

Upland Game Identification Guide



Photo by Craig Bibrle

Each fall, thousands of North Dakota hunters clip wings, feet and/or pull feathers from upland game birds they bag. Biologists and wardens collect some of these bird parts as part of their field work. The majority are dutifully placed in postage-paid envelopes and mailed by hunters to the Game and Fish Department's Bismarck office.

Wing envelopes begin arriving in mid-September, shortly after sharptail, Hungarian partridge, ruffed grouse and sage grouse seasons open. Biologists examine the contents of each envelope. By looking at key indicators on feathers and feet, they determine age and sex of each bird. When all information is tallied, we have a pretty good idea about the ratio of adults (birds that have survived at least one winter) to juveniles (birds hatched in the current year) harvested, which allows the Department to assess reproductive success from the previous summer.

Hunters who pursue North Dakota's pheasants, sharp-tailed grouse, Hungarian partridge, ruffed grouse, sage grouse and wild turkeys are responsible for species identification before pulling the trigger. Sex identification isn't necessary (or possible in most cases), except for pheasant and spring turkey hunters, where hens are not legal game.

Normally, species identification of birds on the wing is obvious. However, hunters sometimes mistake hen pheasants for sharp-tailed grouse, or young pheasants for sharptails or partridge. Such mistakes are usually made early in grouse season, before pheasants are legal. A good rule to follow is that if you're not positive about the identity of your target, don't shoot. You'll get other chances.



Once you've got a bird in hand, you should know what kind it is. But how do you know if it's a male or female (pheasants excluded)? Did the bird hatch this summer, or did it survive last winter? To biologists charged

with managing upland game populations and seasons, answers to

For all our upland game species except pheasants, the key to determining whether the bird is an adult or young-of-the-year is the appearance of the outer three primary wing feathers. The outermost large wing feather is numbered 10. The next one in is number nine, the next one is eight, and so on. While this is a sharptail wing, feather numbers are the same for all species.

these questions – based on samples of hundreds or thousands of birds – are vital.

To an individual hunter, whether a sharptail is a male or female, or whether a pheasant rooster is a juvenile or adult, is little more than simple curiosity. This guide is designed to satisfy that curiosity – to show indicators biologists use to determine sex and/or age. It does not show every possible indicator for each species, but that isn't necessary. It covers things biologists get from wing envelopes, and that is almost always enough.

When you know what to look for, you can *usually* make a pretty good guess as to the sex and/or age of the birds in your bag (even biologists are occasionally stumped). If nothing else, you can impress your hunting partners with your new-found knowledge.

Even if you think you've become an expert, keep those wings, feet and feathers coming. A good sample size means good information to base future seasons.

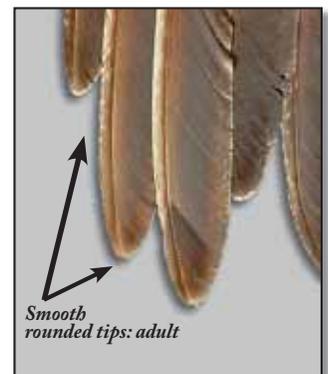
Some Basics...

This guide covers five species of non-migratory game birds in North Dakota – ring-necked pheasant, sharp-tailed grouse, Hungarian partridge, ruffed grouse and sage grouse. Certain indicators of age apply to these species – most of the time.

But the indicators may change as the hunting season goes on. Jerry Kobriger, upland game management supervisor for the Department, said it's usually easier to separate juveniles from adults in September than it is in November, when feathers are usually done growing.

For all species except pheasant, the key to age is hidden in the wing, specifically the outer three large feathers called primaries. For identification purposes, these feathers are numbered. The outermost primary is number 10, the next one in is nine, the third one is eight, and so on. Each species has 10 primary feathers.

This photo shows the outer three primaries of an adult sage grouse wing. Note the rounded tips and smooth edges. Adults of all upland species as well as fully-molted juvenile pheasants, exhibit the same characteristics – rounded feather tips and smooth edges.





