By Loyal Johnson
Game Biologist
Sitka

SOUTHEASTERN

This article was prepared in early December 1975 to inform the people of Sitka of the department's views and philosophy on the effect of severe winter conditions on deer population. Author Johnson has added an epilogue on the impact of the management decisions and hunter effort during the winter.

EXTREME SNOW accumulation and its impact on our deer population has generated considerable public controversy as well as deep concern on the part of the Department of Fish and Game.

It is well known that deep snow accumulations of long duration will cause winter mortality of deer regardless of the condition of the deer or their range. Snow depths of about six inches cover the plants upon which deer depend for survival. Deer are able to subsist on a diet of blueberry browse; but with no supplemental forage in the form of nonwoody ground-growing plants (forbs), they will steadily lose weight. Kelp, too, although eaten in large quantities, will not sustain deer.

Winter snows force deer to migrate downward. Even though there has been little snow in this area over the past three winters, the deer have spent several months on the beach area winter ranges. In fact, last winter there was a fairly heavy snowpack at higher elevations, which put the deer on their winter range early and kept them there quite late in the spring. Consequently, winter ranges received heavy use by a fairly dense deer population.

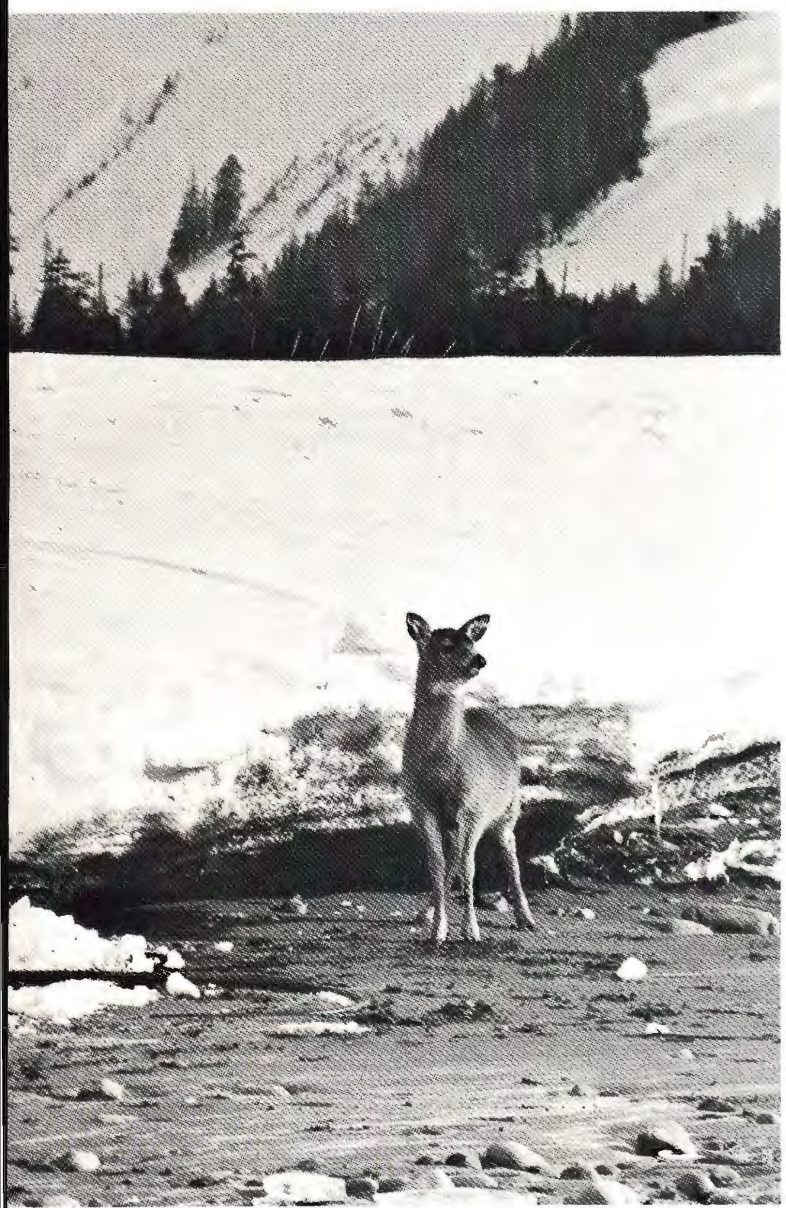
Food becomes increasingly scarce both in quantity and quality as winter progresses. Old bucks which have endured the rigors of the rut and young fawns enter the winter with the poorest chances for survival. Regardless of the mildness of the winter here, about one dead deer per mile of beach can be found each spring.

The winters of 1970-71 and 1971-72 were the most severe since 1954. Considerable overwinter losses occurred. In the spring of 1972, biologists of the department found an average of six to eight dead deer per mile of beach throughout Unit 4. Consequently hunter success and hunter effort was down considerably in 1972.

