

FWP COMMISSION AGENDA ITEM
Supplemental Information – Sage-grouse Lek and Harvest Information

Sage-grouse lek information was collected through the first week of May 2007 and is presented in this supplement. Harvest survey information for 2005 and 2006 was also recently made available (2004 data is not yet available). This supplement is intended for use with the 2007 Upland Game Bird Season Cover Sheet. For clarification on the Cover Sheet, sage-grouse are not officially designated as a candidate under ESA. However, there is a high level of interest in sage-grouse because of ongoing large-scale changes in their habitats and other threats that raise questions as to their status.

Currently, Montana supports sustainable sage-grouse flocks over most of their historical range in the state. Conserving large blocks of functional native sagebrush habitats is the key to long-term survival of sage-grouse, which is reflected in the Montana sage-grouse plan. The adaptive harvest management (AHM) approach to adjusting sage-grouse hunting daily bag limits was also developed in the state plan in an effort to adjust harvest based on changes in sage-grouse abundance (i.e., average high male counts on designated sage-grouse leks or dancing grounds). The FWP Commission endorsed Montana's sage-grouse plan in 2004 and AHM has been in use for the 2005 and 2006 hunting seasons.

AHM leks have been selected based on consistent data strings and geographic representation across the sage-grouse's range in Montana. To be clear, the AHM leks are intended to monitor and describe annual variations of grouse abundance, largely a result of weather factors. They are not intended for long term monitoring of habitats or range-wide population trends. A different monitoring strategy is being developed to capture these long-term trends.

Over the past year, leks were added to and dropped from the original AHM list in an attempt to get better geographic distribution while maintaining approximately the same amount of annual survey effort (Figure 1). Consistent with the state plan, the toggle point or "trigger" for recommending a change in daily bag limit is based on the average high male count from 1981 to current year for all AHM leks. Fewer lek surveys were accomplished prior to 1981. The trigger or average high male count since 1981 is 30 males/lek. Functionally, if the average high male count for a given spring on AHM leks was less than or equal to 30.0 males, AHM would recommend a *conservative* bag limit. If the average high male count rose above 30.0 males, AHM would recommend a *standard* bag limit. Table 1 gives an overview of how AHM would have functioned had it been in place since 1981. Conservative and standard seasons would have been scattered over the years, corresponding to periodic changes in sage-grouse abundance. Table 1 also compares annual harvest and hunting information and actual bag limits. It is worth noting that 2005, with a 2-bird daily bag limit, resulted in a harvest of 3,515 sage-grouse and 2006, with a 4-bird daily bag limit, resulted in a harvest of 4,927 sage-grouse, a 40% increase.

Since adoption of the state plan, the two bag-limit packages were 2 and 4-birds, corresponding with the conservative and standard bag limits, respectively. As described on the cover sheet, FWP has recommended changing the *standard* daily bag limit from 4 birds daily to 3 birds daily. The conservative bag limit package of 2 birds would remain unchanged.

The 2007 average high count of male sage-grouse on AHM leks was 33.6 males, well above the 30-male/lek trigger and down slightly from 2006 (Figure 2).