The outer three primaries shown here are attached to the wing of a juvenile sage grouse. Note the pointedness and frayed edges on the eighth and ninth primaries. These characteristics are the same for juveniles of all upland species except pheasants. Also note the specks and more mottled coloring of the juvenile wing, compared to the adult. Refer to these pictures when you get to the sage grouse section.

outer primaries, look at the top side of the wing. If the ends of the outer two feathers are somewhat rounded and smooth, the bird is likely an adult. If ends are more pointed and frayed, the bird is likely a juvenile.

This rule applies to all birds covered here, except pheasants. Whether a rooster pheasant is an adult or juvenile is determined by the length and appearance of the spur between the foot and knee.

Sex determination is different for each species. For pheasants, the difference is obvious. For sharptails, key indicators are coloration of the central two tail feathers and the feathers on the top of the head. For Huns, it's feather coloration on the shoulder of the wing, and for turkey it's the breast feather color pattern. The sex of a ruffed grouse is best determined by dot patterns on rump feathers, while sage grouse are sexed by color patterns of feathers under the tail.

Just a few feathers and part of a wing or foot is all it takes for a Department upland game biolo-



This photo shows the underside of a sage grouse wing. You can judge this bird as an adult, because the ninth and 10th primaries are still growing, as evidenced by the bluish "quill" section. If the eighth or seventh primaries look like the feathers in this photo, and the ninth and 10th primaries are not growing, the bird is a juvenile. These characteristics apply to all upland species except pheasant. Later in the season, when all feathers are completely grown, the "quill" part of the outer primaries will be white and hard. When this occurs, gauging the appearance of the outer three primaries will tell you if the bird is a juvenile or adult.

A good general rule for determining age, Kobriger said, is to look at the underside of the number nine and 10 primaries. Pull back some of the small covert feathers so you can see the "quill" part of the primary feather. If the quill part is blue and soft, that indicates the feather is still growing.

"If the outer two feathers – number nine and 10 – are still growing," Kobriger said, then it's an adult. On the other hand, if the number eight and/or seven primaries are still growing, then the bird is likely a juvenile.

When wing primaries are fully grown, the quill part becomes hard and white or light gray. "Then you have to look at the wear and contour between eight and nine and 10," Kobriger said.

To check wear of the

gists to know the age and sex of a harvested bird. You'll have the whole bird. It should be easy, right?

The following pages contain text and photos that should provide basic knowledge of upland game identification. Have it handy when you clean your birds. It will help you learn more about the birds you bagged. If you use it enough, you may reach a point where you no longer need it.

Rooster Pheasant...

A hunter needs to know the difference between a hen and rooster pheasant before he or she pulls the trigger. Most of the time, the identity of the flushing bird is obvious.

There are situations, though, when it is good to hesitate or hold back. Birds flushing into a rising or setting sun are often a tough call. It's not always possible to hunt pheasants with the sun at your



back, but it's a good idea.

When your eyes can't make a positive ID on a pheasant, your ears might be able to lend some help. Rooster pheasants often crow or cackle when they launch. Hens are silent except for the rush of their beating wings.

Early in the pheasant season, juvenile roosters can be fully-colored or hardly colored at all. Consider the photo shown below. Both birds were taken on opening day of pheasant season on adjoining sections of land. Both birds were juveniles, but one was fully colored, the other more closely resembled a hen.

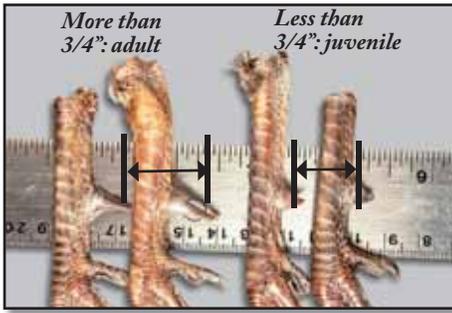
The latter bird flushed close to the hunter, showing enough color to indicate rooster, but the hunter wasn't positive enough to shoot until the bird made a feeble cackle on its way up.

Identifying the half-colored bird as a juvenile was easy. Adult roosters molt in summer, but they are fully-colored again by early fall. The key to determining age between fully-colored juvenile roosters, and adults, is the spur located on each of the pheasant's legs between the foot and knee.

All rooster pheasants have spurs, while hens don't. That's why a foot left on a dressed pheasant is adequate for determining sex.



