4.3.17 Sport hunting

4.3.17.1 Threat summary and background

Controversy over the impacts of sage-grouse hunting dates to the early part of the 20th century (Hornaday 1916). Sage-grouse hunting has been a tradition in Idaho for many generations and many families spent opening weekend camped in sage-grouse country. During the early 1980s over 30,000 hunters pursued sage-grouse every year. Early research suggested that hunting had little impact on sage-grouse populations (June 1963, Crawford 1982, Braun and Beck 1985). Wallestad (1975) reported that despite fluctuating population trends, Montana maintained liberal sage-grouse seasons because of high annual turnover, "law of diminishing returns," and "opening day phenomena." Harvest was generally thought to be a compensatory form of mortality (the proportion of the population that was harvested would die from some other factor if hunting did not occur). However, recent research has suggested that sage-grouse may be more susceptible to over-harvest than other upland game bird species because they have population characteristics that include relatively low reproductive rates, long lives, low annual turn-over, and high over-winter survival (Schroeder et al. 1999).

Autenrieth (1981) and Crawford and Lutz (1985) suggested that hunting may have negative effects on sage-grouse populations. Johnson and Braun (1999) concluded that up to some threshold level, hunting mortality was compensatory, but at or beyond that level, exploitation of sage-grouse may be additive (the number shot adds to those that die from other causes). Recent research in California, Nevada, and Wyoming also provided evidence indicating that hunting at some level may impact subsequent breeding populations (Connelly et al. 2004). Connelly et al. (2000*a*, 2003*a*) concluded that hunting can slow the rate of increase for sage-grouse populations and that harvest losses are likely additive to winter mortality and may result in lower breeding populations. However, a reported direct recovery rate of 7-10% of banded birds in North Park, Colorado, occurred from 1973 to 1990, a period when the number of displaying males counted increased from about 580 to over 1,500 (Zablan et al. 2003).

A more complete review of the impacts of hunting on sage-grouse is provided in Connelly et al. (2004). See also Connelly et al. (2005) for a comprehensive overview of historical and current thinking with respect to harvest management.

In 1953 when the first sage-grouse harvest estimates were developed for Idaho, season regulations were very conservative, as they were for most upland game species in Idaho. This approach reflected uncertainty over the impacts of bag limits

and season lengths on hunter harvest and participation. From 1953 through 1989, seasons varied from 1-14 days, and the estimated annual statewide harvest averaged 40,000 to 50,000 sage-grouse. From 1990 to 1995, the season was 30 days long statewide with an estimated annual harvest of about 25,000 sage-grouse. From 1996 to 2001, season frameworks varied across the state and estimated annual harvest declined to under 10,000 birds. From 2002-2004, seasons remained conservative relative to historic levels and estimated annual harvest averaged about 7,800 birds.

Methods used to estimate harvest varied from 1953 to 1999, and included a voluntary mail survey until 1983, and a telephone survey from 1983 to 1999. The sample size of hunters surveyed and accuracy of these two methods varied as survey budgets expanded and contracted. Since 2000, a special permit has been required to hunt sage-grouse and sharp-tailed grouse. This permit system has allowed for more efficient identification and sampling of Idaho sage-grouse hunters and provides more precise harvest estimates. The Department now interviews about 30% of the total number of permit-holders annually to develop harvest estimates. For example, IDFG interviewed 2,010 (27%) of the estimated 7,382 sage-grouse hunters in 2004.

Based on the annual permit-holder survey, since 2000 the estimated annual harvest of sage-grouse has averaged about 7,800 birds taken by about 6,000 hunters. This is less than 25% of the hunter and harvest estimates made before 1996. The apparent decline in hunter participation probably reflects more restrictive seasons and perceptions of lower sage-grouse populations. These two factors may have reduced interest in sage-grouse hunting although sage-grouse numbers have generally increased in Idaho since 1996. The opportunity to hunt sage-grouse provides population and distribution data (e.g., wing barrels and hunter interviews). In addition, interest in hunting contributes to support for sage-grouse conservation and maintains an Idaho tradition.

In 2004, sage-grouse hunter check stations were conducted on opening weekend at 16 locations throughout southern Idaho (Figure 4-16). Wings collected at check stations and wing barrels placed at 27 sites across the state provide information on the age and sex composition of harvested birds. Using these methods, over 3,000 hunters were interviewed at check stations in 2004 to document hunter activities and about 2,000 wings were collected and aged to document production.

