



Richard Myers

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Proposal submitted to the University of Idaho for summer
study out of the Taylor Ranch Field Station
during the summer of 1977

DAILY (24 HOUR) MOVEMENT PATTERNS AND FOOD PREFERENCES OF
RADIO-COLLARED BIGHORN SHEEP ON THEIR SUMMER RANGE,
BORDERING THE MIDDLE FORK OF THE
SALMON RIVER, IDAHO

by

Rick Myers

Gilbert bond

25% cotton

1 February 1977

INTRODUCTION

There is at present a great lack of knowledge and understanding of daily (24 hour) movement patterns and food habits of the population of bighorn sheep (Ovis canadensis) along the Middle Fork of the Salmon River and adjacent areas on their summer range. Hickey (1971, 1973, 1974, 1975) has reported on late fall, winter, and early spring activities. Data on daily (24 hour) summer movement patterns and summer food habits are lacking. Inadequate winter range appears to be a limiting factor in bighorn sheep populations throughout the country. Buechner (1960) suggests that summer forage utilization may be a key factor to winter survival.

Bighorn sheep are very sensitive to habitat changes caused by mining, logging, livestock grazing, and competition from other ungulates (Bear, 1972; Blood, 1963; Buechner, 1960; McCann, 1956; Smith, 1954). The expansion of civilization into bighorn range has resulted in a scarcity of suitable habitat. Relatively undisturbed areas within the Idaho Primitive Area still support stable populations of bighorn sheep (Hickey, 1975). This area therefore provides excellent opportunity to study the ecology of bighorn sheep in a comparatively undisturbed environment. Such studies are essential to the understanding and management of these animals.

The objective of the study is to clarify the habitat requirements of a population of bighorn sheep on a year-round basis. Observations will be restricted to those months for which information is presently lacking, June-August. Data pertaining to daily (24 hour) movement patterns and food habits will be collected on a particular sheep or band of sheep.

This study will be coordinated with William O. Hickey, Game Research Biologist of the Idaho Fish and Game Department, and Jim Bennett, a graduate assistant working on bighorn sheep at the Taylor Ranch Field Station. Presently, Mr. Hickey is conducting a year-round project concerned with the ecology of bighorn sheep along the Middle Fork of the Salmon River and adjacent creeks. Also at present, Jim Bennett is terminating a 24-month observation on bighorn sheep dealing with population structure, herd productivity, seasonal movement and migration patterns, social organization, reproductive behavior, and some data on food habits. The study dealt with sheep wintering along Big Creek and near the Taylor Ranch Field Station.

Mr. Hickey was contacted by Dr. James Peek in September in regards to the study, and Mr. Hickey stated he could use someone to follow radio-collared bighorn sheep, generally east of the Middle Fork of the Salmon River, depending on where the sheep migrate for the summer, and collect summer range data. This summer study will try to

tie in any results that may be applicable to what Jim Bennett has observed. Dr. Winifred Kessler will also advise me during this study on collecting and analyzing data on food habits.

STUDY AREA

The study will be conducted within the Idaho Primitive Area along the Middle Fork of the Salmon River and its tributaries, excluding Big Creek. Specific drainages, generally east of the Middle Fork, will be used, depending on where the marked sheep migrate for the summer. The area presently supports a stable population of about 700 bighorn sheep (Hickey, 1975) which select specific habitats. Preferred habitat characteristics include rocky and precipitous terrain which is relatively inaccessible to man, predators, domestic stock, and competing native ungulates (Erickson, 1972; Geist, 1971; Pallister, 1974; Smith, 1954). These areas provide desired grass, forb, and browse species. Desired plant communities occur in a patchy distribution throughout the study area, and the sheep are selective for these sites.

The study will be based at the Taylor Ranch Field Station, a University of Idaho facility located about 5 miles west of the Middle Fork of the Salmon River. A series of camps, extending from the Mormon Ranch to Waterfall Creek, will also be used.

METHODS

Daily (24 hour) movement patterns will be investigated by means of radio telemetry as described by Hickey (1975). This method is the most accurate and direct means of obtaining data on movement patterns and environmental requirements of free-roaming animals (Tester and Siniff, 1965). The use of this method was demonstrated by Morgan (1970) in studying the Morgan Creek and East Fork of the Salmon River bighorn herds, and also by Jim Bennett (Taylor Ranch Field Station, 1976). Radio-collared bighorn sheep presently exist in the study area (Hickey, 1975). Individual sheep will be followed on foot for 4- to 5-day periods, or longer if need be. The particular sheep to be followed will be determined by William O. Hickey. He has already collared some and plans to collar more. Either a ram band or ewe-lamb band will be followed. Daily activities, 24 hour movement patterns, and habitat preferences will be described and recorded by means of ethograms. Locations and movements will be recorded on aerial photographs or topographical maps.

To evaluate feeding preferences, fecal pellets will be collected and analyzed by micro-histological technique as described by Cavender and Hansen (1970). Todd and Hansen (1973) described the microscopic analysis of fecal samples from bighorn sheep as a very useful index to food habits. Results from this procedure will be compared with direct

observations of feeding behavior observed on their summer range. When observing feeding behavior, plants that are utilized will be collected and identified.

The equipment necessary for this project will be radio telemetry equipment (supplied by the Idaho Fish and Game Department), a spotting scope, binoculars, topographical maps (I will furnish these), and any other general backpacking and camping equipment which I will furnish myself.

Gilbert bond
25% cotton

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