Spring Pheasant Surveys
2007

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Abstract

The Spring Pheasant Survey results indicate that pheasant numbers increased slightly (3%) from 2006 to 2007. Fifty-four crowing rooster pheasant surveys were conducted this past spring to monitor pheasant population trends throughout Wisconsin's pheasant management counties. In addition to an estimation of populations, these surveys also provide evaluation of wild pheasant restoration projects, including Iowa F1 and Jilin F1 release areas, the Dodge County Private Lands Project, the Glacial Habitat Restoration Area and various cooperative habitat projects using Pheasant Stamp, Wings Over Wisconsin, and Pheasants Forever funds. The 2007 pheasant crowing counts indicate a statewide average of approximately 3.0 roosters/mile^2, a 3% increase from the 2006 average of 2.9 roosters/mile^2.

Methods

Crowing Rooster Surveys -- Spring pheasant surveys were conducted during April and May. Observers initiated counts on established routes approximately 45 minutes before sunrise and finished within 1-1.5 hours after sunrise. Observers listened for 3 minutes at stops 0.5 mile apart along route and marked locations of crowing roosters on field maps. Surveys were only conducted when winds were less than 10 miles per hour. Throughout the Dodge County Project area, the GHRA and the GHRA control area, the mean of two counts was used to achieve the roosters/mile^2 index. In the other areas, surveys were run twice and the higher of the two counts were used for comparison. On a few routes, a crowing survey was conducted only once.

Sex Ratio Surveys -- Winter sex ratios are used to extrapolate hen densities from spring crowing rooster counts. In past years, observers searched winter concentration areas and recorded the number of roosters and hens seen in order to develop area-specific sex ratios. New pheasant sex ratios were calculated for St. Croix, Green, Rock and Iowa Counties in 2004. Unfortunately, due to budget and personnel constraints, these pheasant surveys have not been conducted in a number of counties for several years. For the remainder of the 2006-2007 data, the sex ratio was assumed to be the long-term Dodge County Project average of 2.5 hens/rooster. These ratios are used to calculate a Hen Index for each survey area as a method of estimating hen density.

Results

Overall, 2007 surveys indicate a slight increase in rooster density with a state survey mean of 3.0 roosters/mile^2 compared to 2.9 roosters/mile^2 in 2006. Of the routes evaluated, 33% increased (n=17), 61% (n=31) declined and 6% (n=3) showed no change when compared to the 2006 counts (Table 1). The 2007 statewide hen index data indicates that hen densities remain above the long-term average, with this year's index at 8.0 hens/mile^2, and the long-term average at 6.0 hens/mile^2 (Figure 7).

Dodge County Project -- The Dodge County Project was initiated in 1984 to evaluate the effectiveness of private land habitat management and development in areas that have satisfactory winter cover and remnant pheasant populations. Nesting cover and food plots were developed in a two-mile radius around six different major pheasant wintering areas. Although the management phase of this project concluded in 1994, surveys continue to be conducted to monitor pheasant populations.

Spring surveys indicated an overall 25% population decrease in the 5 Dodge County survey areas, decreasing from 3.3 roosters/mile^2 in 2006 to 2.5 roosters/mile^2 in 2007 (Table 1). The 2007 hen index data indicates that hen densities have dipped slightly below the long-term average for Dodge County, with this year's index at 6.2 hens/mile^2, and the long-term average at 6.3 hens/mile^2 (Figure 1).

Glacial Habitat Restoration Area -- The Glacial Habitat Restoration Area (GHRA) is a habitat improvement program initiated in 1990 focused on purchasing, easing, and improving wildlife habitat through scattered parcels of property in 24 townships in parts of Winnebago, Fond du Lac, Dodge, and Columbia Counties. Wetland and grassland restoration projects focused on improving habitat for pheasants and other upland and wetland wildlife species are conducted throughout the project area. The goal of the project is to restore 11,000 acres of drained wetlands and 38,000 acres of grasslands within the area's boundaries.

