

JANUARY

By Ken Solomon

"January, The Coldest Month"

January is the coldest month of the year. Day and night temperatures are often colder than most home freezers. A 20°F night with even a moderate wind of 11 mph creates a wind-chill of -25°F. How can pheasants survive such conditions? While you can wear another wool scarf or down vest, the pheasant has only the clothes it grew last July. In October it could ruffle its feathers for more insulation, but that's not enough now. The answer to staying alive in January is food, habitat, and even when the bird was hatched last spring. Under severe winter conditions, an early hatched hen (May) can survive two days longer than a late hatched hen (July). The hen hatched in May will be larger and have more body fat on which to survive.

Each pheasant must increase its energy intake to offset the increased loss of body heat, and to maintain its 108°F temperature. In January the bird needs 504 kcal/day for warmth and weight gain. This mid-winter dietary requirement is equal to two McDonald's hamburgers or three Snickers candy bars a day. This is nearly double that needed last October when ruffled feathers were sufficient for warmth.

"January Weight Changes"

Most experts agree that pheasants increase weight from September through December, but disagree if weight continues to increase through January and February. Whether they do or do not depends on weather conditions. The amount of energy available for fat production, or weight gain, is determined by outside temperatures. A harsh January can stop fat production, and cause existing fat and muscle tissue to be used for warmth ... with a corresponding weight loss. With normal January weather, hens will stop producing fat, and use what they eat for warmth, without using existing fat or muscle. In this situation, the hen will hover around 2.4 lbs. If mild conditions exist in January, part of her diet can be used to make body fat and increase weight. Depending on conditions, fat in January can be more than double that of December.

"January Foods"

Where can a pheasant find the 504 kcal of energy needed each day to prevent starvation? During mid-winter, corn constitutes up to 77 percent of the pheasant's diet. Corn contains more metabolizable energy (3.43 kcal/gm) than most other food items. Nearly 90 percent of their diet is commercial grains, 6 percent plant foliage, and 4 percent weed seeds. Trace amounts of insect parts are also found in their daily food intake. Birds can dig food in snow up to 3 to 4 inches deep. A thin quarter inch of ice can create problems if it doesn't melt within a few days. Since hens are not as strong as roosters, hens have more difficulty digging through ice or snow for food. And if snow and/or ice has left only a few areas open for the birds, roosters will take over the area by chasing away any hens. No wonder that during winter more hens die than roosters.

"During A Blizzard"

With the first deep snow or ice storm, people start to worry about the pheasants starving. Death due to starving during inclement weather is extremely rare if they have adequate winter habitat. The worst storms last only two or three days, and pheasants are quite comfortable spending three days without feeding. Let's say the birds have just finished breakfast when a blizzard hits with its snow and chilling winds. The birds immediately go to heavy grass cover to wait out the storm. Some people believe the pheasant, like other birds, sense the coming storm and will feed more heavily before finding cover. Once in protective cover, all the food they have eaten will be utilized in three to four hours. Then they must start using body fat to keep warm. Fat constitutes more than 13 percent of a pheasant's January weight. This equates to 142 grams or 992 kcal of usable energy. This is enough to support a non-feeding pheasant two to three days. If needed, muscle tissue could then be burned for warmth for another 10 days. Fortunately most blizzards do not last more than a couple days, so the birds can leave muscle tissue alone. The first blizzard is the easiest to survive, while each subsequent storm finds birds with less fat and in poorer physical condition.

"After A Blizzard"

Death due to starvation after a blizzard is more likely than during a blizzard, but still rare if birds have protective cover. Pheasants can survive up to two weeks, even if all food sources are covered by deep snow and/or ice. Without any available food, a January rooster can survive 19 days and hens 16 days. These survival days will of course decrease with colder temperatures. Once fat reserves are gone, muscle tissue can be used for warmth. Pheasants die when they reach 60 percent of their normal body weight. A 2.4 lbs hen will die at 1.4 lbs. Even if the snow clears from the food supplies after one week, the hen's deteriorated body condition may bring quick death if another blizzard comes too soon.

But when is snow depth ever uniform from field to field, or when does the ice sheet last more than a few days? Not often! The same endless winds which can drive the wind-chill to -70°F can also be a blessing. While the wind piles snow in one area, it blows many farm fields free of snow and uncovers areas where pheasants can feed.

