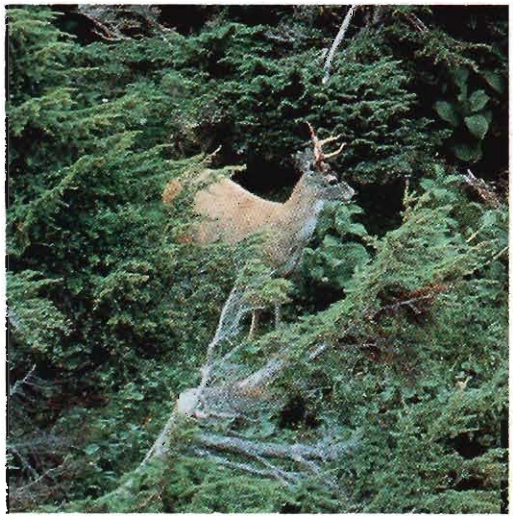
Southeast Deer Ride High on Weather Cycle

by Loyal Johnson

B. Baker



J. Schoen

In an area just south and west of Juneau, in southeast Alaska, deer hunters have never had it so good, but game biologists are carefully watching the weather. It might be time for a big change.

Game Management Unit (GMU) 4 is an all-island area consisting of three major islands—Admiralty, Baranof, Chichagof—and a series of smaller ones. It is separated from the rest of Alaska by Frederick Sound, Stephens Passage, and Icy Straits. The smallest of the three major islands, Baranof, covers about 1700 square miles.

All islands within the unit are heavily forested, except for those areas that have been logged, and provide optimum habitat for the indigenous Sitka black-tail. The area is also subject to weather extremes. It has long been understood that these weather extremes are the major controlling factor for deer. An examination of the existing weather records, some of which date back to the mid-1800s, show that weather in Southeastern follows an 11-year cycle. These records have been closely examined by Dr. Glen Juday of the Institute of Northern Forestry. In a separate study, Harry Merriam, a biologist now retired from ADF&G, found that deer populations follow the same approximate cycle. If graphs of Juday's and Merriam's summaries are superimposed, you find the same pattern. Merriam also determined that following a winter in which the mean annual winter temperature falls below 32° F, there will be an average of 1 or more dead deer per mile of beach the following spring and that hunting the next fall will be less productive.

In recent years, however, the 11-year cycle has been interrupted. There has not been a severe winter causing loss of deer since 1971-72, though minor losses did occur in '74-'75, '77-'78, and '80-'81. No instances of deer winter mortality have been observed in 8 of the past 10 winters. As a result, deer populations have been little influenced by natural control. In Unit 4 they are probably near or even above all-time population highs.

Observations point to the same conclusion. Hunter harvests are very high. The reported hunter harvest for the 1985 season is the highest ever (about 10,000) and reflects a trend of increasing harvests for the past several years. Buck/doe ratios are high, suggesting opportunities for hunters to be selective. There is a downward trend in the number of days expended per deer take, which means that hunters are encountering greater numbers of deer. There is an increase in the number of deer taken per hunter.

All these increases in harvest statistics have occurred with an absence of snow during the hunting season, a situation which makes deer more vulnerable. At the same time, there has been only a modest increase in the number of hunters. Virtually all fawns and yearlings examined by ADF&G biologists have been found to have infections of lung worm, a somewhat density-dependent parasite. Estimates of deer densities based on annual spring pellet group counts are as high as 200 deer per square mile in some of the better deer areas.

A major controversy exists regarding logging and its impact on deer. Wildlife managers now recognize that logging old-growth forests in southeast Alaska will reduce deer numbers. Those who promote the philosophy that logging is beneficial for deer in coastal southeast Alaska point to the current high population and harvest statistics and ask, why the concern? Here, in GMU 4, we have extensive areas where the timber has been removed from critical deer habitat and yet deer populations are reported at all-time highs.

The answer is simply that we are at the top of a cycle in deer numbers resulting from a series of mild winters. During this time deer have not been forced to rely on the low-elevation, high-volume stands of old-growth timber. Rather, during these mild and relatively snow-free winters, the deer have been able to obtain their required nutrition from either clear-cut areas or nearby stands of old-growth forest. It is during the stress of deep snow that deer (and other old-growth dependent species) must have the protection afforded by old-growth stands.

Over most logged areas, deer numbers will never again be as great as they were prior to logging for two reasons: First, after the second-growth conifer saplings become dominant at approximately 25 years of age, they shade out all low-growing vegetation, much of which is deer forage. Secondly, once these second-growth trees attain commercial size at about 100 years, they will again be logged, causing the habitat cycle to be repeated.

It is likely that the current high deer population combined with extensive clear-cutting will lead to heavy losses of deer by malnutrition and starvation in the first severe winter we experience. During the severe winter of 1968-69, Merriam estimated that as many as 60,000 deer were lost. Following the last severe winter, 1971-72, we found almost 7 dead deer per mile of beach in Unit 4. That was following two previous winters of high losses; the deer population was already low.

Deer are sufficiently productive that by the fall of 1975 they had rebounded to near "normal" numbers in Unit 4. An observation on Chichagof Island indicates the relationship between deer and old-growth forests. During the winter of 1981-82, which was about the last during which any losses were observed, ADF&G biologists did a number of counts during late winter in the Hoonah Sound area when deer were concentrated on the beaches and observed an average of about 12 live deer per mile below old-growth forests. Below clear-cuts in that same general area, they observed only 4 deer on about 10 miles of beach. However, that spring they found almost three times as many dead deer per mile of beach below the clear-cuts as below the old-growth forests.

