

The winter of 1970-71 was tough for thousands of big game animals, especially moose. Alaskans were primarily aware of the winter starvation problem in the Susitna Basin and the Tanana Valley, because both are adjacent to major population centers. However, the problem was not restricted to these areas.

Because starved and dying animals could be seen around

populated areas, the question of feeding moose arose numerous times. Many persons thought the animals should be fed, and that the Department of Fish and Game should do the feeding. Should wildlife agencies attempt winter feeding? To answer this question, let's first take a look at our responsibilities in managing big game.

# Winter Feeding - Does It Work?

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The wildlife manager's job is to keep game populations in balance with their habitat. Managing wildlife in the sub-Arctic is more concerned with the nature of the winter season than any other factor of the environment. The carrying capacity of a particular piece of wildlife habitat depends upon the severity of the winters in the locality.

Because of this, the conclusion may be drawn that game should be harvested so that winter loss is held to a minimum. This means that game should be managed on the basis of average, or "normal" winter conditions.

However, unusually hard winters occur every 10 to 15 years. Five or six mild winters generally result in an increase in the wintering population of game. For moose, this increase may run from 20 to 30 per cent per year. Following several "good" winters, there usually is more game in the fall for hunting.

Nature regulates herself and sooner or later a hard winter comes along. When this happens, there usually is not enough food and cover to supply the game population which has been building up. Soon, animals begin to die off.

The problem, then, is to bring big game populations out of these occasional rough winters in good condition. A question frequently asked is, "Why not give nature a helping hand and put out artificial feed?"

This question has been studied by wildlife biologists and sportsmen for many years. Feed lot studies have been conducted, food and nutrient requirements have been investigated and many states have experimented with feeding programs. Every possible solution has been considered since the late 1930s, when, as a result of fires, land clearing and other human activity, big game started to exceed the capacity of winter ranges all across the country.

No one likes to see wildlife starve. However, most of the experimental feeding programs resulted in an evil worse than

the original problem: the more extensive the winter feeding program, the more animals there were to suffer and starve during the next hard winter. By trying to be helpful, man was upsetting the ecological balance of nature.

On the surface, winter feeding seems to be the easy way out. It has been some of the most common advice offered to wildlife specialists. The only problem is that it doesn't work.

Wildlife managers certainly wish that game animals could be fed successfully. It would be a popular action program, and it would look good. The Department of Fish and Game would be commended by a lot of people--until they realized that it wasn't working.

Here are some of the reasons game managers feel it unwise to artificially feed big game animals:

1. **Feeding is nearly impossible from a logistics standpoint.** Only a relatively small number of animals can be fed, because big game winter ranges, though comprising a small amount of the total year-round range, are usually quite extensive. To feed any segment of a herd other than that directly adjacent to highways would be a tremendous task. This is especially true for moose, which consume many pounds of food per day.
2. **Artificial feeding doesn't work because it tends to concentrate animals unnaturally and this causes long-term damage to the range.** Animals eat natural food in addition to artificial feed, and such concentration destroys the ability of the range to recover and produce sufficient natural feed during succeeding years.

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## Crab (continued...)

fishery regulations have undergone wide changes through the years.

The first crab fisheries were conducted by trawling. Crabs were readily available during the spring mating months and the most productive trawling areas were the mating grounds. Wisely, this self-destructive fishing method was outlawed soon after Alaska became a state.

The year-long fisheries of earlier times were gradually reduced to the present five-month season, thus protecting both the crabs schooled to molt and mate as well as the "soft" crabs which are unable to withstand handling without injury.

More recently, vessel registration areas and catch quotas have been established. The effects of these regulations are to disperse crab vessels among the registration areas to which they commit themselves, thereby reducing the chance of overfishing a particular stock of crabs.

Research on the king crab continues throughout western Alaska. In addition to studies of crab mating, growth and migratory habits, future research emphasis will include studies which will provide biological data for the purpose of recommending annual catch quotas in each vessel registration area.

Since it has proven to be impractical to estimate total numbers of king crab in Alaska's waters, biologists will obtain estimates of the relative abundance of all size groups in all registration areas. These estimates, when related to actual catch figures, will enable the Alaska Department of Fish and Game to estimate the impact of immature king crabs on future years' fisheries.

These regulations should now provide ample protection for king crab brood stocks so that their reproductive potential is not endangered.

The decreased catches of the past several seasons probably represent a short-term trend and Kodiak Island crab catches are expected to improve to a level which will shift the emphasis from the Aleutian area and will re-establish Kodiak as Alaska's premier king crab receiving port. ■



## NEW HUNTING and GUIDING REGULATIONS

THE 1971-72 EDITION of the Alaska hunting and guiding regulations will be available by mid-July from license vendors, sporting goods stores and Fish and Game Department offices throughout the state.

The booklet contains important changes in the hunting

## Winter Feeding (continued from pg. 11)

3. Probably the most important point against winter feeding is that members of the deer family usually have difficulty in digesting artificial feed. Moose, deer, elk and sheep are ruminants, and have four "stomachs" which contain special types of bacteria needed to break down and use feed. These animals normally feed on woody shrubs such as willow and birch, and when suddenly placed on an artificial diet, the bacteria may be unable to adapt to the new material. Several moose which starved near Fairbanks during the severe winter of 1970-71 had stomachs full of hay--material which they were unable to use.

If gradually placed on an artificial diet such as hay, the animals might adjust before winter. However, the problem of animal distribution arises. When the weather is mild, moose and deer cannot be enticed to give up their natural, preferred browse for artificial feeds such as hay. Therefore, they will remain scattered and most of the animals do not arrive on the feeding grounds until conditions become critical.

A big game herd which has access to an adequate supply of natural food is highly productive. A well-fed, productive herd can produce more game for the hunter, photographer and sightseer than can a larger herd of less productive animals.

A program of annual hunter harvest to keep game populations in balance with their natural food supply during average winters will allow some "cushion" to absorb greater use during those occasional severe winters. However, there will still be some loss during such winters, even if the animals are fed.

These are hard facts--facts which Alaska Department of Fish and Game workers accept reluctantly. Biologists and officials of the department have a close relationship with wild animals and facing up to the prospect of a heavy winter loss is not easy.

Still, starvation is one of nature's most important means of keeping animal populations in balance with their habitat. Man can help best by providing harvests where needed so that surplus animals are used, rather than wasted.

Man can also help by recognizing the long-range needs of a moose or deer herd, rather than by attempting to provide temporary relief which aggravates, rather than alleviates the problem. ■

and guiding laws and hunters are urged to study it carefully before going afield.

Sport fishing regulations are available now and should be a part of every fisherman's creel kit. ■

**Alaska**

# FISH & GAME

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ALASKA DEPARTMENT OF FISH AND GAME

