Upland Game Bird Trends: Populations and Harvest

The Oregon Department of Fish and Wildlife annually conducts summer production inventories that provide two indices to upland game bird population trends. The first is an abundance index which is the number of game birds, by species, per 10 miles of survey route. The second is a production index, which is the number of chicks observed per number of total hens or adults depending on species. The chicks per “hen” are used for species where the sexes are easily determined in the field or females rear the young, e.g. pheasants, wild turkey, and grouse; chicks per “adult” are used for species where the sexes are not easily distinguished or the males contribute to brood rearing, including chukar, quail, and gray (Hungarian) partridge. These data have been collected continuously in many parts of the state since 1961. When considered collectively, these indices can be a good predictor of fall populations for some of the popularly pursued species such as ring-necked pheasant, California quail, and chukar.

It is normal for upland game bird numbers to fluctuate greatly from year to year and these short-term trends are often due to weather effects on survival and reproductive success. Changes in long-term population trends are often attributable to changes in the quantity and quality of habitat.

Generally, in years of good production, there is an expectation of a higher chick:hen or chick:adult ratio. Likewise, a decrease in chick:hen ratio suggests poorer reproductive success. Young of the year make up the majority of the fall harvest, but chick:hen (or adult) ratios have a weaker ability to predict fall harvest as compared to the abundance index (#birds/ 10 miles). For all upland species, the number of birds observed per 10 miles of survey route is the most useful index for predicting fall harvest.

Since 1996, the Department has used a consistent method for collecting harvest information by calling a random sample of all upland game bird validation holders. Approximately 4,200 hunters are surveyed throughout the hunting season. This survey provides the Department with data by species for total harvest, number of hunters, and hunting effort (hunter-days).

Population and harvest trends are illustrated in the following pages for Oregon’s five most popular upland game bird species: ring-necked pheasant, chukar, California quail, ruffed grouse and “blue” grouse (including both sooty and dusky grouse species). Because of different habitat requirements, some species (e.g. California quail) show increasing long-term population trends, while other species (e.g. pheasants) show long-term declines.

As expected, overall harvest increases when birds are more abundant. Harvest surveys indicate the higher harvest is due to increased hunting effort during the good years and not necessarily an increase in the average daily harvest, which appears to change little from year to year. Simply, in good years hunters are willing to spend more time in the field.
RING-NECKED PHEASANT – EASTERN OR

Figure 1. Eastern Oregon pheasant population trends (1961-2018) as indicated by the number of pheasants observed per 10 miles of survey route (Birds/10 mi. = abundance index) and the average number of chicks per hen (CH/Hen = production index).

Figure 2. Oregon pheasant harvest from 1996-2017. No harvest survey was conducted in 2004.
Figure 3. Chukar population trends in eastern Oregon (1961-2018) as indicated by the number of chukars observed per 10 miles of survey route (abundance index) and the average number of chicks per adult (CH/AD = production index).

Figure 4. Oregon chukar harvest from 1996-2017. No survey was conducted in 2004.
**CALIFORNIA QUAIL – EASTERN OR**

**Figure 5.** California quail population trends (1961-2018) as indicated by the number of quail observed per 10 miles of eastern Oregon survey route and the average number of chicks per adult.

**Figure 6.** Eastern Oregon California quail harvest from 1996-2017. No survey was conducted in 2004.
**Figure 7.** Statewide ruffed grouse population trends (1961-2018) as indicated by the number of grouse observed per 10 miles of Oregon survey route and the average number of chicks per adult.

**Figure 8.** Oregon ruffed grouse harvest from 1996-2017. No survey was conducted in 2004.
“BLUE” GROUSE - STATEWIDE

**Figure 9.** Statewide “blue” grouse population trends (1961-2018) as indicated by the number of grouse observed per 10 miles of Oregon survey route and the average number of chicks per adult.

**Figure 10.** Oregon “blue” grouse harvest from 1996-2017. No survey was conducted in 2004.