Deer are able to recover quickly from population lows. The very mild winters of 1972-73, 1973-74 and 1974-75 allowed large numbers of fawns to survive. Healthy does, which came through the winter in good condition, produced more and stronger fawns. So the Sitka area deer herd prior to the 1975-76 winter was in a very healthy condition.

All living things consume food for three primary reasons: 1) to stay alive; 2) to grow and produce fur, feathers, antlers, etc.; and 3) to reproduce. When the food supply is reduced, reproduction is the first life function to suffer. Does have single fawns rather than twins. Fetuses are reabsorbed or aborted rather than developing. Young are less vigorous at birth. Next, body and antler size and pelage quality are reduced. For instance, deer in the Sitka area where the winter

DEER predicting on the basis of observation, experience and scientific reason



ranges are heavily used average above 15 per cent smaller than those farther south where forage is more abundant. A yearling buck in the Sitka area normally produces two misshapen lumps for his first year's antlers while in the Ketchikan area, yearling bucks normally have three- to four-inch spikes. The third body function to suffer with inadequate food is, of course, life itself. We then see starvation losses.

The overall age structure of a herd of animals provides clues to the well-being of that population. The Alaska Department of Fish and Game has gathered literally thousands of deer jaws over the years by which to determine the age structure of the deer herds. (Note: Deer jaw story on page 11.) These jaw collections have always shown that the age structures of the various deer herds are not significantly altered by hunting but rather reflect the severity of the previous winters. For instance, in Unit 4 the age structure during the fall of 1972, following two severe winters, was largely older animals. Since that time, the majority of the deer examined have been younger age classes, still with a fair representation of older animals.

To summarize, age analyses of the deer herds, range examinations, hunter contacts, and a correlation of these with winter conditions suggest that winter severity is the major controlling factor determining deer numbers. Observations also show that the deer entered this winter at a population level.

We are now entering (Dec. 1975) what is probably going to be an extremely severe winter. Weather bureau records indicate that in November 1975, Sitka received more snowfall than in any other November since at least 1954. The snowfall thus far for December (1975) is already greater than for any other December in the '50s and '60s except 1957, 1968 and 1961.

All indications show we will suffer very heavy deer losses. Do we utilize this vulnerable population of deer by hunting? Or, do we terminate hunting with the hope that by entering this harsh winter with a higher number of deer we will allow for a greater number of survivors? These are the considerations this department presented to the Alaska Board of Game, the body that makes the hunting regulations.

The position of the Department of Fish and Game is that the utilization of this resource by reduction through hunting is the more advisable of the two options available, and this was reflected in our current deer season and bag limit. ▪

Epilog: Happily, we can report that the winter of 1975-76 was not as severe as we thought it might be. Most of the snow accumulation was gone by the end of December and little additional snow fell during the remainder of the winter. Please note, however, that the snow accumulation above about 1,000-foot elevation was extreme; and as this is written in late July, there is still a lot of snow in the alpine areas. The result of this past winter was that, like 1974-75, deer

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were again concentrated on their snow-free winter range for a long time, perhaps as much as eight months. Picture then, a high deer population restricted to a band of winter range about 1,000 feet in width, held at the bottom by the ocean and prevented from going up by deep snow. The results of that concentrated use by deer on the forage plants is very striking.

Last year during November and December, when deer were concentrated on the beaches, hunters from many southeastern towns took advantage of that situation. Probably the greatest effort was exerted by Sitkans, for they are closest to the best deer populations; but people from Juneau, Hoonah, Angoon, and Tenakee also took large numbers of deer. The total harvest was probably in excess of 10-12,000 deer.

At the conclusion of the hunting season I spent a great deal of time in the field. During a brief February snowfall, I was able to make a fair analysis of the deer population. Hunting did appear to make a substantial reduction in the deer population adjacent to Sitka. Deer were still very plentiful, however. For instance, I saw 20 deer on one pass by boat through Katlian Bay, which is immediately adjacent to Sitka. Using an airplane I counted almost 200 deer from Fish Bay to Hoonah Sound. Another 150 deer were counted from a helicopter on a six-mile stretch of Kruzof Island. An observant deer hunter reported counting 75 deer on one trip through Nakwasina Passage. These areas all received very heavy hunting pressure during November and December.

On-the-ground examinations of these areas as early as mid-December showed that just about all the visible forage was already gone. Hunter-killed deer that I examined in late December were beginning to decline in body conditions, especially the fawns.

Each spring in April and May we examine 24 one-mile-long transects on beaches of Admiralty, Baranof, Chichagof, and Kruzof islands, searching for winter-killed deer and making general deer-range observations. Even following a mild winter we normally find about one dead deer per mile of beach. This past winter was no exception, for we found 22 dead deer on these 24 transects. Baranof and Chichagof islands had the greatest number of dead animals; only a few dead ones were found on the Admiralty Island transects. In Fish Bay, just north of Sitka on Baranof Island, I found a minimum of five winter kills on the one mile of beach. Please note Fish Bay received much hunting pressure last fall.