These two roosters were taken on an opening day of pheasant season, within a mile of each other. Both are young-of-the-year birds. The bottom bird is obviously a juvenile. The top bird is fully colored. To tell whether the top bird is an adult or juvenile, you need to check length and appearance of the spurs.



The spurs on the legs of rooster pheasants are the key to telling whether the bird is a juvenile or adult. In this photo, the two legs on the left came from birds that had survived at least one winter. The legs on the right came from young-of-the-year birds. Spur length on an adult male pheasant is generally 3/4 of an inch or more, measured from the outside of the leg bone to the tip of the spur. Adult spurs are also usually shiny black and sharply pointed. Juvenile roosters have spurs that are less than 3/4 of an inch, measured from the outside of the leg bone to the tip of the spur. Juvenile spurs have soft blunt points and dull coloration.

Spur length can vary from just a small nub on a very young bird, to more than 3/4 of an inch, including leg bone, on adult birds. The general rule for determining a rooster's age

is if the spur is less than a 3/4-inch in length, including the leg bone, the bird is young-of-the-year. If the spur is more than 3/4-inch long, including the leg bone, the bird is an adult.

If there is any doubt as to age based on spur length, spur appearance is the deciding factor. If the spur is dull-colored, and the point is blunt and soft, the bird is a juvenile. If the spur is black, shiny and sharply pointed, the bird is an adult.

In a normal fall, even without looking at the spur, a hunter has an

80 percent chance of guessing whether a rooster in the bag is young-of-the-year or an adult. In an average year about 80 percent of the pheasant bag is juvenile birds. Early in the season, the ratio of juvenile to adult birds is even higher, up to 90 percent. Later in the season, harvest might include only 70 percent juveniles.

Biologists do not use pheasant wings to determine whether a bird is a juvenile or adult. Both juvenile and adult pheasants molt all their primary wing feathers each year, so the appearance or growth stages of the primaries is not used to separate young and adult birds. However, pheasant hunters do send in wings along with legs. Growth of the primaries is measured to determine age (in weeks) of juvenile birds.

Sharp-tailed Grouse...

On their dancing grounds in spring, it's relatively easy to tell the difference between male and female sharp-tailed grouse. Males are doing the dancing. Females are watching.

In fall, differentiating male sharp-tails from females isn't quite as easy, but if you know what to look for, the differences become obvious.

Hunters are asked to pluck some feathers from the top of a sharp-tail's head

to include in a wing envelope. There's a good reason for that. Photos in this section show the area of the sharp-tail head from which the feathers come, and also a comparison between head feathers from a male and female grouse.

When you get a grouse in your hand, pull out a couple of feathers from the top of the head. You should be able to identify sex from those feathers. Male head feathers are black with a buff-colored or tan outside border. Female head feathers exhibit alternating buff and black stripes.

If head feathers don't do it, look at the central tail feathers. The tips of these tail feathers look similar, so you need to pull them out, or pull back the feathers that cover much of the tail. Central tail feathers of a female sharp-tail carry buff-black markings similar to those of their head feathers. Male tail feathers have more white in them, and the striping or markings aren't as consistent. The photo shown at the bottom of this page shows male and female sharp-tailed grouse central tail feathers. Before you read the caption, see if you can tell which is which.



Feathers from the top of a sharp-tail's head hold a key to telling whether the bird is a male or female.



These sharp-tail head feathers came from envelopes sent in by hunters. Female feathers (left) exhibit an alternating buff-black striping pattern. Feathers from a male (right) are all black with a buff-colored border.



Central tail feathers from male and female sharp-tails. The coloration of these feathers is an indicator of sex. The four feathers on the left came from females. Note the alternating buff-black horizontal striping. The four male tail feathers on the right show more white, and the striping pattern is more vertical and not as consistent as on female feathers.

When you examine an entire grouse tail, you can also judge the bird's sex. On a male, the feathers running either direction from the center are white and/or light gray. On a female, those same feathers are often mottled with buff/brown markings.

The photo below shows these characteristics. If you know what to look for, it is sometimes possible to judge the sex of a sharptail as it flushes, by whether the tail is brown or white.