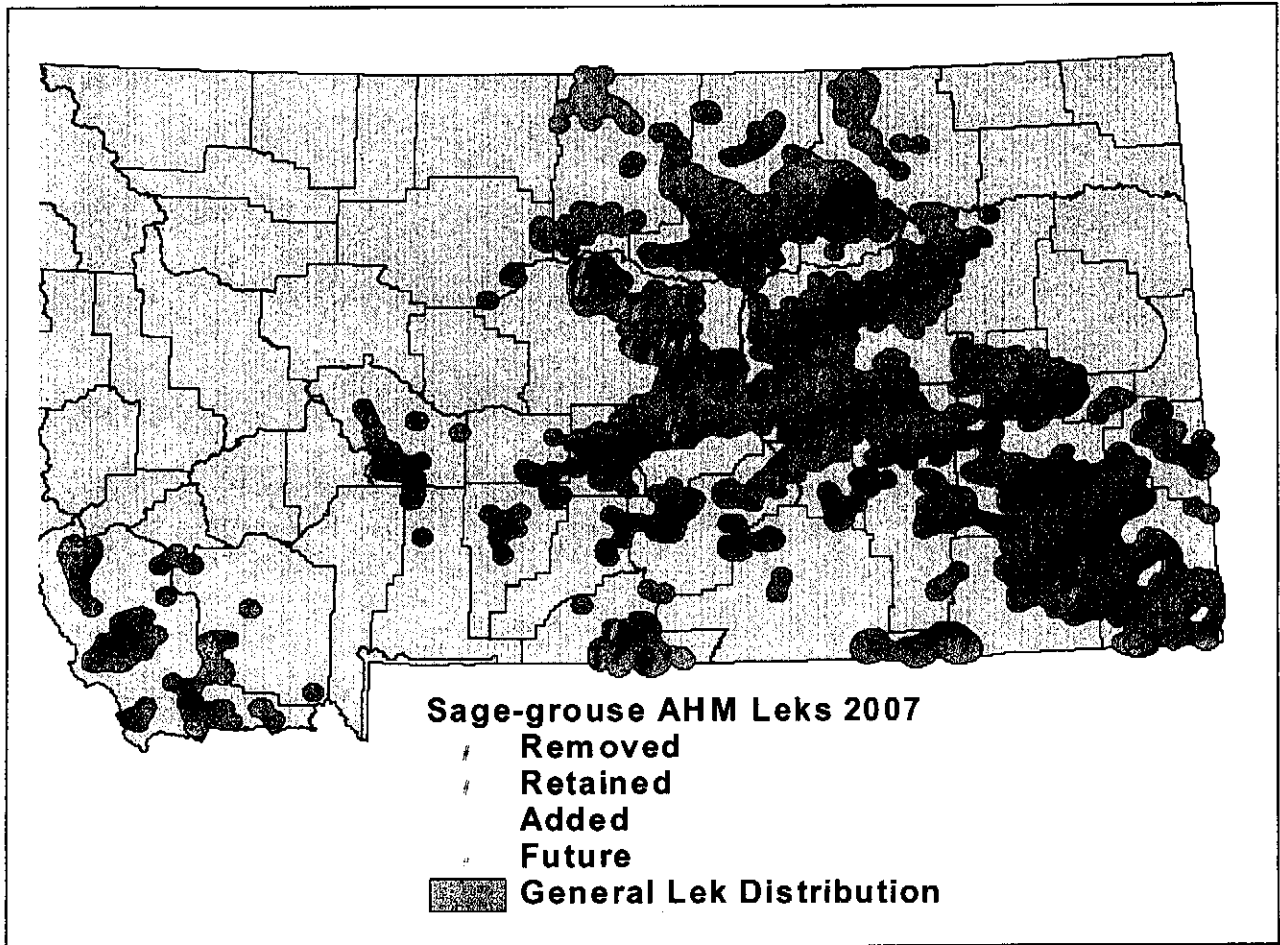


Figure 1. Current, removed, and future sage-grouse leks identified for Adaptive Harvest Management (AHM). Leks identified as "Future" currently lack sufficient data for including in AHM.

Table 1. Summary of average high male counts on AHM leks, hunting regulations, and hunting results. The far right column assigns a bag-limit regulation based on current "trigger point" of 30 males/lek using AHM lek data.

