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1006	Title 2010 AMERICAN WOODCOCK POPULATION STATUS	10/14/10

**Abstract:** *Singing-ground Survey data for 2010 indicated the index for singing woodcock males was not significantly different from 2009. Since 2000, the number of woodcock heard singing during surveys in Indiana has declined an average of 2.69% per year, and an average 3.92% decline per year has been observed since 1968. Estimates from the Harvest Information Program indicated that 1,100 active woodcock hunters in Indiana spent 4000 days afield and harvested 1,700 woodcock. Additionally, the number of immature woodcock per adult female exhibits a long-term decline. The primary cause of the population decline is related to the continual loss of early successional moist-soil woodland habitats along migratory routes, on the breeding grounds, and in over-winter areas.*

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The American woodcock is a popular game bird throughout much of the Midwest. Because the species is migratory in nature, the U. S. Fish and Wildlife Service (USFWS) is responsible for its management. State and provincial fish and wildlife agencies, in cooperation with the USFWS, gather survey data annually to get reliable estimates of population and harvest, and to collect information on recruitment and distribution. The Indiana Division of Fish and Wildlife has cooperated with USFWS since the inception of the American woodcock survey in 1968.

## **METHODS**

### *Woodcock Management Regions*

Woodcock are managed within two regions; Eastern and Central. The Central Management Region is similar to the Mississippi Flyway and consists of 19 states and 2 provinces.

### *Singing-ground Survey*

The Office of Migratory Bird Management of the USFWS assigns annual survey routes to count male woodcock during the birds' peak display period. Indiana is 1 of 6 states and 2 provinces in the Central Management Region participating in

this annual survey. Also participating are the states of Minnesota, Wisconsin, Michigan, Illinois, and Ohio and provinces of Ontario and Manitoba. In 2010, Indiana was assigned 11 routes to be surveyed between 10 April and 5 May. Each route is 3.6 miles in length and includes 10 listening stops, and the entire survey must be completed in 38 minutes. Beginning shortly after sunset, participants count the number of woodcock heard "peenting" (vocalization of displaying male woodcock on the ground) at each stop. Surveys were not conducted when temperatures dropped below 40° F, during rain, or when winds exceeded 12 mph. At least 9 out of 10 points on each route must be within the prescribed guidelines for the route to be counted in the analysis.

### *Harvest Information Program (HIP)*

This survey was developed by the USFWS and state agencies to gather reliable estimates of hunter participation and woodcock harvest. From hunter information provided by the Indiana Division of Fish and Wildlife, the USFWS randomly selects a sample of hunters and asks them to provide a daily log of hunting activities



and harvest. This log is then used to calculate days afield and harvest for Indiana, and the region.

#### *Wing-collection Survey*

This survey provides data on breeding success, and is a cooperative effort between woodcock hunters, the USFWS, and the Indiana Division of Fish and Wildlife. Survey participants are hunters who either: (1) participated in past surveys, (2) were selected from the HIP survey, or (3) contacted the USFWS to volunteer to be included in the survey. Participants are provided pre-paid mailing envelopes and are asked to submit one wing from each woodcock harvested. The age and sex of each bird is determined by examining the wing plumage.

## **RESULTS**

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#### *Singing-ground Survey*

Eight woodcock were heard "peenting" on 5 of 11 routes completed in 2010, compared to 5 birds on 4 of 17 routes in 2008. Five routes were common to both years with only 4 birds heard in 2010 on those routes surveyed in 2009 (Table 1). The number of woodcock heard displaying on the 2010 singing-ground survey did not differ significantly from the previous year for both Indiana and the Central Management Region (453 routes). Cooper and Parker (2010) determined, using hierarchical modeling, Indiana has a breeding population index of 0.32 singing-males per route, based on the long-term trend estimates. Also based on Cooper and Parker (2010), the number of woodcock heard in Indiana has declined by an average of 2.69% per year over the last 10 years (2000-2010), and by 3.92% per year from 1968-2010 (Figure 1). These declines are considerably greater than the 1.19% and 0.97% annual decline estimated for the entire Central Management Region over the respective time periods.

#### *Harvest Information Program (HIP)*

In Indiana, the estimated 1,100 woodcock hunters (Figure 2) spent 4,000 days afield and harvested 1,700 American woodcock (Figure 2) during the 2009-2010 hunting season. Estimates of harvest and hunter numbers during the 2009-2010 season were greater than those during the 2008-2009 season (Figure 2). However, the current year numbers are well below the 1999-2009 average.

#### *Wing-collection Survey*

Nationally, a total of 1,368 woodcock hunters (15 hunters from Indiana) sent in 12,178 usable woodcock wings in 2009. In the Central Region, the recruitment index (1.2 immatures per adult female) was 25.6% lower than the long-term regional average (1.6). Indiana's long-term recruitment index is 2.1 immatures per adult female. A 2009 index could not be calculated.