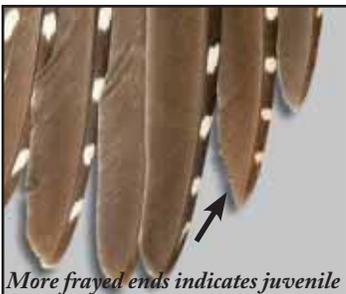
Pulling away feathers that cover a grouse's tail reveals another way to tell males from females. The feathers on either side of center on the female (left) are mottled. The same feathers on a male (right) are white on the ends and silvery-gray closer to the body.

Aging sharptails is similar to aging other grouse species. If the number nine and 10 primaries are still growing – look for the bluish quill, you're likely to see this early in the season – the bird is an adult. If primaries seven and/or eight are growing, the bird is likely a juvenile.

If the quill of all primaries are hard and white, that means they've stopped growing. If that's the case, the appearance of the outer two primaries reveals age. If those feathers are pointed and frayed, the bird is young-of-the-year. If those feathers are rounded and smooth, the bird is an adult.



These close-ups of the outer primaries of two sharptails attest to the occasional difficulty of determining whether a bird is an adult or juvenile. The outer two primaries appear similar. Both outer primaries on the wing in the photo above have smooth tips, indicating an adult bird. But look closely at the number nine (second from right) primary in both photos.



More frayed ends indicates juvenile

The fraying on the end of the ninth primary in the photo above indicates this wing came from a juvenile.



Hungarian Partridge...

Hungarian partridge are the smallest and most widespread of our resident upland game birds. While not a native, they have adapted to North Dakota's climate and habitat to populate every county in the state.

During hunting season, partridge are usually found in coveys. Coveys often flush en masse, presenting a hunter with a variety of targets. Concentrating on one bird, rather than giving in to the temptation of a flock shot, will lead to more partridge in the bag. Once you have a bird in hand, you can tell whether the bird is a male or female by looking at the shoulder area of the wing. Males generally have more rust colored wings than females. Female wings are more brown, and exhibit dark brown cross bars and brown mottling on the shoulder patch. Photos in this section show partridge wings with the distinct markings revealing identification of sex.

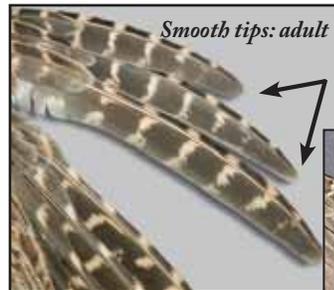
You can tell whether a partridge is young-of-the-year or adult by checking the molt and/or appearance of the outer primary wing feathers. Early in the season, if the number nine or 10 primaries are still growing, the bird is an adult. If primaries eight or seven are growing, then the bird is a juvenile.



The feather pattern on the shoulder of a Hungarian partridge wing will tell you whether the bird is a male or female. A mottled coloration, overall, and brown crossbars on individual feathers, indicate this wing came from a female Hun.

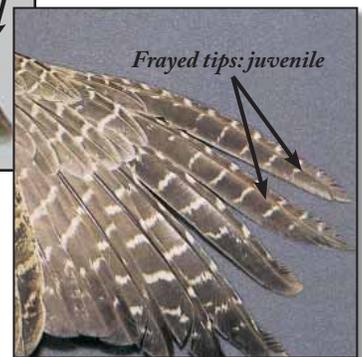


Shoulder feathers on a male Hungarian partridge are somewhat rust-colored. Dark rust crossbars mark some of the feathers, and males do not have dark brown stripes or mottling found on females.



Smooth tips: adult

This wing is from an adult Hun. Note the relatively smooth tips of the outer two primary wing feathers.



Frayed tips: juvenile

This wing is from a young-of-the-year male Hun. Note the frayed edges of the outer two (ninth and 10th) primary wing feathers.

Later in the season, when most birds have fully grown wing feathers, you have to look at the wear on the number nine and 10 primaries. As with many other upland game species, if the outer primaries are rounded and smooth, the bird is an adult. If the primaries are more pointed and the ends are frayed, the bird is a juvenile.

Male: 6" or more

Female: Less than 6"



If the central tail feather measures six inches or longer, the bird is a male. If the feather is noticeably less than six inches, the bird is a female. In the photo above, the top feather measures about seven inches, and is from a male. The bottom feathers measure about 5-3/4 inches, and is from a female.

