



No. 910	<b>AUTHOR:</b> Steven E. Backs, Wildlife Research Biologist	<b>Date</b> 2/17/06
	<b>TITLE:</b> Wild Turkey Brood Production - Summer 2005	

**Abstract:** Wild turkey brood production in 2005 was 2.3 poult:hen; a significant decrease from the 4.4 poult:hen recorded in 2004 and significantly less than the average 3.3 poult:hen of the previous 5 years (2000-2004). The proportion of hens observed with poults was 74%, slightly less than the 77% observed the previous 5 years. Reasons for the below normal brood production in 2005 are uncertain. The general decreasing trend (1993-2005) in the annual summer production of wild turkeys is indicative of a population whose growth rate is beginning to level off to "maintenance" or stable population level.

**Work Plan:** # 200301 Federal Aid Study/Job No.: W-26-R-36; Job 16-G-4.

## METHODS

In 2005, district wildlife biologists and conservation officers recorded observations of wild turkey hens and poults during July and August. The wild turkey summer brood Production Index (PI) is the total poults/total adult hens (poults:hen ratio) compiled from July and August into one combined index. The August production index is generally higher than in July due to "gang" brood behavior that occurs when several individual broods and hens without broods combine into a single brood flock.

## RESULTS and DISCUSSION

A total of 240 observation cards was received for the July and August reporting period with 138 cards reporting at least one observation. The 2005 production index was 2.3 poult:hen; a significant decrease ( $P < 0.05$ ) from the 4.4 poult:hen recorded in 2004 (Table 1; Figure 1) and significantly less ( $P < 0.05$ ) than the average 3.3 poult:hen of the previous 5 years 2000-2004 (Table 2). The PI was the lowest value in the 13-year history of the survey, in sharp contrast to 2004, the highest PI value. The proportion of hens observed with poults was 74%, considerably less than in 2004 but only slightly less than the average for the previous 5 years. The average brood size (hens + poults) was 8.9 birds in 2005; less than the 11.5 birds observed in 2004, but comparable to the 8.6 birds per brood in 2003. The downward PI trend for 1993-2005 (Figure 2) is considered indicative of a wild turkey population as it makes the transition from a colonizing, reestablishing population with geometric growth to an established population where annual production and growth rate levels off to a maintenance level characteristic of a stabilized population. This transition in population growth will need to be considered in future harvest management decisions.

Reasons for the lower production index in 2005 are not known. Data gleaned from the "Indiana Crop & Weather Reports" (Indiana Agricultural Statistics, USDA) did not indicate any unfavorable climatic abnormalities that could have reduced chick survival during the critical early brood period of June. One can only speculate on the "ecological welfare factors" that may have come into play in a compensation role related to last year's extremely good production.

Regional summaries were not possible due to the sample size and inconsistencies in the data reporting.

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**Table 1. Indiana wild turkey brood production - Summer 2005.**

<b>July &amp; August Combined</b>	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen	
<b>Totals</b>	718	1649		2.3	
<b>Means</b>	2.2	6.9	8.9	5.4 **	Total Number of Cards = 366
<b>No. of Observations</b>	325	240	240	240	Cards with ≥ 1 observation 138
<b>SE=</b>	0.13	0.39	0.44	0.20	Percent hens with broods 74%

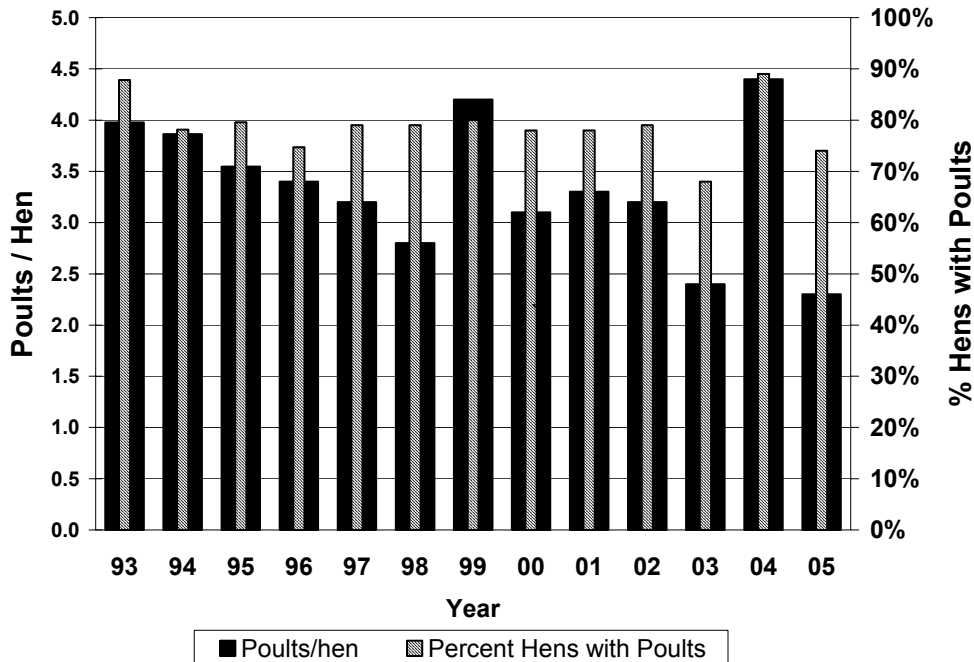
<b>Jul-05</b>	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen	
<b>Totals</b>	335	622		1.9	
<b>Means</b>	2.2	6.2	8.1	5.12 **	Total Number of Cards = 187
<b>No. of Observations</b>	155	101	101	101	Cards with ≥ 1 observation 65
<b>SE=</b>	0.13	0.40	0.45	0.21	Percent hens with broods 65%

<b>Aug-05</b>	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen	
<b>Totals</b>	383	1027	1309	2.7	
<b>Means</b>	2.3	7.4	9.4	5.7**	Total Number of Cards = 179
<b>No. of Observations</b>	170	139	139	139	Cards with ≥ 1 observation 73
<b>SE=</b>	0.12	0.38	0.43	0.19	Percent hens with broods 82%

\* Brood size = all hens + all poults observed as a group at one time  
 \*\* The mean poults/hen calculated using only those observations where hens were observed with broods.  
 ■ The total poults/total hens observed for July + August = annual Production Index (PI).

**Figure 1 Wild Turkey Brood Production**



**Table 2. Indiana wild turkey production indices, 1993-2005.**

<b>Year</b>	<b>Poults : Hen <sup>a</sup></b>	<b>% Hens with poults</b>	<b>No. of Observations</b>		
93	4.0	88%	101		
94	3.9	78%	175		
95	3.5	80%	121		
96	3.4	75%	142		
97	3.2	79%	126		
98	2.8	79%	134		
99	4.2	80%	229		
00	3.1	78%	227		
01	3.3	78%	313		
02	3.2	79%	338		
03	2.4	68%	312		
04	4.4	89%	597		
<i>Mean &amp; SE <sup>b</sup></i>	3.3	0.3	78%	3%	357
<b>05</b>	<b>2.3</b>	<b>74%</b>	<b>240</b>		

<sup>a</sup> The production index (PI) is the total poults/total hens observed for July and August = annual production index.

<sup>b</sup> Production Index Mean (Standard Error) for 5 previous years.

# Wild Turkey Production - Indiana

