

THE PROBABLE EFFECTS OF
THE ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT
ON DALL SHEEP MANAGEMENT IN ALASKA

W.E. Heimer,
Alaska Department of Fish and Game,
1300 College Road,
Fairbanks, Alaska, 99701.

INTRODUCTION

In 1867, the United States of America purchased Alaska from Russia. The land area purchased at that time was the same as today, 370 million acres. Alaska was then held as a territorial possession until 1959 when it was granted statehood. Under the terms of the Statehood Act, 104.5 million acres were to be granted to the State of Alaska with the balance remaining in Federal ownership. Of this 267 million acres of Federal land, 73 million acres were classified as National Parks, Monuments, Wildlife Refuges, National Forests, and a Petroleum Reserve. The Federal lands not specifically classified in this manner were administered by the Bureau of Land Management. At this time, B.L.M. had no organic act, and procedures were dictated by a "no management" or land disposal philosophy. Almost any human activity was permitted. The scope of human activities ranged from "living off the land" by hunting, fishing, and trapping, through recreational hunting, camping, hiking, logging, and both large and small scale mining.

In 1968, a vast petroleum field was discovered on the North Slope of Alaska at Prudhoe Bay. Prior to this discovery, the State of Alaska had been slowly selecting the 104.5 million acres to which it was entitled under the Alaska Statehood Act. Also, Alaska's Native peoples had made various claims based on their aboriginal rights and needs pursuant to continuing a "subsistence" lifestyle. The discovery of the Prudhoe Bay oil field changed the pattern of land claim settlements. The Natives saw that the oil would have to be transported to market, and that this could not happen until their aboriginal claims were settled. Consequently, they greatly expanded their claims, and filed them formally. When this happened, the Secretary of the Interior placed a "land freeze" on all Federal lands in Alaska. This meant there could be only limited land selection by the State of Alaska and virtually no disposition of Federal land until the Alaska Native Land Claims were settled. Hence, no pipeline could be built.

Given the necessity of transporting Prudhoe Bay oil to market, the so-called "energy crisis" which arose about that time and the hard winters in the midwestern United States, the Congress was readily convinced by the Native lobby, the oil lobby, the Alaska development lobby, and cold constituents throughout the country to make a rapid, generous settlement of the Alaska Native claims. The result was the passage of the Alaska Native Claims Settlement Act (ANCSA) on December 18th of 1971.

Roughly the terms of ANCSA were: (1) The Native peoples of Alaska were to receive \$462,500,000 from the Federal government and \$500,000,000 from the State of Alaska to be generated by leasing or production of leasable minerals (e.g. oil); (2) The Native peoples were to be granted title to 44,000,000 acres of land; (3) The State of Alaska was to be allowed to complete selection of its 104.5 million acres; (4) The Secretary of the Interior was directed to withdraw up to 80 million acres of the approximately 227 million remaining acres of Federal land for inclusion in the National Park, National Forest, Wildlife Refuge, and Wild and Scenic River systems (the "Four Systems"). In 1973, the Secretary of Interior made recommendations to Congress fulfilling this directive. Congress was to act on these recommendations within five years, that is by December 1978. Obviously, the Secretary of the Interior had little experience and expertise in deciding which Alaska Federal lands should be placed in which system of land management. Consequently, his recommendations reflected input by the Federal Alaska Planning team as well as many conservation and environmental groups. These recommendations represented long-term goals which had been defined for years by the National Park Service and the Federal Refuge System as well as the groups advising the Secretary. These groups also influenced the Secretary to expand on the 80 million acres stipulated in the ANCSA by adding areas of "ecological concern" around the lands designated for classification into the "Four Systems." These lands, an additional 45 million acres, were designated as "Public Interest" lands, and their inclusion was justified by a stated need for "ecosystem management." This was the situation at the end of 1973.

The lack of Congressional action upon the recommendations offered by the Secretary of the Interior in 1973 began to concern the conservation and environmentally oriented groups which had supplied the recommendations to the Secretary. As a result, several of these groups formed an umbrella group called the Alaska Coalition in April of 1976. The goals of the Alaska Coalition were initially the protection of wilderness, wildlife habitat and the subsistence lifestyle (Matz, pers. comm.). The operational plan of the Coalition was to write a bill detailing land classifications consistent with their views and have it submitted in Congress by a sympathetic legislator.

