

Managing Quail Hunting on Your Place

By Mike Sams, upland game biologist

"Hey Joe, this place must be shot out, we haven't turned a covey in three hours!"
 "Yeah Jim, let's go try a different spot!"

This conversation among quail hunters has probably happened more than once on the Oklahoma range, but can a quality quail hunting spot be over-hunted?

While the high reproductive potential of quail provides a safeguard against "over-harvest," there are a few scenarios where harvest management should be considered. Statewide regulations are broad and allow landowners an opportunity to develop harvest management strategies specific to their needs and the need of quail on their property. By most accounts, quail harvest does not exceed the levels considered detrimental to the population. However, areas prone to high levels of hunting pressure should consider regulating harvest to ensure local quail populations are not put at risk.

Studies of quail population ecology in southern Illinois by John Roseberry, renowned quail researcher at Southern Illinois University, determined that 16 – 28 gun hours/100 acres of quail habitat was acceptable hunting pressure over a variety of densities (density=average amount of quail per acre on a parcel of property). One gun hour is synonymous with one hunter hunting one hour (two hunters hunting four hours = eight gun hours). This formula is easily applied to any ranch but take care to include only acres of quail habitat. For example:

Under this example quail hunting pressure =
 1,500 ac of brushy prairie + 500 ac of post oak savannah = 2,000 ac of quail habitat.
 2,000 ac of quail habitat / 100 ac = 20
 20 x 16 gun hours = 320
 20 x 28 gun hours = 560

pressure should be between 320 - 560 gun hours. Assigning a specific limit depends on your general observations of quail abundance. If quail seem "few" this year compared to others, limit hunting pressure to no more than 320 gun hours. Conversely if quail are "thick," setting a limit of 560 gun hours would be acceptable.

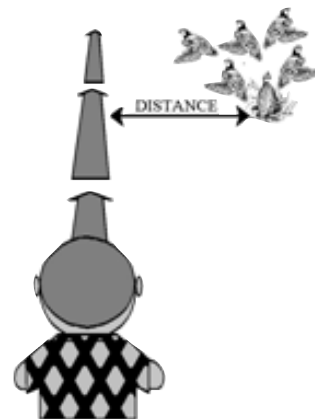
Although simple, setting limits on hunting pressure does not take into consideration the styles and effectiveness of different hunters. The above estimates on pressure limits are not recommended for hunters using motorized vehicles, horses or on areas where quail feeders have been

placed which tend to concentrate both quail and hunting pressure. For these hunting styles that occur on areas of heavy hunting pressure, a harvest quota that sets a maximum number of birds harvested per year would be more appropriate.

Establishing harvest quotas requires substantially more effort because estimates of quail density prior to the hunting season are needed. While some simple techniques have been used to determine density most are inconsistent. Transect counts are viewed as one of the better measures of density but they require considerable effort to conduct.

Transect counts involve:

- Establishing transects crossing the pasture/area in question.
- Measuring the length of transects.
- Traveling the transects either by walk, riding a horse (preferably calm) or



driving (at minimum, run 12 miles of transects for every 640 acres i.e. 4 one-mile transects run 3 miles).

- Upon flushing quail, counting the number and estimating the distance from the transect they were flushed.
- After determining the number of quail on your hunting area, the next step is to deter-

Transect Count Data Sheet

DATE	PASTURE	TRANSECT
10/20/03	Brushy	10 miles
Covey	Birds/Covey	Distance flushed from transect (ft)
1	19	90
2	6	3
3	12	37
Total	37	130

For example:

This data sheet depicts data collected while traveling 10 miles of transects on a 2,000 acre commercial hunting area. Note that data collection should be just prior to the start of the hunting season to ensure the most accurate preseason estimate of density.