"Light Meat"

Many people prefer the mild taste of the pheasant's light colored meat to the strong taste of a duck's dark meat. Why is there a difference in color? Color depends on the amount of work that a muscle has to perform. The hard working muscles are the darkest colored. Hard working muscles need more blood to deliver energy to the working cells, and to remove the CO₂ and heat produced while metabolizing that energy. So more blood makes the muscle darker. Since duck muscles do more work (long migration routes) than pheasant muscles, duck meat is darker and stronger tasting. Even within ducks, those that migrate each year have darker meat than domestic, non-migrating ducks.

In many birds like the pheasant and chicken, the leg muscles are dark meat while the breast is white. The legs do more work than the breast (flight) muscles. Hunters know that pheasants do more running than flying, and commercially raised chickens do no flying. Consider also the animals with red meat. The slow,

sedate cow has lighter colored meat than the fleet-footed, energetic deer.

"Hens Die"

Does the winter cover you now provide pheasants insure equal survival for roosters, young, and hens? No! As winter cover, your house insures that you, children, and spouse have equal chances to survive winter. As winter cover, your brushy draw provides equal protection to roosters, young, and hens, but more hens will die. Because the hen is smaller than the rooster, she loses body heat faster, she carries less fat, she can not survive as long in a blizzard, she can not dig as easily through ice and snow for food, and she can not defend the food from bully roosters. So more hens than roosters die each winter.

As winter cover, your brushy draw also provides equal protection to the youngest and the oldest of the juvenile birds, but survival is different. The chick hatched in early June has a much better chance of surviving this winter in your brushy draw than the chick hatched in July ... the July chick better than the August chick .. and August better than September. The later a chick hatches, the less time it has to reach adult body size and body fat content before winter hits. Having less fat, the younger of the juvenile birds die first.

"Woody Cover"

Pheasants use woody cover throughout the year. 1) Of the pheasants' nests, 3.5 percent are found in shelterbelts. The success of these nests may not be high because the long narrow belts aid in predation. High nesting use of shelterbelts may indicate a lack of preferred cover types. 2) The summer shade provided to chicks and adults by woody cover may be more important than the cover's winter benefits. 3) Most importantly, woody cover is winter protection. It provides daytime protection from predators, and saves pheasants 28 percent in metabolic needs. It also provides protection from cold 14-hour winter nights when normal roosting cover is filled with snow. Trees and shrubs also provide pheasants with emergency winter food.

Problems exist with shelterbelt design. Shelterbelts planted after the dirty thirties were designed for soil protection. And a 1-6 row belt can be a death trap as it provides no snow free area, and can bury birds in a blizzard. Today's shelterbelts are planted for certain "porosity values" to better distribute snow across the fields. Such open cover provides nothing for the pheasant.

"Harvest Questionnaire"

Many states use a Hunter Survey Questionnaire to help them better manage small game populations. The survey gathers hunting activity and game-kill information on pheasants, grouse, partridge, quail, and waterfowl. Surveys are mailed this time of year to a statistical sample of hunter (not all hunters). Some states contact these hunters before the fall hunting seasons, and ask them to keep records of hours hunted and animals harvested. Knowing how many pheasant hunting licenses were sold last fall, and knowing from the questionnaire the average number of birds harvested per hunter, the state can estimate the total pheasant harvest. This can then be compared to similar information of past years to help evaluate the effects of

weather, cover quality, hunting pressure, and bag limits on the number of pheasants harvested.

The number of pheasants harvested generally follows the same pattern of pheasant abundance. More birds bring out more hunters to harvest more birds. South Dakota harvested 7.5 million birds in 1945 with the population at its highest and only 0.3 million in 1976 with the population at its lowest.

"Carrying Capacity"

Game managers often used the term "carrying capacity" when speaking of pheasant populations and their habitat. The pheasant carrying capacity of an area is determined by whatever factor(s) is in shortest supply. If winter cover and food are plentiful in an area, but there is little nesting cover, the way to increase the area's carrying capacity is to establish more nesting cover. Or to have much nesting cover, as with the current federal CRP program, and little winter cover, lowers the carrying capacity - producing more birds in the spring to only have them die next winter.

Carrying capacity does not remain static from year to year. Even when the habitat is left undisturbed, and farming practices remain the same, carrying capacity of the habitat changes. A new planting of nesting cover does age, and its desirability to nesting hens changes. There is essentially no nesting-use the first year, with each additional year seeing more and more hens nesting in it. This increase continues to a peak in the 5th or 6th year. Then the quality of the cover decreases, and so does nesting-use. So the carrying capacity increases then decreases with time.