George Matz, an executive board member, said that the Coalition initially viewed the entire National Interest Lands question as one in which all user groups would co-operate to achieve mutual goals. That is, the Coalition envisioned that subsistence users, recreational hunters, and nonconsumptive wilderness users would work together for habitat preservation, a goal the Coalition construed to be in the best interests of all concerned. Matz has indicated (pers. comm.) that the Coalition approached all three groups for recommendations. The subsistence users, rural Alaskans most of which are Native, were very co-operative because they saw in this legislation a final opportunity to gain legal recognition of their subsistence lifestyle. Also, the legislation appears to be a means of gaining exclusive unregulated use of publicly-owned fish and game resources. This perception probably resulted from their experience with the Marine Mammal Protection Act under which the Federal

government preempted control of marine mammal management from the State of Alaska which had enforced a conservative set of regulations. Under Federal control Natives were allowed exclusive and virtually unregulated use of marine mammals.

Another group, the nonconsumptive users (particularly the Park Service), eagerly co-operated with the Alaska Coalition. They provided data with which to justify the inclusion of much Alaska land within the National Park System.

According to Mr. Matz, the third user group, recreational or sport hunters, was contacted. Local sportsmen's clubs were invited to participate, but the response was negative. Generally, sportsmen viewed the Alaska Coalition as a group opposed to recreational hunting. This impression probably resulted from the participation of several members of the Alaska Coalition in various lawsuits related to wolf control programs by the Alaska Department of Fish and Game and their support for the Marine Mammal Protection Act. These activities were viewed by sportsmen as attempts to preempt or interfere with State management of resident wildlife species. Mr. Matz has stated this inference is contrary to the overall goals of the Alaska Coalition which favors State management of resident species if it acceptably meets the Coalition's goals.

Sportsmen, unlike the others providing input for the purposes of writing the land classification bill, did not see that they had anything to gain from the association. On the contrary, it appeared they had a good deal to lose. First, they viewed the Alaska Coalition as an anti-hunting group; secondly, they seemed unaware that despite almost 20 years of "traditional" use of the Federally-owned lands, these lands were the Federal government's to do with as it wished. Apparently, sportsmen believed that because they live in Alaska and have a history of using the land in question, their views should carry more weight than those of environmentalists, most of whom reside in the contiguous 48 states.

Partly because of the rejection of their initial invitation to hunters to participate and partly because of the anti-sport hunting bias of many of the members of the Alaska Coalition, the Coalition made no effort to include the needs of the recreational hunters in drafting its bill (HR 39), the Alaska National Interest Lands Conservation Act. Also, it should be understood that the Alaska Coalition favored the Park Service among the "Four Systems" because it had the most protective policy of land management, i.e. no hunting and no economic development. The Coalition did not view the State of Alaska as a good steward of wildlife habitat because of the developmental stance often endorsed by the State. The Federal Refuge system was the second choice because, even though it allows recreational hunting, it exists for the protection of wildlife habitat. The Forest Service was third and last choice because of its "unacceptable environmental record" in timber sales. Consequently, the National Park Service, because of its co-operation with the Alaska Coalition, its long-standing efforts to acquire more Alaska land, and the fact that it has the most restrictive policy on develop-

ment and hunting, was nominated as the major recipient of lands when the Alaska Coalition wrote the Alaska National Interest Lands Conservation Act. This bill was subsequently introduced in the House of Representatives by Senator Morris Udall of Arizona and titled House Resolution 39. This bill is currently being debated in committee, and may be changed somewhat, but it seems certain that many of the recommendations of the Alaska Coalition are going to become law.

The influence of the National Park Service in the authorship of this bill is particularly important to Dall sheep and their management in Alaska. Because of the attractiveness of mountains to the Park Service, as well as for Dall Sheep, the Park Service may eventually control about 15 per cent of Alaska's land and more than half of Alaska's Dall sheep. In view of the National Park Service's policy and philosophy regarding hunting, and the "instant wilderness" designations in HR 39, it appears that more than half of Alaska's Dall sheep will become unavailable to hunters when the legislation is passed. The purpose of this paper is to detail traditional use patterns by Dall sheep hunters and to predict the impact of the impending land classification changes on Dall sheep hunting, management and research in Alaska. Future management options will also be discussed.