Population indices on the GHRA surveyed areas averaged 7% lower than in 2006, with a range for individual surveys from 0.7 to 3.6 roosters/mile^2 (Table 1). There was an average of 2.2 roosters/mile^2 in 2007 compared to 2.4 roosters/mile^2 in 2006. The 2007 hen index data indicates that hen densities are above the long-term average for the Glacial Habitat Restoration Area, with this year's index at 5.5 hens/mile^2 and the long-term average at 4.9 hens/mile^2 (Figure 2).

GHRA Control Areas -- GHRA control area surveys are conducted in order to compare pheasant numbers where active management under the Habitat Restoration Area Program is not occurring. The number of roosters/mile^2 decreased in these units by 7% to 2.2 roosters/mile^2 in 2007 compared to 2.4 roosters/mile^2 in 2006 (Table 1). The mean hen index in the GHRA Control Area was 5.6 hens/mile^2 in 2007. This is a 7% decrease from 6.0 hens/mile^2 in 2006, but is still above the long-term average of 4.8 hens/mile^2 (Figure 3).

Other Control Areas -- In order to effectively evaluate the Iowa F1 and Jilin F1 projects, department personnel in conjunction with Wings Over Wisconsin and Pheasants Forever members ran surveys on control areas in St. Croix, Rock, Jefferson, and Polk counties. These areas have generally had recent habitat improvements due to CRP or pheasant stamp projects, but they have not received wild bird releases. The number of roosters/mile^2 increased in these units by 33% to 5.0 roosters/mile^2 in 2007 compared to 3.8 roosters/mile^2 in 2006 (Table 1). The mean hen index on these survey routes was 15.2 hens/mile^2 in 2007. This is a 14% increase from 13.4 hens/mile^2 in 2006 and continues to be above the long-term average of 10.4 hens/mile^2 (Figure 4).

Iowa Pheasant Release Area -- The average number of roosters/mile^2 in the Iowa Pheasant Release Area decreased 3% from 2.4 roosters/mile^2 in 2007 compared to the 2006 average of 2.5 roosters/mile^2 (Table 1). The 2007 hen index data indicates that hen densities are above the long-term average for the Iowa Pheasant Release Areas, with this year's index at 6.7 hens/mile^2 and the long-term average at 5.7 hens/mile^2 (Figure 5).

Jilin (Manchurian) Pheasant Release Areas -- The number of roosters/mile^2 increased 17% in the Jilin Pheasant Release Area. There were 3.4 roosters/mile^2 in 2007, which was down from the 2006 average of 2.9 roosters/mile^2 (Table 1). The number of roosters/mile^2 ranged from 0.7 in the Manitowoc-2 Rivers/2 Creeks area to 6.7 in the Green Lake-Markesan release area. The 2007 hen index data indicates that hen numbers are above the long-term average for the Jilin Pheasant Release Areas, with this year's index at 8.5 hens/mile^2 and the long-term average at 6.8 hens/mile^2 (Figure 6).

Discussion

Survey results indicate that pheasant numbers increased only slightly from 2006 to 2007. The 2007 pheasant crowing counts indicate a statewide average of approximately 3.0 roosters per mile^2, only a 3% increase from 2.9 roosters/mile^2 in 2006. The long-term trend in pheasant hen populations currently looks positive relative to the 1980's with a statewide hen index of 8.0 hens/mile^2 in 2007, and a long-term average of 6.0 hens/mile^2.

Throughout much of the state, winter temperatures (2006-2007) continued to be above average as has been the case in more recent years. While most areas had near normal precipitation levels, the northern portion of the state remained in drought conditions. Data gathered from the 10-week brood surveys should give a better indication of 2007 production. Past research from Wisconsin has shown that weather during pre-nesting is the biggest factor in year-to-year population fluctuation.