Population Calculations:

- 1) **Width of surveyed transect line** = Average flushing distance in feet (x) (130/3) x 2 = 87 feet.
- 2) **Survey area** = Transect length in feet (x) Width of surveyed transect line
 52,800 feet x 87 feet = 4,593,600 square feet
 4,593,600 (43,560 square feet/acre) = 105 acres
- 3) **Density (Acres/Quail)** = Survey area (/) Total number of birds recorded
 105 acres / 37 birds = 2.9 acres/quail
- 4) **Population size** = Acres of hunting area (/) Density
 2,000 acres / (2.9 acres/quail) = 690 quail

mine the number of birds to be harvested. As a rule of thumb, quail harvest of 25 – 45% of the fall (preseason) population is acceptable in fair to good production years. Similar to the range of hunting pressure, whether to use the low value of 25%, 45% or somewhere in-between is dependant on quail abundance. If your property typically has 10 coveys on it and this year you count seven coveys, be conservative. However if you count 10 or more coveys a quota of 45% is acceptable. When quail populations are vulnerable because of habitat fragmentation or extreme lows in population, harvest should not exceed 10% of the preseason population to facilitate population recovery.

Following the example below, 311 birds could be removed from the population without harm if the value (45%) was used

Calculate the number of quail to be harvested by

Available harvest = Population size (x) selected harvest rate (ex. 45%)
 $690 \times 0.45 = 311$ quail available to be harvested.

in your calculation. Hunters should deduct downed-but-not-found birds and cripples from the available harvest since these birds are lost from the population.

As you can see, estimating population size can be a tedious process. However, if your property hosts moderate to heavy hunting pressure, you may want to invest the time required to estimate your quail population size. With your estimate completed, you are then able to not only “fine tune” your harvest goals, but it’s also a great way to monitor and evaluate any habitat enhancement projects you undertake to boost your bird population.



The Bobwhite Quail is one of Oklahoma's most popular game birds and nearly 60,000 hunters pursue quail each year in Oklahoma. Although harvest rates haven't been considered detrimental to the population, there are a few scenerios where harvest management should be considered to ensure plenty of memorable quail hunts on your land.

2003 August Quail Roadside Survey Summary

By Mike Sams, upland game biologist

The Oklahoma Department of Wildlife Conservation has conducted annual roadside surveys in August and October since 1990 to index quail populations across Oklahoma. Currently, Department employees run 83, 20 mile routes in all counties except Oklahoma and Tulsa; some larger counties have two routes. Observers count the number of quail seen to provide an index of quail abundance (number seen/20 mile route) and reproductive success. The survey provides a crude index of annual population fluctuations. Due to inherent biases associated with the survey results are not meant to be predictive, however, the August survey has shown a positive correlation to quail harvest.

This is the 14th year of this survey and the statewide quail index is up 37% from the previous 13 year average (Table 1). All regions reported increases in quail over last year with the exception of the southeast region. The statewide index is up 21% over the 2002 august survey. The largest increases were observed in the southcentral, southwest and southeast regional indices. Quail sighted in the southwestern, southcentral, northwestern

and northcentral regions exceeded their previous 13 year averages. Conversely, the southeastern and northeastern regional indices remain well below their 13 year averages.

Despite drought conditions throughout much of the early nesting season, June rains appear to have negated any effects on early production. Fifty-seven broods were observed during the survey most of which were full grown. Results of the August survey generally don't include quail produced from the second hatch which

occurs in late August but a few landowners and sportsmen have reported seeing young broods in late August. Since a successful second hatch often determines the difference between an average and good quail season the October counts should provide important information about this fall's quail population and season outlook.

Table 1 Quail seen/20 mile route during the August roadside surveys.

Region	Previous 13 yr. average	2002	2003
Statewide	7.1	8.0	9.7
Northwest	8.9	9.8	12.6
Northcentral	4.2	4.1	4.5
Northeast	5.6	2.3	2.9
Southwest	14.7	24.0	32.2
Southcentral	3.4	0.9	4.4
Southeast	6.8	9.2	2.1