Historical Sage-grouse Data 1981-2007								Retrospective Daily Bag Limit using AHM
Year	Average Males/AHM Lek*	Harvest	Hunters	Hunter-Days	Sage- grouse/ hunter- day	Daily Bag Limit/ Poss. Limit		
1994	17.8	11,000	4,102	19,065	1.7	3/12	2-bird	
1993	19.5	7,717	3,505	15,312	2.0	4/16	2-bird	
1995	19.8	8,400	4,142	19,875	2.4	3/12	2-bird	
1996	20.3	8,224	2,871	20,142	2.4	2/6	2-bird	
1997	20.4	6,372	3,663	19,081	3.0	2/6	2-bird	
1986	21.8	12,686	na	13,788	1.1	3/12	2-bird	
1992	24.2	12,026	4,215	18,083	1.5	4/16	2-bird	
1985	24.7	10,791	na	13,079	1.2	3/12	2-bird	
1998	25.4	7,237	3,989	20,779	2.9	2/6	2-bird	
2004	26.6	na	na	na	na	3/6	2-bird	
1999	27.1	8,150	4,716	28,100	3.4	2/6	2-bird	
1987	27.3	28,578	na	30,674	1.1	3/12	2-bird	
2002	27.9	5,475	2,629	13,515	2.5	3/6	2-bird	
2005	27.9	3,515	2,055	11,317	3.2	2/4	2-bird	
2003	29.5	7,843	3,198	13,600	1.7	3/6	2-bird	
Current AHM Trigger of less than or equal to 30.0 males/lek = 2-bird daily bag								
1990	32.4	20,457	4,828	19,887	1.0	4/16 (SW 3/12)**	3-bird	
2007	33.6	na	na	na	na		3-bird	
2001	34.1	4,525	2,871	13,216	2.9	3/6	3-bird	
2000	34.2	7,806	3,825	16,281	2.1	3/6	3-bird	
1989	34.3	16,178	3,866	15,489	1.0	4/16 (SW 3/12)	3-bird	
2006	34.3	4,927	1,891	9,349	1.9	4/8	3-bird	
1981	35.9	26,680	na	18,126	0.7	3/6	3-bird	
1991	36.6	16,944	4,732	19,575	1.2	4/16 (SW 3/12)	3-bird	
1988	40.5	18,878	na	13,767	0.7	5/20 (SW 3/12)	3-bird	
1982	41.5	22,328	na	17,960	0.8	3/6	3-bird	
1984	43.4	22,972	na	21,836	1.0	4/16	3-bird	
1983	44.8	42,870	na	33,919	0.8	4/16	3-bird	

*Average of high counts for each year.

**SW is southwestern Montana, from Wheatland and Sweetgrass Counties west.

Figures 3-5 compare harvest with hunter effort and hunter turnout. Overall, both sage-grouse hunter numbers and hunter-days have declined over the past 15 years with a corresponding decline in harvest. It appears as well that hunters are harvesting fewer birds per amount of effort (Figure 4).

Direct and indirect investigations suggest hunting to have very little impact on sage-grouse populations in Montana. Sage-grouse research since 2001 in central and southeast Montana, where over 900 birds have been radio-marked, have found hunter harvest in those areas to be a very low percentage of marked birds, well below the 10% cap recommended by national management guidelines. Of these studies, a sage-grouse hunting harvest impact investigation conducted by Montana State University during 2004-05 could not attribute any direct impacts of hunting on

marked-hen survival. This was in spite of the hunted area being relatively close to Billings and largely comprising block management and accessible public lands. During the sage-grouse planning process, harvest as a percent of fall populations was projected to be well below 10 percent when considering lek and harvest information. Since those estimates were developed, over 100 additional leks have been accounted for, further clarifying this point.