Although survey information is published yearly, it is important to remember that **long-term trends** and comparison to **long-term averages** are more valuable than year-to-year or area-to-area comparisons. Localized population changes typically cannot be pinpointed to one cause; however, some reasons may include isolated weather conditions, land use changes, or crowing count survey or surveyor discrepancies. In addition, on occasion there is incomplete survey information, or uncompleted routes. Thus, when making a comparative analysis, all of these factors must be taken into consideration. Nevertheless, long-term annual index changes for many areas with a similar treatment should provide good indications of the direction of population trends for these treatment areas. Continued emphasis is needed on research, habitat development, management, and maintenance to ensure stable pheasant populations in the future.

Table 1. *Relative change in 2007 pheasant crowing cock densities and hen indices relative to 2006 results.*

Project	Unit	Method	Roosters per sq.mi- '06	Roosters per sq.mi- '07	% Change for Roosters	Hens/ Cock	Hen Index '06	Hen Index '07	% Change for Hens
Dodge County									
	Elba	Mean 2	3.1	2.4	-24%	2.5	7.8	5.9	-24%
	Calamus	Mean 2	2.8	2.8	-1%	2.5	7.0	7.0	-1%
	Trenton	Mean 2	n/a	2.3	n/a	2.5	n/a	5.7	n/a
	Clyman	Mean 2	2.7	2.3	-14%	2.5	6.8	5.8	-14%
	Fountain Prairie	Mean 2	4.3	2.6	-40%	2.5	10.8	6.5	-40%
Dodge Co. Mean			**3.3**	**2.5**	**-25%**		**8.1**	**6.2**	**-24%**
GHRA									
	Winnebago-Pumpkinseed	Mean 2	0.9	1.1	23%	2.5	2.3	2.8	23%
	Winnebago-Waukau	Mean 2	0.4	0.7	68%	2.5	1.0	1.7	68%
	Winnebago-Pickett	Mean 2	1.7	1.6	-4%	2.5	4.3	4.1	-4%
	Fond du Lac-Ripon	Mean 2	1.7	3.3	96%	2.5	4.3	8.3	96%
	Fond du Lac-Rosendale Cntr.	Mean 2	1.8	2.1	14%	2.5	4.5	5.2	14%
	Fond du Lac-Silver Creek	Mean 2	3.0	2.8	-6%	2.5	7.5	7.1	-6%
	Fond du Lac-Eldorado	Mean 2	3.4	2.2	-36%	2.5	8.5	5.5	-36%
	Fond du Lac-Ladoga	Mean 2	3.9	3.6	-7%	2.5	9.8	9.0	-7%
	Dodge-Alto	Mean 2	1.8	1.4	-25%	2.5	4.5	3.4	-25%
	Dodge-Fox Lake	Mean 2	2.3	2.1	-10%	2.5	5.8	5.2	-10%
	Dodge-Randolph	Mean 2	1.9	2.7	44%	2.5	4.8	6.9	44%
	Columbia-Courtland	Mean 2	3.8	2.2	-43%	2.5	9.5	5.5	-43%
	Columbia-Fountain Prairie	Mean 2	4.4	2.9	-33%	2.5	11.0	7.4	-33%
GHRA Mean			**2.4**	**2.2**	**-7%**		**6.0**	**5.5**	**-7%**
GHRA Controls									
	Columbia-Otsego	Mean 2	2.8	2.5	-11%	2.5	7.0	6.3	-11%
	Columbia-Hampden	Mean 2	2.9	4.3	49%	2.5	7.3	10.8	49%
	Columbia-Lebanon	Mean 2	1.9	2.0	4%	2.5	4.8	5.0	4%
	Green Lake-Puckyan	Mean 2	2.1	1.2	-45%	2.5	5.3	2.9	-45%
	Dodge-Ashippun	Mean 2	1.3	1.0	-27%	2.5	3.3	2.4	-27%
