

Research Prospectus: Evaluation of elk and moose habitat use patterns and relationships to forest management and wilderness in central Idaho.

Submitted to: Governor Evans of Idaho
Pacific Northwest Regional Commission

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Roadless areas of central Idaho, including the Gospel-Hump region southwest of Grangeville, contain highly valuable timber and wildlife populations. As disposition of these areas into wilderness or for multiple use management is made, the status and future of wildlife poses an ever-increasing source of concern to many Idahoans. While central Idaho contains a wealth and diversity of wildlife, specific concern is for the elk and moose. One rationale for this is that these species are wide-ranging and require a large diversity of habitats: if we provide for them, we maintain the diversity needed to ensure habitat for other wildlife.

Regardless of how the lands are allocated, information on elk and moose in the region is scarce, and seriously needed. Whether these species will live in wilderness or in areas where timber is to be cut, we still must consider their habitat requirements. In wilderness, knowledge of the natural regulation of numbers as it relates to natural vegetation change and to climate poses the problem. In management zones, knowledge

of responses to timber management and means to use the axe and saw in ways which ensure retention of suitable habitat are at issue.

Perhaps the major lesson to be learned from the various investigations of elk-logging relationships in the northwest is that responses vary significantly between areas and vegetation types. No detailed investigations into elk habitat use in the complex of vegetative types which exist in central Idaho have been made. A much-needed by-product of these kinds of studies is identification of migration patterns and travel routes. Habitat use and migration patterns evolve within an area through a combination of the history and traditions established within a population as influenced by vegetation, terrain and human activity. These patterns become relatively fixed and change slowly in response to the factors which influence them. Changes in habitat use may serve as an indication of long-term population trends. A knowledge of current patterns is important if we are to judge effects of management on populations, or plan to integrate habitat management with timber management.

Opportunities to create, restore, and enhance winter range through timber management pose another area where basic research is needed. While the central Idaho elk herds originally proliferated on the large shrub fields originating after the forest fires of 40 to 60 years ago, we cannot expect such occurrences in the future. But we can certainly seek means to use the tools of timber management, including the saw and prescribed burning, to provide winter range. While a data base for restoring shrub fields through spring burning is

available, no evaluations of timber harvesting to create shrub or grass winter ranges in the region have been made. The problem resolves down to initially identifying the habitat requirement in terms of quantity of cover and forage and its interspersion, and then working cooperatively with the silviculturist to plan means to reproduce this requirement on the ground. Experience elsewhere demonstrates that wildlife and timber interests both benefit from such activities.

Responses of moose to timber management in the northwestern U.S. are virtually unknown. Moose in central Idaho generally winter at higher elevations in deeper snows than do elk, and are often associated with mature conifer stands. At the same time, preferred browse such as willow grows best in openings, so some optimal combination of cover and forage may be identified and perpetuated through judicious timber management.

The problem of predicting long-term trends of elk and moose in central Idaho wilderness also should be addressed through basic research. Wilderness areas are very often designated as such because of the wildlife resource, and still we witness fluctuations in populations in the absence of habitat manipulation. A basic rationale for exploitation through harvest of big game in wilderness is needed. Such a rationale should be based on a firm understanding of the basic ecology of each species as related to vegetation trends and principles of wilderness management.

This proposed research will be aimed at initially defining the habitat use patterns of elk and moose within the Gospel-Hump

region. Subsequently, these patterns will be used to predict responses to various timber management activities, or to natural vegetation change. Finally, a series of integrated timber-wildlife management plans will be developed which should serve to retain suitable habitat while maintaining a timber harvest. Long-term population trends in wilderness, and a rationale for ungulate management in such areas will be provided.

A minimum period of 3 years field work and 1 year for report preparation should be planned for.

Research Objectives

1. Determine year-long habitat use patterns of moose and elk on ponderosa pine, Douglas fir, and grand fir forest types.
2. Determine use patterns by big game species of representative areas in each of the above types which are being logged and are in various stages of regeneration.
3. Provide guidelines to land and wildlife managers on responses to be expected from moose and elk to various types of logging and forest regeneration activities in the above forest types.
4. Provide recommendations for improvement of moose and elk habitat using timber harvest and associated activities in the above forest types.
5. Determine factors afflicting long-term population trends of moose and elk in non-managed areas.

PROPOSED BUDGET (One Year Only)

SALARIES

Principal Investigator, 3 months	\$ 6,500
Research Associate	12,000
Graduate Assistant	4,500
Benefits	<u>3,320</u>
Subtotal	\$26,320

CAPTIAL OUTLAY

Radiotelemetry Receivers 2 @ \$800	1,600
Rustrak Recorders 3 @ \$400	1,200
Radia collars 20 @ \$80	1,600
Calculator	<u>700</u>
Subtotal	\$ 5,100

OPERATING EXPENSES

Airplane Rental 200 hours @ \$50	\$10,000
Helicopter Rental 20 hours @ \$120	2,400
Vehicle Rental 30,000 miles @ 16¢	4,800
Subsistence 150 man-days @ \$5	750
Miscellaneous Supplies	1,000
Computer	<u>500</u>
Subtotal	\$19,450

IRREGULAR HELP

Two Field Assistants, 6 months @ \$600/month	\$ 7,200
Benefits	<u>580</u>
Subtotal	\$ 7,780

UNIVERSITY OVERHEAD (24.7 percent of all but C. O.)	\$13,200
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TOTAL EXPENSES	\$71,850
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