"Winter Habitat"

During the coldest month of the year, January, pheasants require twice the energy they burned in October. Yet with adequate habitat their body fat content can be at its highest in January. Pheasant bioenergetics requires that the birds have three cover types to help survive the coldest of winters. The cover types are roosting, loafing, and food cover. Winter habitat includes grass cover for roosting at night, trees and shrubs to loaf in during the day, and food.

The purpose of each is to reduce the pheasants' vulnerability to predators, to reduce the birds' energy requirements, and to increase the body fat content of hens for spring nesting. For each 160 acres, 5 should be set aside to provide these covers. The relationship of these covers to each other is also important. Ideally, each cover requirement should be located next to the other, or at most one quarter mile apart.

"Roosting Cover"

Where do pheasants sleep in winter? Good roosting cover consists of idle vegetation that provides low, dense, insulating cover. The pasture, hay land, or wetland that was not cut or grazed last summer will be good roosting cover. As will be wheat stubble, if not tilled last fall. The forage sorghum not bailed or grazed is good for roosting at night and for loafing during the day. The best sleeping cover is the nesting cover planted last spring. Ten to 20 acres of roosting cover per section will provide the cover needed by your pheasants.

Good roosting cover provides insulation and protection from predators. First consider that a 0°F night temperature with a 20 mph wind creates a -39°F wind-chill. The 0°F in idle grass cover will require the bird to burn 25% less energy than at -39°F outside the cover. Second, consider that roosting cover provides easy escape from predators. If threatened by a fox, skunk, or raccoon, birds can flush upward without tree limbs or shrubs to hinder escape. One hour before sunrise, birds move to tree/shrub cover for protection from aerial predators.

"Loafing Cover"

Before sunrise, pheasants will move from their night roosts to tree/shrub cover for protection from aerial predators, and for weather protection. In this loafing cover, "under story" is the key. With grazing, there is no under story to stop the 20 mph wind, and blowing snow.

The best loafing cover contains shrubs with low growing trees (Russian olive, junipers, ash). Pheasants will consume shrub fruits during the summer and fall, but during winter shrubs provide mainly cover. Besides, the pheasant is an agricultural bird and would rather have a commercial grain for their winter diet.

Shrub thickets though need protection where blowing snow can totally fill them. Two double rows of cedars planted 30 to 60 feet apart to the windward side of the thicket will catch most of the winter's snow. Shelterbelts ... the Dakotas need a minimum of 12 rows, Nebraska 8 rows, and Kansas 4 rows. Stay away from planting pines. While for the first years they do provide cover close to the ground, the cover eventually moves upward.

"Loafing Cover"

When thinking of loafing cover many people think only of shelterbelts. But what of that brushy draw or plum thicket? Both are good cover if they are not currently grazed. Consider fencing a portion of that draw, being sure to include an acre of grassland for each acre of shrubs, the grass re-growth will provide pheasants both the night roosting cover and the day loafing cover they require. It is important that the two types of cover are located next to each other.

In new shelterbelt plantings or renovations, be sure to include cedars and junipers. These dark colored trees can act as solar collectors, and raise the temperature within the tree/shrub planting by 5°F. This equates to the pheasant needing 5% less energy to survive the day. Add this savings to the 25% saved by the shrubs stopping the blowing wind. The hen can survive to spring with 30 percent more body fat. And more fat means healthier hens, eggs and chicks.

"Food Cover"

The purpose of a food plot is to keep the hen fat through the winter. The pheasant is an agricultural bird, and prefers the commercial grains left waste after harvest or left unharvested. In South Dakota (average January night temperature is -1°F), the January diet consists of 90 percent commercial grains, with 77

percent being corn. Where winter conditions are mild, and energy requirements less, pheasants can survive on native forbs and shrubs.

Changes in farming practices and farm machinery over the last 40 years have greatly decreased the amount of waste grain in harvested fields. There is still some grain to be had by pheasants, but it lays on the ground subject to rotting, subject to disking, subject to snow or ice cover, and more available to rodents. Standing plots of corn, sunflower, or grain sorghum, provide food above the snow and ice. A two acre food plot in each 160 acres would increase the winter survival of hens, and help them produce more numerous and healthy eggs next spring.