	Dodge-Clyman	Mean 2	2.7	2.3	-15%	2.5	6.8	5.8	-15%
	Dodge-Elba	Mean 2	3.1	2.4	-22%	2.5	7.8	6.1	-22%
GHRA Control Mean			**2.4**	**2.2**	**-7%**		**6.0**	**5.6**	**-7%**
Other Controls									
	St. Croix-New Richmond	2 cts/ 1 wy	3.9	4.6	19%	2.4	9.4	11.1	19%
	Rock-West Beloit	2 cts/ 1 wy	5.1	4.7	-7%	4.9	25.0	23.2	-7%
	Jefferson-Oakland	2 cts/ 1 wy	2.3	1.4	-37%	2.5	5.8	3.6	-37%
	Polk	2 cts/ 1 wy	n/a	9.2	n/a	2.5	n/a	22.9	n/a
Other Controls Mean			**3.8**	**5.0**	**33%**		**13.4**	**15.2**	**14%**
Iowa F1 Releases									
88-90	Rock/Dane - Union Township	2 cts/ 1 wy	0.5	0.6	22%	4.9	2.5	3.0	22%
88-90	Iowa - Western	2 cts /1 wy	2.1	2.6	22%	3.9	8.2	10.0	22%
91-92	Green-North Monroe	2 cts/ 1 wy	6.0	5.0	-17%	3.8	22.8	19.0	-17%
91-93	St. Croix-Boardman	2 cts/ 1 wy	3.5	7.0	99%	2.4	8.4	16.7	99%
94-96	Manitowoc-Collins	2 cts/ 1 wy	3.3	3.3	1%	2.5	8.3	8.3	1%
94-96	Walworth-Spring Prairie	1ct / 1wy	0.8	0.2	-73%	2.5	2.0	0.6	-73%
94-96	Columbia-Springvale	2 cts/ 1 wy	1.7	1.8	5%	2.5	4.3	4.5	5%
94-96	Dodge-Mayville	2 cts/ 1 wy	1.3	0.7	-47%	2.5	3.3	1.7	-47%
94-96	Fond du Lac-Washington	2 cts/ 1 wy	n/a	n/a	n/a	2.5	n/a	n/a	n/a
96-98	Grant - Clifton Township	2 cts/ 1 wy	n/a	4.6	n/a	2.5	n/a	11.5	n/a
96-98	Dodge-Beaver Dam1	2 cts/ 1 wy	1.1	1.8	64%	2.5	2.8	4.5	64%
97-99	Iowa - Eastern	2 cts/ 1 wy	2.1	1.3	-38%	3.9	8.2	5.1	-38%
97-99	Sheboygan Marsh	2 cts/ 1 wy	2.0	1.0	-50%	2.5	5.0	2.5	-50%
97-99	Pepin/Dunn	2 cts/ 1 wy	2.9	2.7	-8%	2.5	7.3	6.7	-8%
97-99	Winnebago-Rat River	2 cts/ 2 wy	2.6	1.4	-46%	2.5	6.5	3.5	-46%
00-02	Green Lake-Markesan F1	2 cts/ 1 wy	4.4	3.2	-27%	2.5	11.0	8.1	-27%
00-02	Manitowoc-Centerville	2 cts/ 1 wy	1.1	1.0	-5%	2.5	2.8	2.6	-5%
00-02	Eau Claire-Clear Creek	2 cts/ 1 wy	3.6	2.8	-23%	2.5	9.0	6.9	-23%
00-02	Walworth-New Richmond	1ct / 1 wy	1.2	1.2	-3%	2.5	3.0	2.9	-3%
00-02	Green Lake-Manchester	2 cts/ 2 wy	4.9	3.9	-20%	2.5	12.3	9.8	-20%
Iowa F1 Mean			**2.5**	**2.4**	**-3%**		**7.1**	**6.7**	**-5%**
Jilin F1 Releases									
92-93	Dane-EDHRA	2 cts/ 1 wy	1.8	2.6	45%	2.5	4.5	6.5	45%
92-94	Dunn Co.-Muddy Creek W.A.	2 cts/ 1 wy	2.5	6.1	144%	2.5	6.3	15.2	144%
92-94	Green Lake-Markesan (Jilin)	2 cts/ 1wy	5.7	6.7	17%	2.5	14.3	16.7	17%
92-94	Fond du Lac-Waupun	2 cts/ 1 wy	3.5	2.6	-26%	2.5	8.8	6.5	-26%
92-94	Jefferson-Waterloo	1 ct / 1 wy	2.5	n/a	n/a	2.5	6.3	n/a	n/a
93-95	Fredonia *	2 cts/ 1 wy	3.5	n/a	n/a	2.5	8.8	n/a	n/a
93-95	Holland-Belgium	2 cts/ 1 wy	3.3	1.7	-48%	2.5	8.3	4.3	-48%
95-97	Manitowoc-2 Rivers/2 Creeks	2 cts/ 1 wy	0.4	0.7	83%	2.5	1.0	1.8	83%
Jilin F1 Mean			**2.9**	**3.4**	**17%**		**7.3**	**8.5**	**17%**
State Mean			**2.9**	**3.0**	**3%**		**8.0**	**8.0**	**0%**