MATERIALS AND METHODS

Several assumptions are necessary in predicting the effect of the changes in land classifications. They are listed below:

1. The final boundaries for proposed additions to the National Park Service and Federal Refuge System will be drawn as a compromise between the Udall bill (HR 39) and the position taken by Alaska Governor Jay Hammond, Senator Ted Stevens, and Congressman Don Young. I have arbitrarily assigned such boundaries for purposes of this paper. An unanswered question is whether there will be an appreciable sheep harvest in the Wrangells-Saint Elias National Park/Preserve. Preserves are open to recreational hunting and mineral exploration. For purposes of simplicity I have assumed there will not be a significant opportunity to hunt Dall sheep in this area. This assumption follows the boundary lines of the original House Resolution. A committee substitute offered in January 1978 would greatly ameliorate the reductions expected. It is currently impossible to predict the outcome with any certainty. Murphy and Dean (1978) deal with these possibilities.

2. Lands entering the Federal Wildlife Refuge System will continue to be open to hunting as they have been in the past.

3. Hunting will not be allowed in National Parks and Monuments but will be allowed in Preserves.

4. Wilderness area management will continue to allow traditional motorized access.

5. Hunter composition by residency, distribution and intensity for

the year 1976 was typical of traditional Dall sheep hunter patterns. There has been a small year-to-year variation in hunting pressure among mountain ranges and habitats, but 1976, being the most recent year for which reliable data are available, will be used. There is little chance that significant changes will result even if this assumption is not correct.

Levels of harvest, hunter use and the cost in dollars were determined by tabulation of information furnished on hunter report cards required by the Alaska Department of Fish and Game. In 1976, there were 497 non-resident sheep hunters in Alaska. The cost of a non-resident license was \$60 and a Dall sheep tag was \$250. This produced a license and tag sale of \$154,000 which, when matched by Federal funds under terms of the Pittman-Robertson Act, provided the Department of Fish and Game \$616,000 for management purposes in Alaska. A non-resident Dall sheep hunter usually spends about \$250 per day hunting, and most guides book 10-day hunts. Hence, non-resident sheep hunters pay approximately \$1,240,000 per year to guides for hunting sheep. In 1976, there were 2,667 resident sheep hunters who averaged 5 days per hunt. A conservative estimate of the cost of resident sheep hunting is \$60 per day; therefore, residents spent about \$800,000 on sheep hunting. Of course, each of these residents purchased a \$12 license for a total license sale of \$32,000, making possible an additional \$128,000 of Pittman-Robertson money to be spent in Alaska. Also, Alaska Department of Fish and Game estimates of the number of sheep processed into trophy mounts in Alaska is about 500 rams per year. At a price of \$300 per head this comes to another \$150,000 generated by recreational hunting of Dall sheep each year. Adding these figures gives the following:

Non-resident license and tag fees plus potential matching Pittman-Robertson funds	=	\$ 616,000
Resident license fees plus potential P.R. funds	=	128,000
Money paid to guides by non-resident clients	=	1,240,000
Money spent by resident Alaskans hunting sheep	=	800,000
Money spent on taxidermy of sheep in Alaska	=	<u>150,000</u>
Total money spent in Alaska on Dall sheep hunting	=	\$2,934,000

Dall sheep hunting in Alaska is a \$3,000,000 per year industry.

RESULTS

Table 1 shows the estimated sheep population (Heimer and Smith, 1975), normal harvest, and hunter use in each of the proposed additions to National Parks, Monuments, Preserves, National Wildlife Refuges and Ecological Preserves.

This table also gives the absolute magnitude and relative percentages of the normal Alaskawide harvest for each area. If National Interest Lands withdrawal and classification occur as anticipated, the reduction in harvest of Dall rams in Alaska will be 450 to 500 animals and the number of displaced hunters will be about 1000. This translates to

Table 1.

