

LATE SHOOTING AND PAIR BONDS

By Norman Seymour

Recent disappointing duck seasons have spawned pleas for more conservative hunting regulations. These reflect concern that we are shooting too many ducks and slowing or preventing the recovery of some species, especially scaup and pintails that are at or near historic lows. One particular regulatory issue involves extended seasons that continue into late January. They are designed to allow hunters to kill more ducks, especially in southern states where high percentage of the continental kill occurs.

This raises the question: What is the biological cost of shooting ducks in late January?

The most obvious result is an increased kill. But my studies over the years have forced me to conclude there are many “hidden” costs that threaten the future abundance of our migrant flocks.

Birds alive in mid-January have a good chance of surviving until the breeding season, which for some females is only a month or two away. How many females that are shot in January, particularly the older, experienced hens that have learned successful nesting and brood-raising skills and are thus especially valuable, would have succumbed to the elements, starved, or been killed by predators before they got the chance to breed? And what about experienced males that females tend to choose as mates? These drakes alert females to danger and protect them from the unwanted and disruptive attention of other males. They contribute in many ways to the reproductive success of hens. Would they too have died from some other cause had they not been shot? I suspect the answer to these questions is that few of these hens and drakes would have otherwise died.

We know that a hen’s body condition affects her reproductive success. Her physical condition depends on her access to abundant, high quality food, not only during the period immediately leading up to nesting, but throughout the winter. Very little is known about hunting’s impact on the ability of birds to obtain the food required to maximize their reproductive potential. Well-fed females produce more and bigger eggs. Obviously, hunting affects where and when ducks feed, and it can prevent them from using preferred feeding sites. Hunters set up where the birds want to be, and the birds want to be where the food is. Most dabbling ducks primarily use vision to locate food, but witness the way that ducks quickly adapt to feeding at night, especially during the light phase of the moon, in response to heavy hunting pressure. This is not their preference. Nor does it offer optimal conditions for feeding. But the ducks are forced to feed at night to avoid hunters.

Drakes, too, can be very disruptive to females. They can inhibit their ability to feed undisturbed. Avoiding these disruptions becomes increasingly important as the breeding

season approaches. Mallard and black duck females, for example, often seek a drake's protection as early as September. This may not be the drake that the female ultimately chooses to breed with, but he may become a contender if he hangs around, chases away other males and generally impresses the female by adequately performing his tasks. This is the laborious testing process a hen uses to evaluate a male as a suitable mate, a process that females may on some level engage in year-round. Indeed, a hen may associate with several males before making her final decision, but having a male around appears very important to her. Interestingly, even though the female is months away from having mature eggs that can be fertilized, she may have sex with a male, presumably to reward him for attending her, and this keeps him around and interested. I have witnessed the sex act as early as September.

It is widely believed that hens choose mates during competitive courtship in which groups of males display to a female, vying for her attention. But it may be that most adult black duck and mallard hens, and perhaps the hens of some other species, are already paired by the time courtship displays are getting into high gear, usually by November. It is likely that older, experienced hens by-pass this process since they are familiar with the local drakes, while younger females rely more on courtship activity to evaluate males. The courtship flights that we see in January may result in the formation of some pairs, but by then the hens of most species, and certainly mallards and black ducks, are already paired. Females have long since made their choice and it is highly unlikely that courtship or anything else will change her mind at this late date.

The three-bird groupings that are so common in mallards and black ducks in January generally consist of a pair and a male. Presumably, neither the drake nor hen of the pair is concerned about this male hanging around. But why does he persist if there is virtually no chance that he will be able to break up the pair? Wouldn't it be more advantageous to look for an unattached female? I have studied black duck trios in Nova Scotia where some of these associations (*ménage à trois*) persist into the breeding season. The three birds seem very "relaxed" with one another. The "hanger on" will even chase away other males that intrude on the pair's territory. What could be in it for him? My conclusion is that a female's mate typically deserts her after she's been incubating her eggs for about 2 weeks. If the female subsequently loses her eggs, to a predator for example, she may re-nest and, if so, she will need a male for sperm to fertilize her new clutch of eggs. With her mate gone, there is a good chance that she will turn to the familiar "hanger on," who is only too ready to become her new mate. Also, being the second male in a trio may be one way that some young males learn reproductive attractiveness and become more competitive in the future.

A second factor involves commitment. How committed are hens to their mates? Will any male do -- or are some drakes special? This is difficult to measure. There are many stories of geese returning to look for fallen mates, but what about ducks? I have seen it frequently, and in many species. I recall one January in Texas when a female blue-winged teal, not a species that forms particularly strong pair bonds, returned to land beside her dead mate. She remained with him until I made the retrieve, flying a mere 50 yards away. Only after 20 minutes, when we shot again at passing birds, did she leave. One October I watched a hen black duck repeatedly fly over her dead mate, despite a

fusillade of nearby shots, some directed at her. I think these hens believed their mates were special. Curiously, I have never seen a male do this.

Late-season selective shooting of drakes obviously breaks up many of these pair bonds, forcing hens to find new mates. Some biologists claim this should pose no difficulty because in ducks there are typically more males than females - a ratio of 55 males to 45 females in mallards, perhaps a greater disparity in other dabblers. But hens invest a huge amount of time and energy in choosing a mate, often starting in September or October to test the suitability of competing males. When a female is this heavily invested in a specific male, it is far too simplistic to say that she will be as well off with any mate because there are many males available. Perhaps unattached males have not been chosen because somehow they are not suitable. Certainly, they are not preferred. A female may reject many males before selecting one. Although females of most species choose a different mate each breeding season, some female black ducks, mallards, mottled ducks, and gadwalls repeatedly choose the same mate. These males must be special.

I have found evidence in black ducks that both experienced females and those breeding for the first time tend to choose older, heavier males. Unlike females, males may not get mates in their first breeding season. In some flocks there are clearly dominant males and females and it is probable that dominant individuals are more reproductively successful than subordinates. If any male will do, why are 40 percent of the black ducks that I study in Nova Scotia already paired in October, six months before breeding season? Why do some hens remain with the same male year round, not just during the breeding season? Indeed, why are certain males apparently preferred by several females, and other males never get a mate?

These behaviors force me to conclude that not all males are equal. Some interesting research on mallards in England suggests that females lay bigger eggs when they are mated to males they prefer. Larger, stronger ducklings are produced from these bigger eggs and so are more likely to survive. Thus, I believe that breaking up pairs in late season negatively affects a female's reproductive success – and this in turn contributes to the declining productivity of our breeding flocks. This reduces the number of ducks we witness winging southward each autumn.

For these reasons, I believe all duck hunting should end by Jan. 15, perhaps earlier in some years.

Norman Seymour, a waterfowl biologist, is the author of "Living A Dream: The Education of a Duck Hunter," available from the Minnesota Waterfowl Association, attention Al Thomas. To order a copy, go to: <http://www.mnwaterfowlassociation.org/>

If we take care of the ducks, the ducks will take care of us.