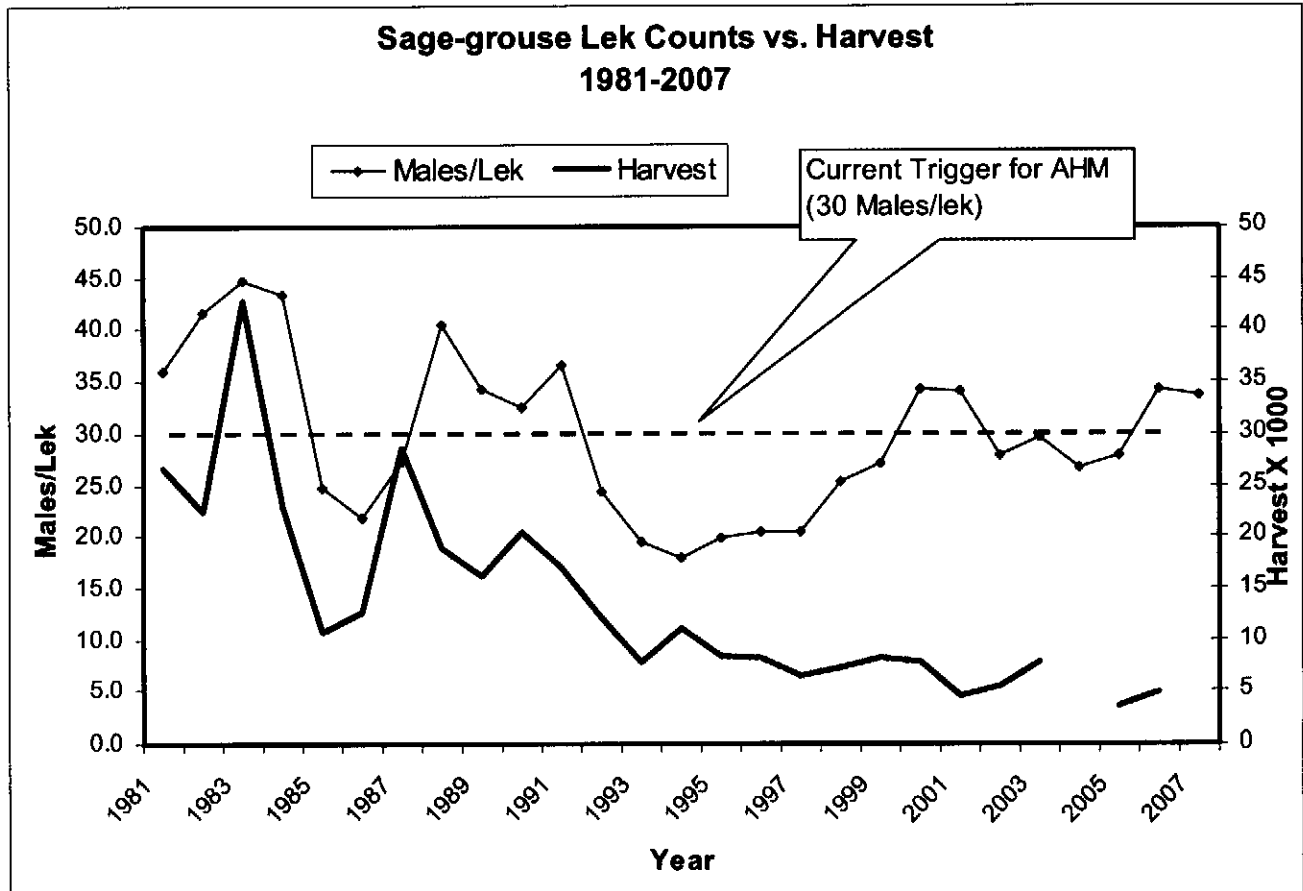


Figure 2. Average high count of male sage-grouse on AHM leks and sage-grouse harvest, 1981 to present.