Ruffed Grouse...

It is the opinion of many hunters that ruffed grouse provide the finest table fare of any upland game bird. Yet, they are not widely hunted in North Dakota because their range is isolated.

Ruffed grouse do have a loyal following, and each year the Pembina Hills, Turtle Mountains and the sandhills in McHenry County yield a respectable harvest.

Ruffed grouse sport different color phases, specifically the color of the band on the tail feathers. The color of the band, whether it's red or gray, is not a reliable indicator of age or sex.

The central two feathers in a ruffed grouse tail, however, do reveal sex, but you have to pull them out to get started.

If you pull the central tail feathers from two ruffed grouse, and one is about an inch longer than the other, you know you have a male and a female, because males have longer tail feathers. If you have only one ruffed grouse, or you have two and the tail feathers are the same length, you need to measure the feather to determine sex.

Generally, the central tail feather of a male ruffed grouse is six inches or longer. Central tail feathers from a female are shorter than six inches.

The photo in the next column shows a central tail feather from male and female ruffed grouse. The longer one measures about seven inches, and is from a male. The shorter one is less than six inches, and came from a female.

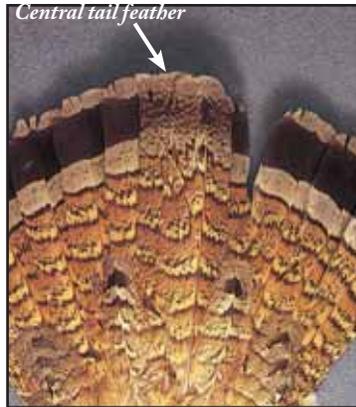
The appearance of the band on the central tail feather can also indicate sex, but this method is not always reliable. A distinct black band indicates a male, but males do not always have a complete band. The band on a female is generally not

complete.

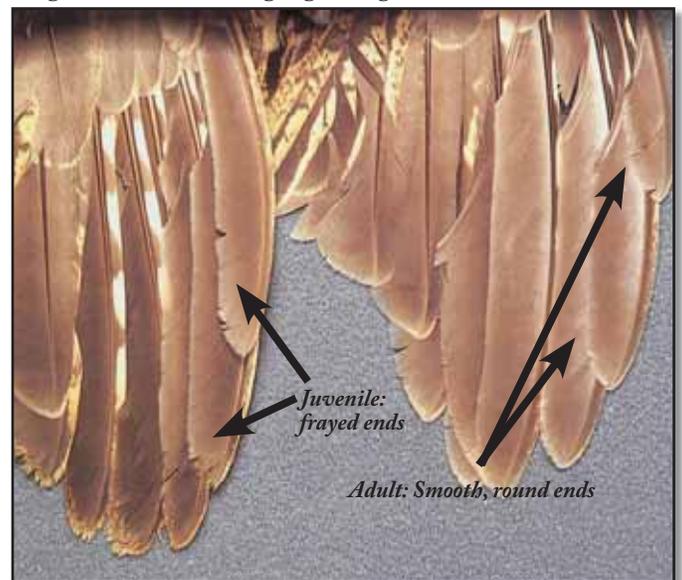
Ruffed grouse are the most difficult species to age. The best way to tell juveniles from adults is to look at the outer wing primaries. If the outer primaries are growing, indicated by the bluish "quill," the bird is an adult. If the seventh or eighth primaries are growing, the bird is a juvenile.

In addition, if the outer two primaries are rounded and smooth, the bird is an adult. If those feathers are more pointed and frayed, the bird is a juvenile. The accompanying photo shows a good example of the difference.

Ruffed grouse live in a more protected environment than other upland game birds. They don't fly as much, and when they do fly, they don't fly as far. Since ruffed grouse don't use their wings as much as other upland game birds, their wing tips may not show much wear, making it more difficult to differentiate young and adult birds whose primary wing feathers are no longer growing.



The best way to determine the sex of a ruffed grouse is to pull out a central tail feather (marked by arrow) and measure it.



This photo of two ruffed grouse wings is a good example for determining age of ruffed grouse. The wing on the left is from a juvenile, characterized by frayed ends on the outer primary feather. The wing on the right is from an adult, distinguished by smooth round edges on the outer primary feathers.