Location	Harvest (1976)	Hunters (1976)	% Statewide harvest	% Statewide hunters	Sheep population (estimated)
Wrangell- St. Elias Park	322	954	29	23	12,000
McKinley Park extension	40	60	4	2	1,000
Lake Clark Park	30	63	3	2	1,000
Noatak Ecological Preserve	38	68	4	2	1,000
Gates of the Arctic Park	52	110	5	3	3,000
Total expected reductions	482	1055	45	32	18,000
Arctic National Wildlife Range	79	118	7	4	8,000

about 40 per cent decrease in harvest and a disruption of about one-third of the hunter effort. Table 1 also shows that approximately 18,000 of Alaska's estimated 40,000 (Heimer and Smith, 1975) sheep will be unavailable to sheep hunters.

DISCUSSION

It is apparent that there will be a drastic reduction in hunting opportunity for Dall sheep in Alaska when the withdrawal of lands slated for nonconsumptive management is completed. The effects may be a reduction in hunter effort, an increase in hunter pressure on remaining habitat, or a combination of the two. It is impossible to predict what sort of mix might occur so I shall discuss each situation individually.

Decreased Hunter effort: If, as shown in Table 1, there is a decrease of one-third in hunting resulting from reclassification of sheep habitat into National Parks, a loss of revenue to the State of Alaska from sheep hunting will occur. If the approximately 1000 displaced sheep hunters do not hunt and do not purchase licenses and tags, a proportionate reduction in the amount of money spent on sheep hunting would occur. This might be as high as 33 per cent or an annual loss to the Alaskan economy of about \$1,000,000 excluding commercial air fare.

If the possible maximum reduction in hunting opportunity discussed above should occur other losses would follow. Typically, the resident-non-resident composition of the 1000 displaced hunters would be 300 non-residents and 700 residents. A loss of 300 non-resident hunters would result in a loss of \$93,000 annually to the Fish and Game License Fund. Because of the methods of allocating Pittman-Robertson monies for fish and wildlife restoration there would not be an immediate decrease in operating funds for the Alaska Department of Fish and Game. However, withdrawal of vast acreages from hunting will eventually limit the opportunity to participate in hunting so that the long-term effects are certain to be an erosion of the funding base for fish and wildlife restoration funding.

Sustained hunter effort: If hunter effort remains the same as it has for the last several years, another set of circumstances could arise. Alaska has been totally "discovered" by Dall ram hunters. That is, there are no longer any large unexploited areas which can absorb increased hunter pressure. This means that the 1000 displaced sheep hunters have no place to go that is not already hunted. Several areas have had low hunter pressure in the recent past, but these are included in the proposed withdrawals. With harvest already approaching or exceeding the annual increment of legal rams in many areas and the possibility of an approximate "increase" of 32 per cent which will have to be absorbed, something will have to be done to preserve the desirable human aspects of sheep hunting.

Presumably the biological aspects are being protected by harvest-

ing only mature males. The only way to preserve the desirable human experience in sheep hunting will be to limit participation. This will probably take the form of more active and restrictive management practices.

It has been the experience of the Alaska Department of Fish and Game that attempts to limit hunter participation by any means other than permits have been notable failures. Consequently, the most productive approach will be to increase the number of special permit hunts offered, thereby reducing the number of people involved. The Alaska Dall sheep management plans (Alaska Department of Fish and Game, 1977) partially address this problem. These plans identify three different management goals. First, in areas having high-quality sheep populations which will still be available for hunting, very restrictive management is anticipated. In these areas the Department of Fish and Game is seeking to provide high-quality hunting experiences for trophy rams. Such areas will have a limited harvest and limited hunter participation with only large, old animals, usually full curl rams, defined as legal.