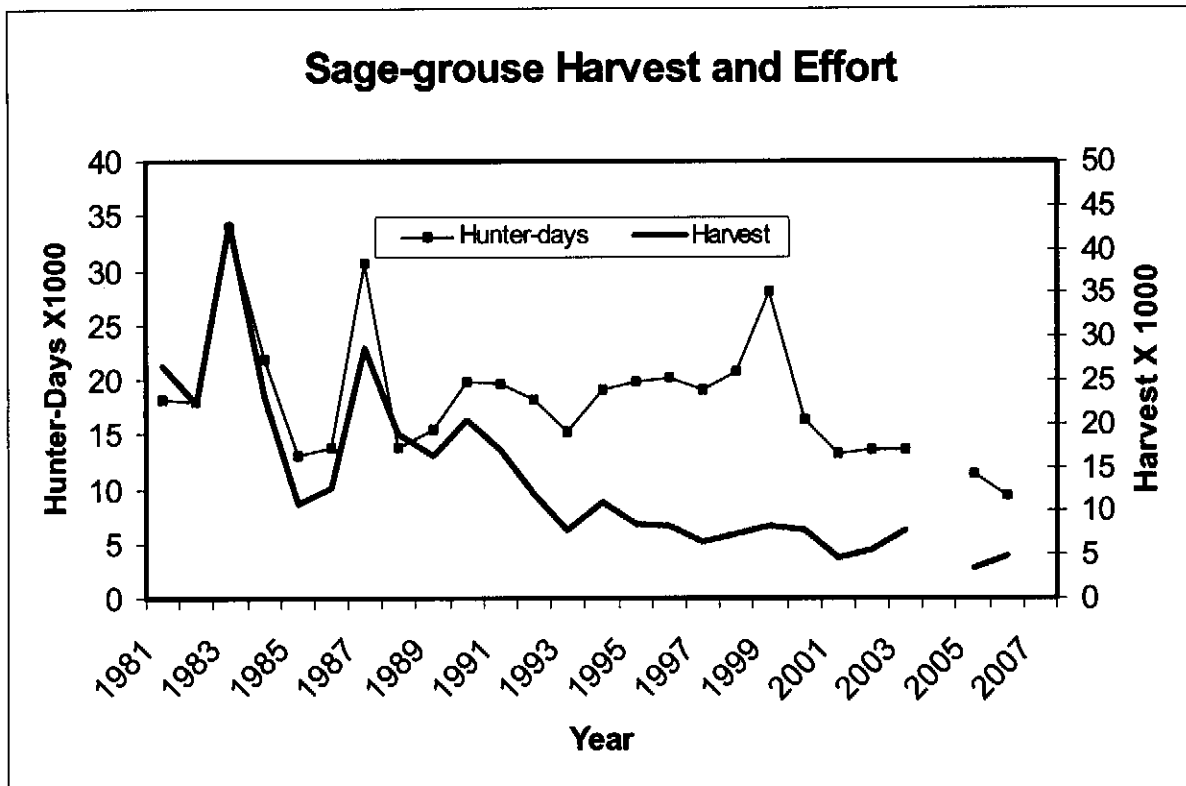


Figure 3. Sage-grouse harvest compared with overall hunter effort.

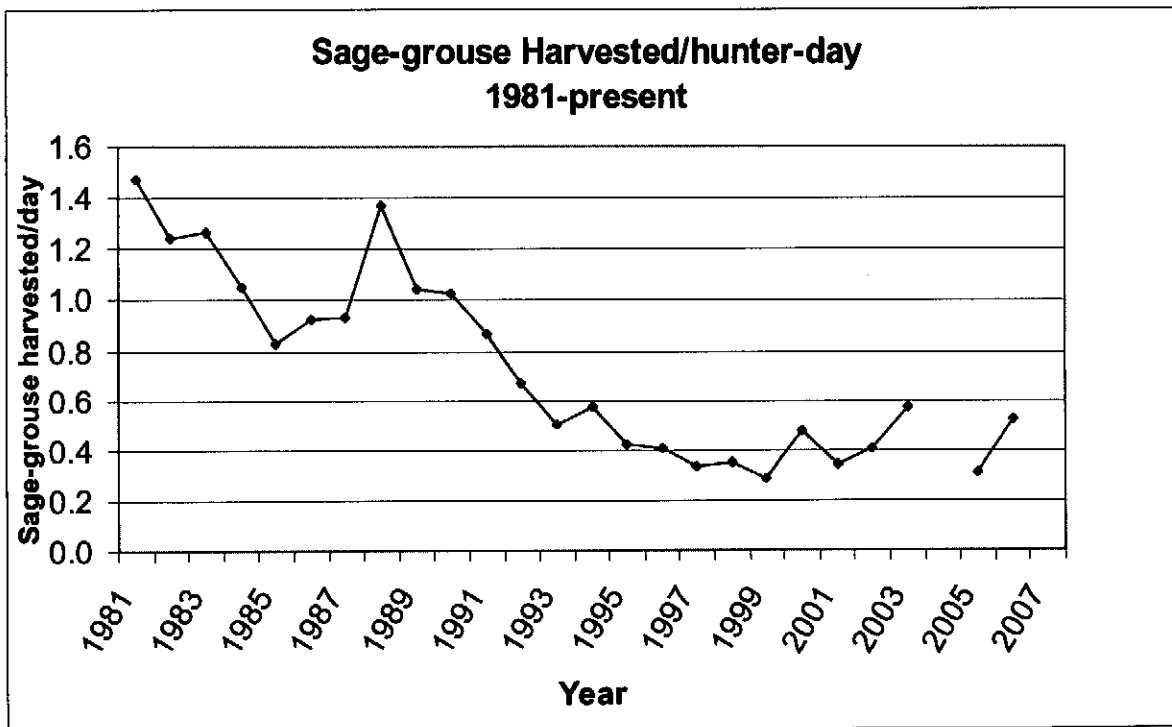


Figure 4. Average number of sage-grouse harvested per hunter-day, 1981-present.