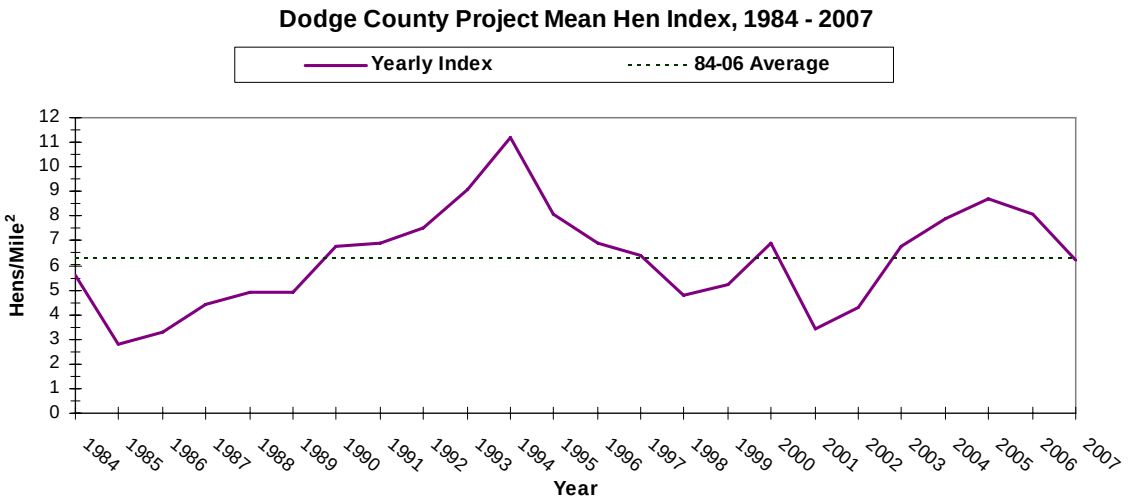

Figure 1. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on study areas of the Dodge County Private Lands Project, 1984-2007.*