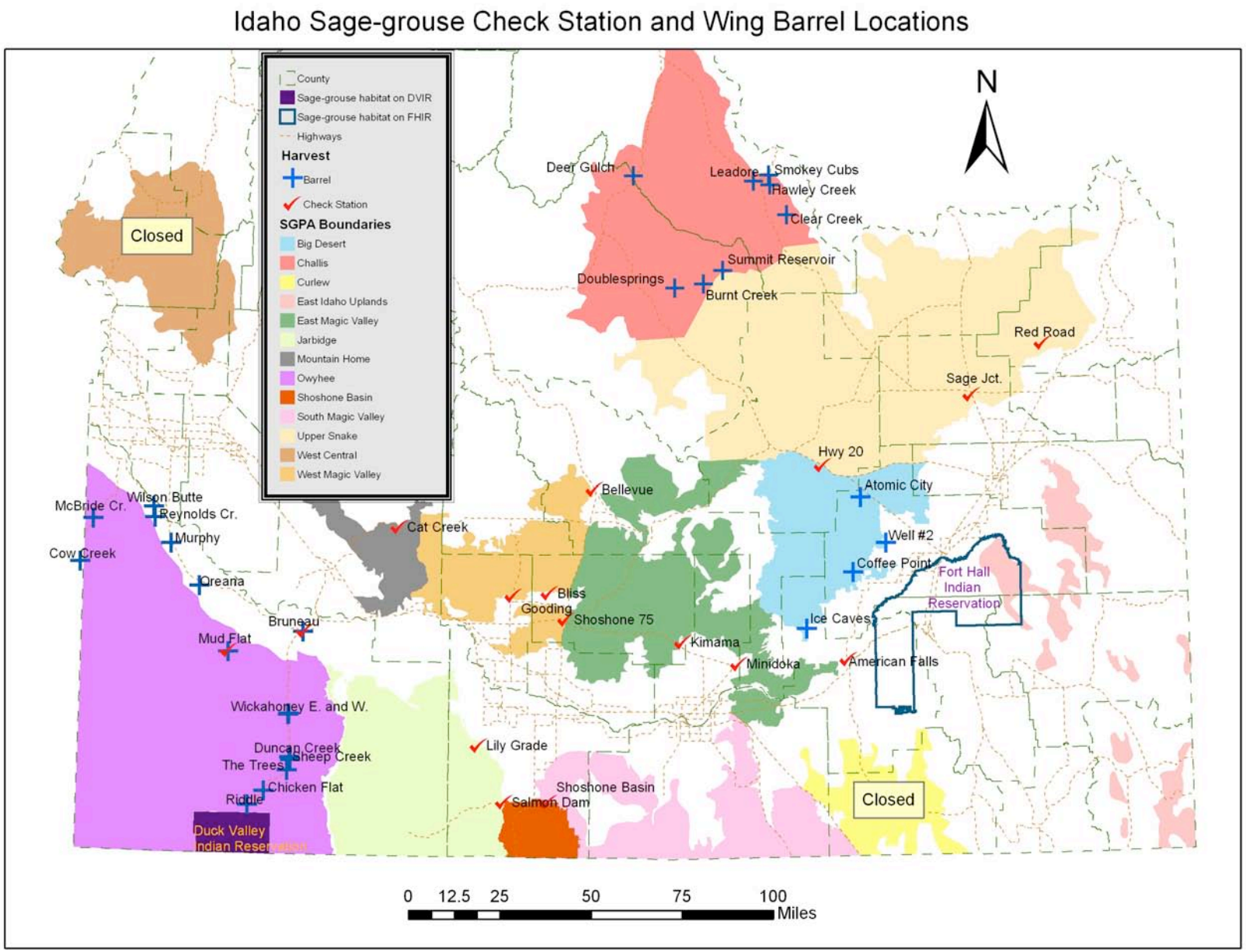

Figure 4-16 Sage-grouse wing barrel and check station locations

Data from wing barrels in the Southwest Region indicate that in an area with a 23-day season, 55% of the total wings (n=665) are collected during opening weekend, 24% the second weekend, 17% the third weekend, and 4% the fourth weekend (2004 data).

Because of concerns over the effect of harvest on sage-grouse, IDFG biologists are actively evaluating the effects of hunting on Idaho sage-grouse. Existing data support the conclusion that the current Idaho sage-grouse season structure is well within suggested hunting guidelines (Connelly et al. 2000*b*, Wambolt et al. 2002).

4.3.17.1.1 Falconry

For the purposes of this Plan the discussion of falconry has been combined with hunting. Falconers consider sage-grouse to be one of the most difficult prey species to catch and consider them a trophy. In 2003, Idaho had 73 licensed falconers of which approximately 15 hunted sage-grouse. Only seven or fewer falconers are believed to hunt sage-grouse more than seven days per year. During the 1980s, IDFG conducted an annual harvest survey of falconers. Because of the small take of quarry by falconry methods, this survey was deemed unnecessary and subsequently discontinued. Based on the small number of falconers that pursue sage-grouse in Idaho, the annual take is believed to be fewer than 100 grouse statewide.