My overall impression of the Unit 4 winter deer range is one of amazement in that any deer can survive on the scant amount of forage they have available to them.

In retrospect, I feel leaving the season open in face of easy hunting conditions, knowing that large numbers of deer would be taken, was the correct management decision. Should similar conditions arise, I would recommend the same action.

I predict that hunting might not be quite as productive in the immediate Sitka area this fall as it has been the past two but probably only slightly less so.

In view of the very poor overall condition of the winter range together with a high deer population, I predict that the first moderate to severe winter we have in which snow persists into March, we will see some large-scale winter kills. Heavy hunter kills won't prevent that, but it will lessen its magnitude. ▪

Loyal Johnson holds a B.S. degree in biology from the College of Idaho and an M.S. degree in wildlife management from the University of Montana. He joined the department in 1964.

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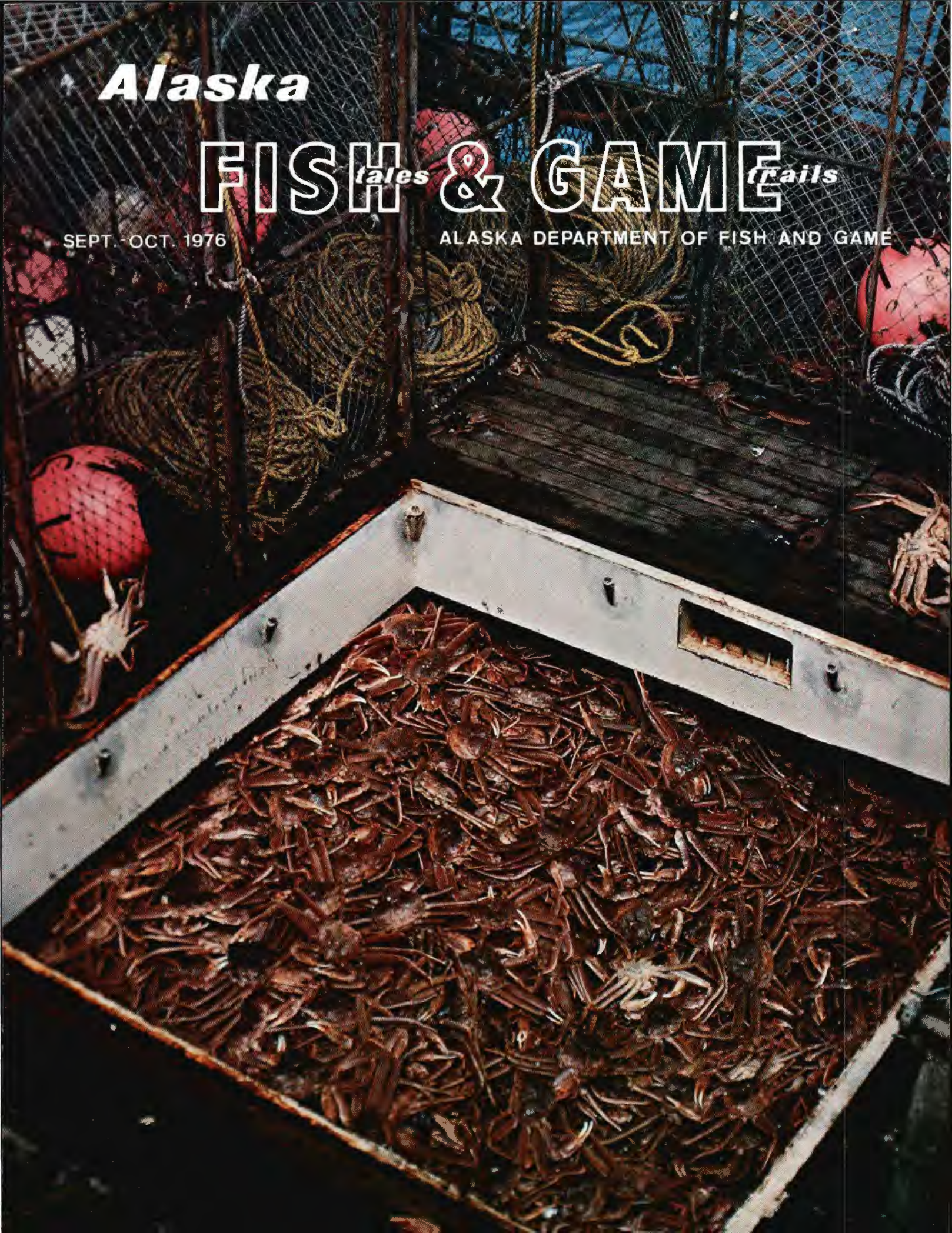

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