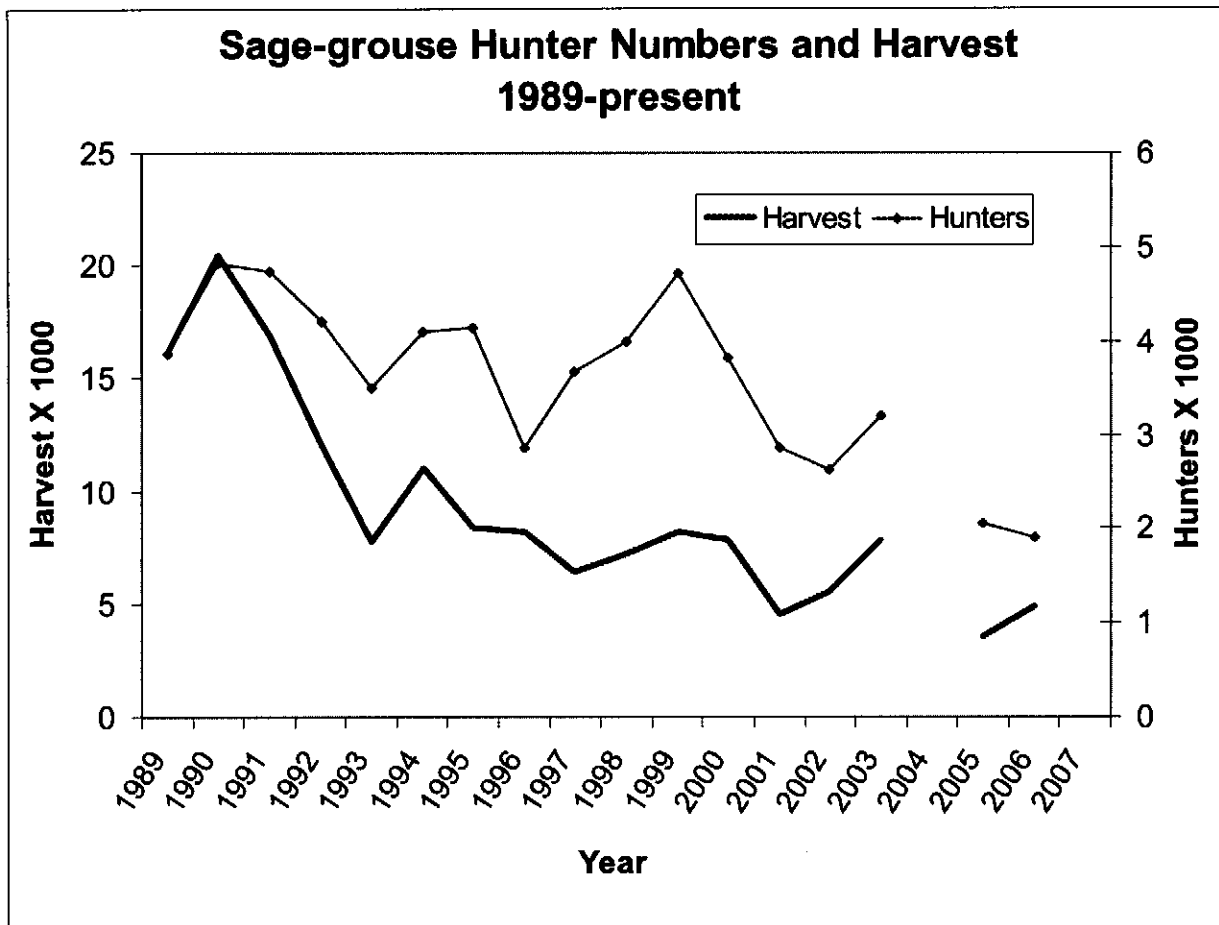


Figure 5. Sage-grouse hunter numbers compared to harvest, 1989-present.