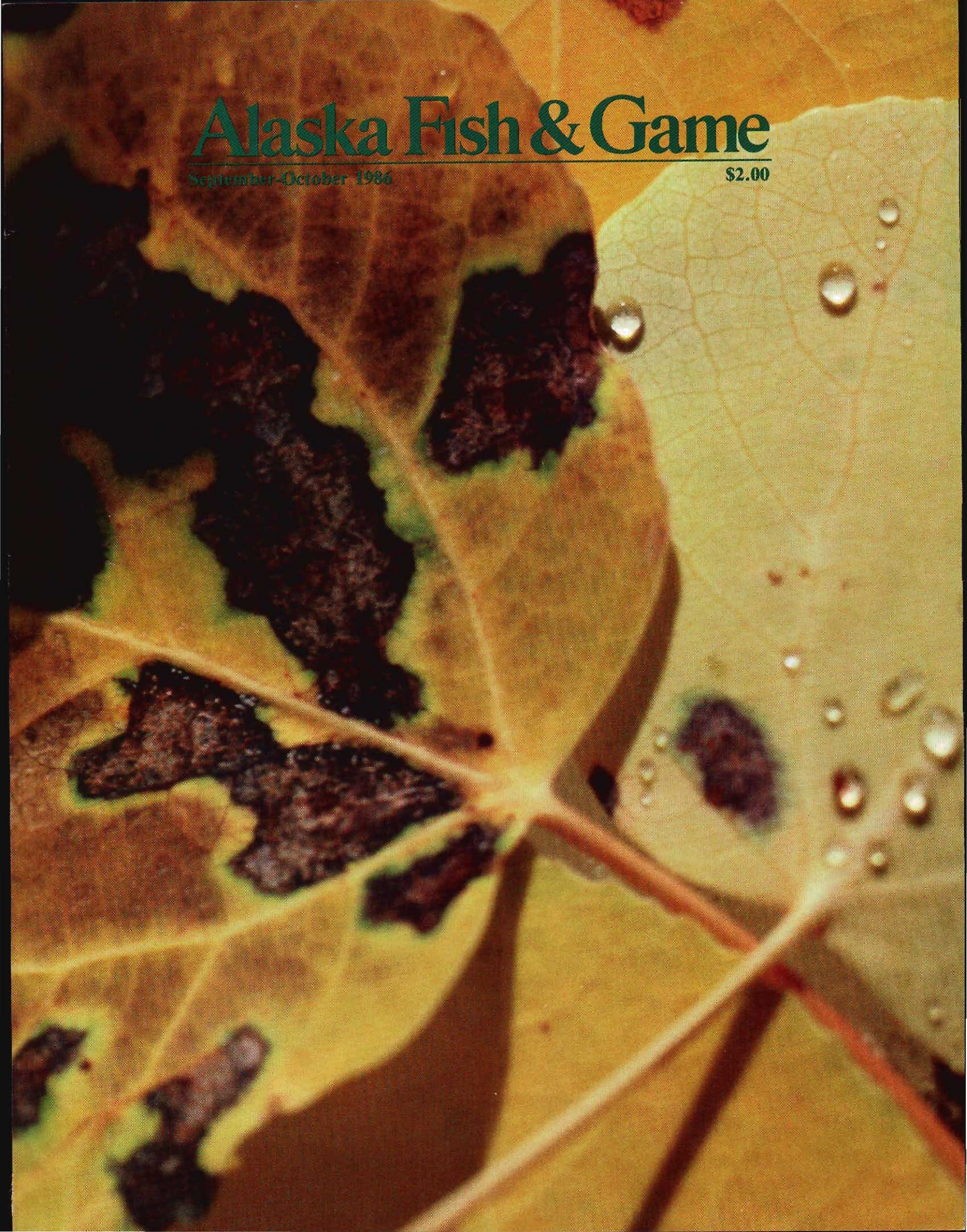
Research by both ADF&G and the U.S. Forest Service over the last 15 years has conclusively shown that old-growth forests allow greater numbers of deer to survive during the periodic severe winters that occur over southeast Alaska. We also know that because of a series of very mild winters during the past several years, little or no winter losses have occurred and this has resulted in a very high deer population.

The question facing us then, is what to do about it? The answer is probably nothing. We currently have a season that is 5 months long and allows for the taking of up to 6 deer per year. In spite of this, the average hunter takes only about two deer. Increasing the season or liberalizing the bag limit probably would not increase the harvest significantly, though it might allow a bit more utilization of this abundant resource.

Deer are very productive animals. If given good habitat and range conditions, they can recover quickly from population lows. Studies show that doe deer above one year of age typically give birth to twin fawns every year and continue to do so throughout their lives, which can be as long as 15 years. There is a lessening in the reproductive performance of very old does, however.

ADF&G biologists cannot offer any profound solutions. We can simply point out that the deer population in Unit 4 is very high and that when a severe winter strikes many deer will be lost. Further, there is probably nothing we can do to prevent such losses. Those losses will be of greater magnitude, and recovery will be slower, in logged-off areas. In past years when deer numbers were lowered by severe winters, seasons were often shortened and bag limits reduced in response to public pressure, the rationale being that reduced hunting pressure would speed recovery of depressed populations. It is likely that such action is unnecessary since hunting is not the mortality factor that limits or regulates deer numbers. Given good habitat and moderate winters, the populations will recover.

Loyal Johnson has served for 22 years as Area Biologist for ADF&G, including 15 years in Sitka. Born in Idaho, with an MS degree in Wildlife Management from the University of Montana, he has also lived in Fairbanks, Nome, Anchorage, Cordova, and Glennallen.



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