Another potential issue associated with falconry is the possible disturbance of lekking grouse in March. In 1995 at the suggestion of the Idaho Falconers Association, the falconry season for upland game birds, including sage-grouse, was shortened by two weeks to March 15 to minimize any disturbance to sage-grouse near leks. Most sage-grouse breeding occurs after that date. Hunting winter flocks of grouse has not been considered a problem since sage-grouse survival during winter is typically high, and low numbers of falconers pursue the species. If sage-grouse numbers demonstrate a significant decline, the falconry pursuit of the species will need to be readdressed. Removing falconry hunting during the winter season would be the first obvious action. Under current regulations, if areas are closed to firearms hunting, the falconry season is also closed.

4.3.17.2 Summary of key conservation issues

- **Need for better hunter effort and success information:** While current Idaho sage-grouse seasons and bag-limits are generally conservative, there is some uncertainty about the timing and impacts of hunter harvest especially on smaller or isolated populations.

- **Need for juvenile production data:** While wing barrels and hunter check stations are currently operated in many strategic locations, not all hunters encounter check stations or barrels and check stations are generally run only during opening weekend. A higher proportion of wings need to be collected and existing wing data are in need of more careful analysis.

- **Need for season and harvest criteria:** As mentioned previously, current seasons and bag-limits for sage-grouse are conservative, but establishing uniform criteria or "triggers" for change will help ensure consistency in approach across the state.

4.3.17.2.1 Hunting season and bag-limit guidelines

Table 4-14 outlines hunting season and bag-limit guidelines, these are referenced in the following conservation measures.

Table 4-14 Hunting season and bag-limit guidelines for sage-grouse populations

Option	3-year running average of lek counts	Days	Daily Bag
Closed	• Less than 100 males observed • Lek counts are less than 50% of 1996-2000 average counts • Lek data not gathered for population	0	0
Restrictive	• Lek counts are between 50% and 150% of the 1996-2000 average.	7	1
Standard	• Lek counts exceed 150% of the 1996-2000 average.	23	2

4.3.17.3 Sport hunting conservation measures

Goal: Manage hunting to support the increase of sage-grouse populations in Idaho and for the sustainability of smaller, more isolated populations that may be more vulnerable to overharvest.

Issue Addressed	Rationale	Conservation Measure(s)
Need for better hunter effort and success information	To ensure seasons and bag-limits are set using the best-available information and are consistent with ensuring sustainability of sage-grouse	1. Require a special permit to hunt sage-grouse in Idaho to allow for efficient identification and sampling of sage-grouse hunters. 2. Conduct an annual telephone survey in order to contact adequate numbers of sage-grouse hunters to allow for reliable statewide and local harvest estimates.

Issue Addressed	Rationale	Conservation Measure(s)
	populations in Idaho.	3. Evaluate accuracy of current harvest estimate data and implement needed changes. 4. Consider the feasibility and potential value of implementing a permit system with mandatory reporting by all hunters.
Need for juvenile production data.	Juvenile production data are crucial to sage-grouse management and wing collection from hunters is currently the only feasible way to collect these data.	1. Conduct opening weekend hunter check stations at strategic locations statewide (Figure 4-16) to collect harvest information and wings from harvested birds. 2. Place wing barrels at strategic locations to increase the sample of wings from harvested birds. 3. Send voluntary wing envelopes to some Idaho sage-grouse hunters before the hunting season to test whether voluntary return of wings can increase the proportion of wings collected from harvested birds. 4. Annually analyze all sage-grouse wings collected to determine age, sex, and molt pattern of harvested birds. 5. Analyze existing wing data to determine the differences in sex and age of the harvest during the opening weekend, compared to later in the season, and summarize other long-term trends.
Need for season and harvest criteria.	Uniform criteria will ensure seasons and bag-limits are established using a consistent process.	1. Identify sage-grouse populations where overharvest is a risk because of (1) isolated or fragmented habitat, or (2) small numbers of birds. Develop appropriate 2006 hunting season recommendations to reduce risk. 2. The following guidelines should be considered by the Idaho Fish and Game Department when making sage-grouse season recommendations to the Idaho Fish and Game Commission: A. Do not hunt populations where less than 300 birds comprise the breeding population (100 or less males counted on leks). All populations geographically isolated by more than 15 miles will be considered separate populations unless specific data demonstrate otherwise. B. Restrict the hunting season if data indicate harvest of over 10% of the fall population for more than one year.

Issue Addressed	Rationale	Conservation Measure(s)
		C. Use the criteria identified in Table 4-14 when setting hunting seasons for each population. LWGs should evaluate how well these guidelines apply to their areas and provide recommendations to the IDFG by May 1, of each year.

Research, monitoring or evaluation needs: Complete geographic delineation of sage-grouse populations. Conduct monitoring activities to refine understanding of harvest effects on populations, age, and sex-classes. Monitor impact of spring hunting on leks.