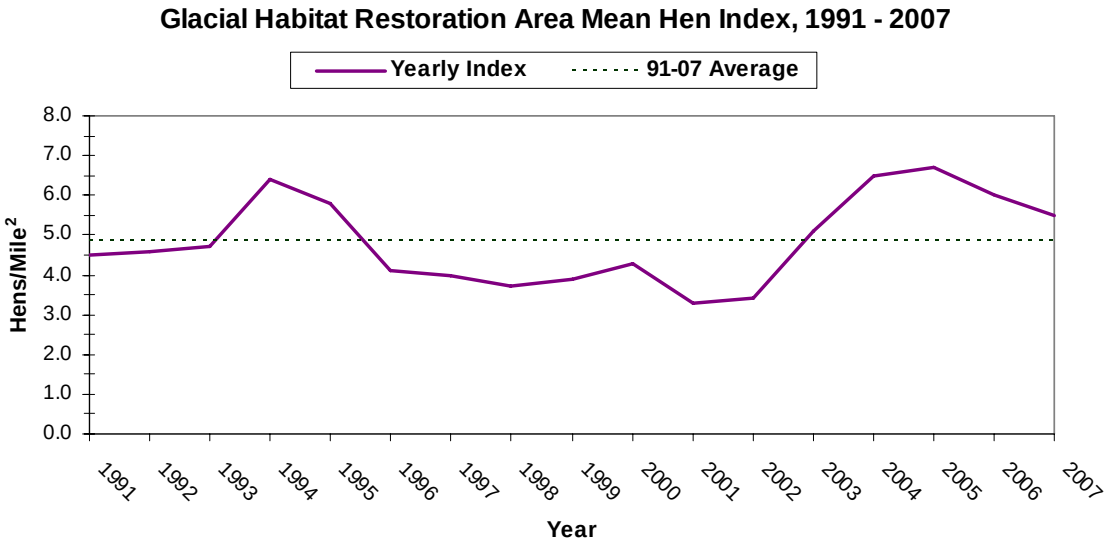

Figure 2. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on the Glacial Habitat Restoration Area, 1991-2007.*

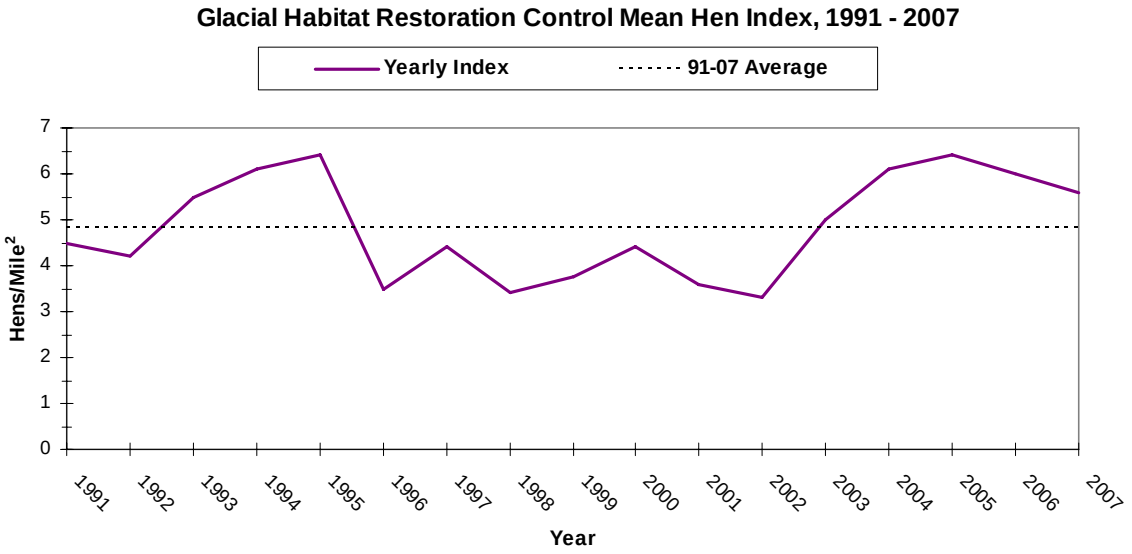

Figure 3. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on GHRA control areas, 1991-2007.*