The management plans call for two such management areas having very high-quality populations of Dall sheep. One area, the Tok Management Area, is already under this system of management and has proven highly acceptable to the public. The other area, the southeast corner of the Wrangell Mountains, is unique among Dall sheep ranges, having by far the highest quality populations in Alaska (Heimer and Smith, 1975). This area, from the Nizina River to the Canadian border north of the Chitina River, is currently scheduled for inclusion in the Wrangell-Saint Elias National Park. Because of the extremely restrictive type of Dall sheep management planned here (a maximum harvest of 30 full curl rams per year taken by approximately 60 hunters - a mean maximum density of 1 hunter per 20 mi² - all of which would have to reach the area by aircraft) the biology of Dall sheep populations managed under this scheme would be indistinguishable from that of fully protected sheep within the Park; and the impact of Dall sheep hunters would be undetectable. Allowing sheep hunting in this section of the Park or including it in the Preserve with wilderness designation would allow limited numbers of Dall sheep hunters a unique experience in this area and the cost to the goals of the Alaska Coalition would be nothing except to gain the good will of sportsmen throughout the world. Of course, the same argument could be made for any area where restrictive management is enforced. Attention is directed to this area because of its ability to produce the largest - horned Dall rams in the world, the very restrictive management planned, and the scarcity of other big game species in the area.

The second management goal is that of providing for hunting under aesthetically pleasing conditions. This means that a limited number of hunters would be allowed to participate, but the number would be greater than in the scheme described above. Generally, legal rams would be defined at a lesser size than in the trophy management areas and harvest levels would approach annual increments of rams into legal age classes.

The third management goal described in the long-range plans is that of maximum opportunity to hunt. Generally areas where this goal will be in force are considered "sacrifice" areas where anyone may hunt for legal rams of designated minimum size. There would be no limit on human participation, and the virtue of these areas, if any, would be that anyone who desires to hunt sheep will always have the opportunity even under less than ideal conditions. We currently envision little in the way of transportation restrictions or limitations on means as long as they are traditional. These areas generally should contain high density, low-quality populations, and the possibility of either sex hunting may be considered.

It is unlikely that hunter pressure will remain constant, or a decrease corresponding exactly to that of the decrease in available sheep habitat will occur exclusively. Should a combination of these occur, the problems of Dall sheep management in Alaska will be compounded. In all likelihood there will be some decrease in hunter effort (with the attendant decrease in funding) as well as increasing pressure requiring increasingly active sheep management programs which will be underfunded. In short, the Alaska Department of Fish and Game will have more responsibility and less money.

An additional irony involved in the Alaska National Interest Lands Act will be that the taking of Dall sheep allowed on the lands scheduled for inclusion in the National Park System will be only that allowed for subsistence. This is ironic because Dall sheep have never been able to sustain the intense level of harvest required for subsistence. Campbell (1974) argued that aboriginal subsistence use of Dall sheep resulted in their near extinction throughout the Brooks Range in the late 19th and early 20th centuries. Certainly, commercial market hunting has resulted in depletion of Dall sheep in the past, and recent accounts of diminishing Dall sheep populations in the western Brooks Range correlate closely with intense local use of Dall sheep in a subsistence lifestyle.

It may be argued that because Dall sheep are consumed as food they are used for subsistence; if this argument is valid all Dall sheep taken by sport hunters are by definition taken for subsistence.

The most common justification of present day "subsistence" Dall sheep use is that it is necessary for maintenance of the culture of the villagers of Kaktovik on Barter Island on Alaska's north coast. These villagers usually take large numbers of Dall sheep in late winter from the Arctic National Wildlife Range. These sheep are not required as food, but the hunt is a pleasant late winter diversion. This appears to be as much a matter of recreation as survival. Because Dall sheep are incapable of contributing significantly to human sustenance over the long haul, I think that their taking by rural Alaskans has always been a recreational venture as well as one of protein and skin acquisition. Consequently, I think it ironic that efforts to protect the subsistence lifestyle have classified an animal which has been "sport hun-

ted" throughout history as a component reserved for present day "subsistence." Trophy management as described earlier would certainly have less impact on Dall sheep populations in the proposed National Parks than subsistence hunting.

Mr. Matz, in making the point that the Alaska Coalition is not anti-hunting, pointed to the Coalition's recognition of subsistence hunting in the proposed National Parks. This will require a substantial change in management philosophy on the part of the National Park Service in the name of "subsistence" which will be far more detrimental to Dall sheep than closely regulated recreational hunting. The question of why the National Park Service is willing to accept "subsistence" hunting which will have a far greater impact on the wildlife within the National Parks yet is unwilling to accept recreational hunting which can be regulated to have no effects remains to be answered.

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