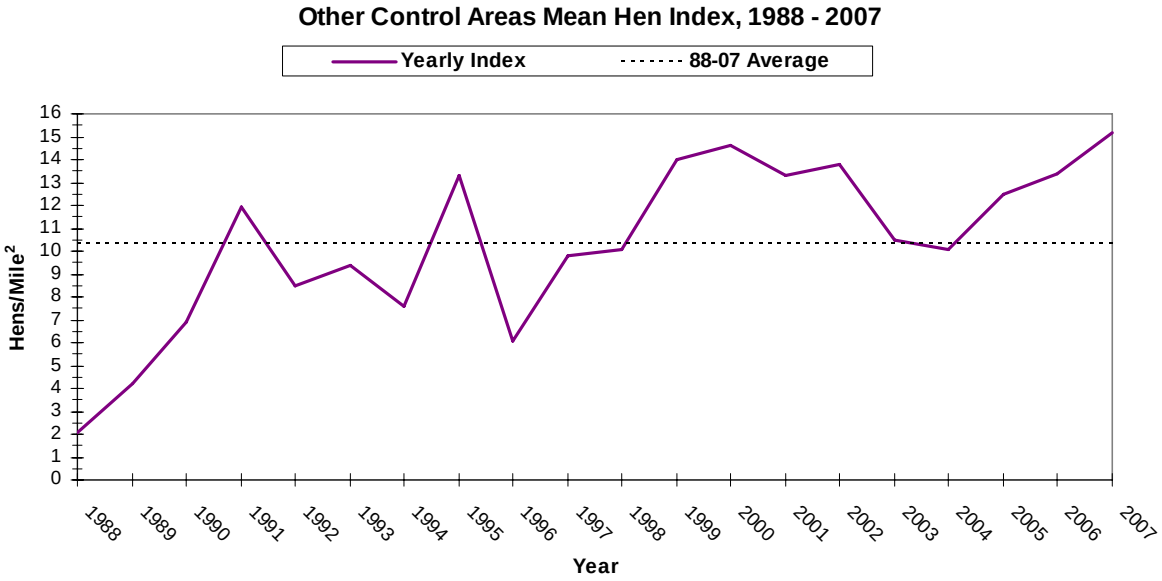

Figure 4. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on control areas around Wisconsin, 1988 –2007.*

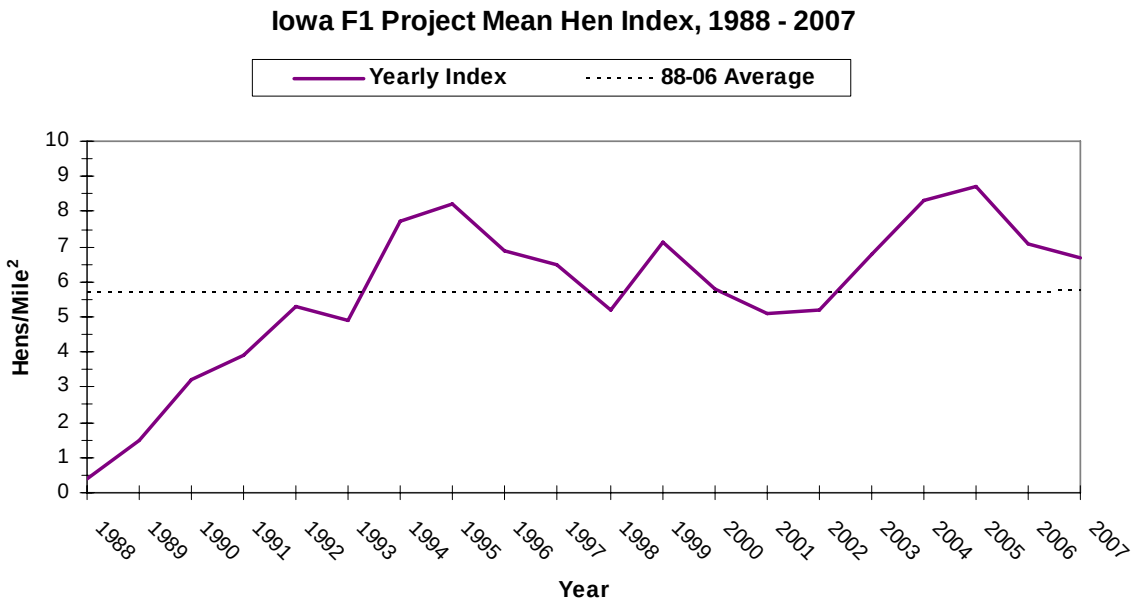

Figure 5. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on Iowa F1 pheasant release sites, 1988 –2007.*

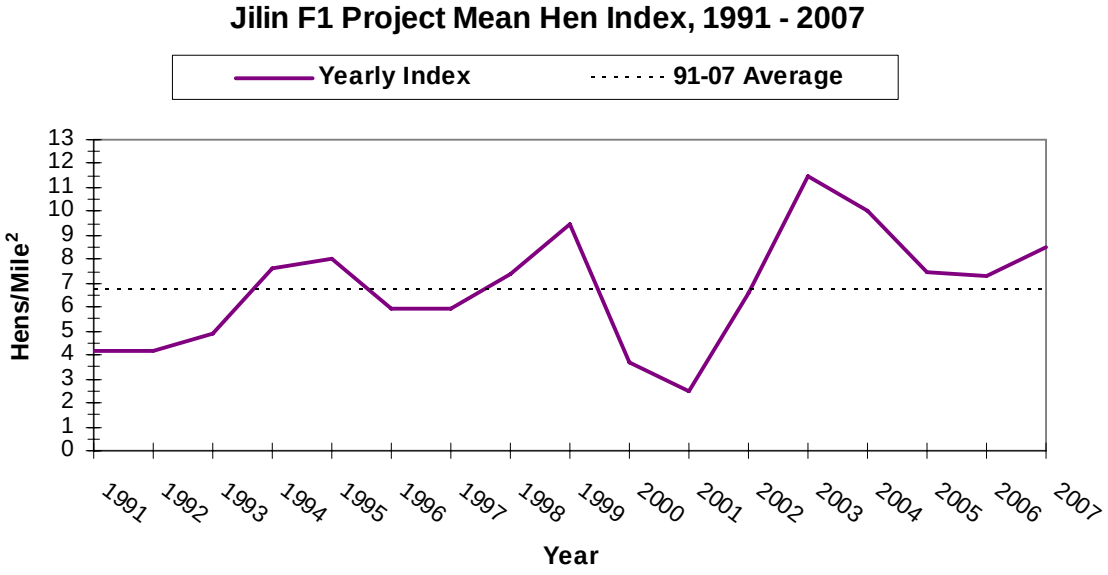

Figure 6. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on Jilin F1 pheasant release sites, 1991-2007.*

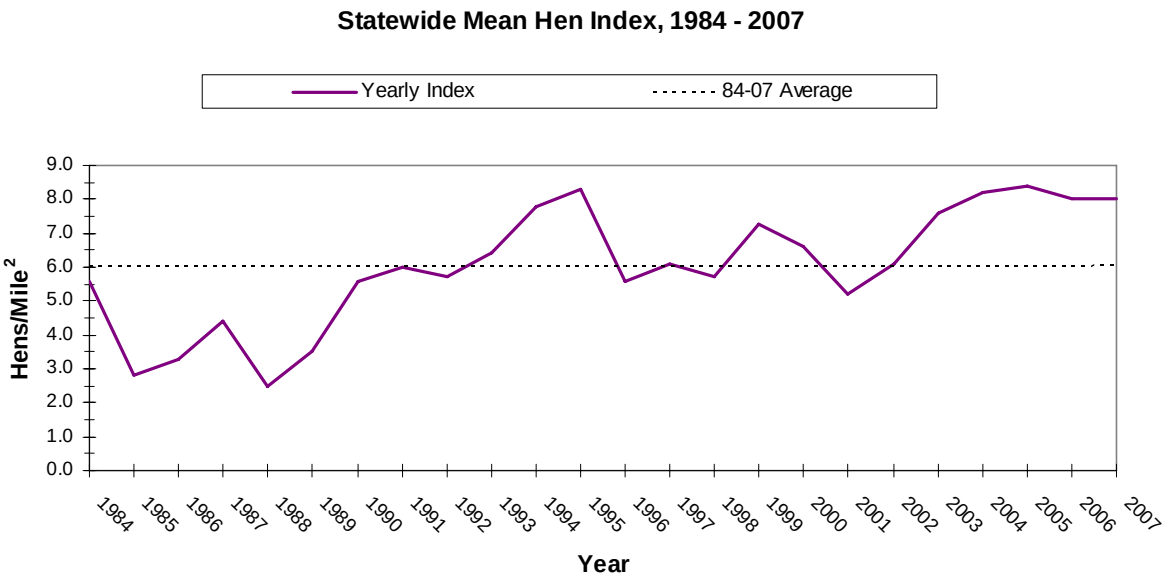

Figure 7. *Statewide mean pheasant hen indices (cocks heard/square mile x hens/cock), 1984-2007.*