## **DISCUSSION**

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Like other upland game birds in Indiana, the number of American woodcock has progressively declined over the last 3 decades. Similar in habitat to ruffed grouse, American woodcock favor early successional woodlands associated with forest manipulation. However, habitat requirements for woodcock are more specific than those for ruffed grouse in that early successional habitats are most utilized when they contain areas of moist soils. Moist soil is essential for woodcock because they feed by probing their beak into the ground to find grubs and earthworms. Unfortunately, the reduction in timber harvest on our public and private lands has caused a decrease in the amount of habitat available to American woodcock. Without forest manipulation such as logging and fire, early successional habitats will continue to be lost and populations of American woodcock will continue to decline.

## **LITERATURE CITED**

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Cooper, T.R., and K. Parker. 2010. American woodcock population status, 2010. U.S. Fish and Wildlife Service, Laurel, Maryland. 16 pp.

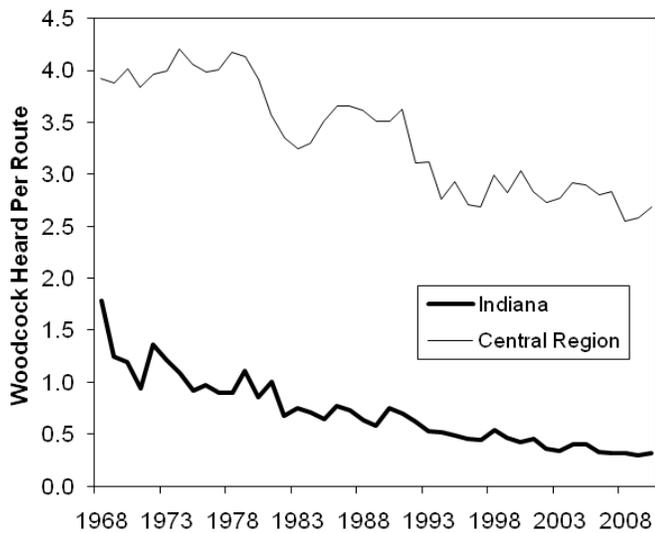


Figure 1. Breeding Population Trends (singing-males per route) for American woodcock from the annual Singing-Ground Survey, 1968-2010 (estimated using hierarchical modeling techniques; Cooper and Parker 2010). The Central Management Region includes the states of Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin, and the Canadian Provinces of Ontario and Manitoba.

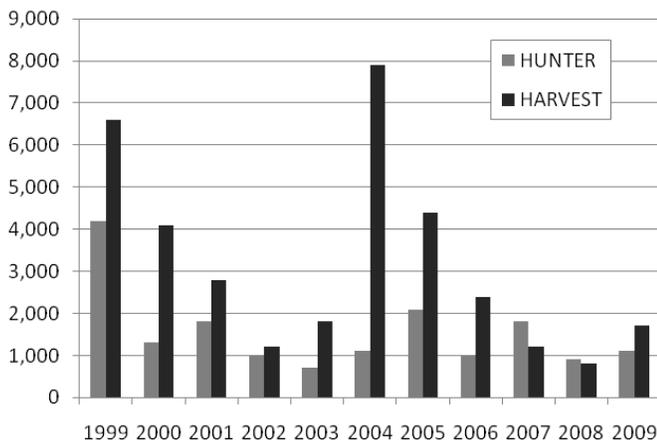


Figure 2. Estimates of hunter numbers and woodcock harvest between 1999 and 2009 based on data collected from the Harvest Information Program (HIP) [note: data after 2002 is preliminary and has not been finalized; all estimates are rounded to the nearest hundred].

Route No.	County	2008	2009	2010
12	Dekalb	0	NS	NS
14	Jasper/Starke	1	1	2
15	Kosciusko	0	NS	NS
17	Fulton/Pulaski	1	1	1
22	Wabash	NS	0	NS
27	Grant	0	NS	NS
40	Hancock	0	NS	NS
41	Vermillion/Vigo	NS	0	NS
42	Putnam	NS	0	NS
43	Rush	NS	0	NS
44	Fayette	NS	0	NS
45	Morgan	NS	0	NS
46	Johnson	1	0	0
48	Clay/Sullivan	NS	NS	0
49	Owen	0	NS	NS
55	Jackson	0	NS	NS
57	Daviess/Martin	NS	NS	0
58	Lawrence	NS	2	1
61	Clark	0	NS	NS
62	Gibson	0	NS	NS
65	Orange	NS	1	0
67	Perry	NS	0	NS
72	Perry	NS	0	NS
73	Starke	NS	0	NS
74	Boone	0	NS	NS
75	Hamilton	0	NS	NS
78	Posey	NS	NS	0
82	Lagrange	NS	NS	3
83	Marshall/Kosciusko	NS	0	NS
85	Jefferson	0	0	NS
86 <sup>b</sup>	Bartholomew	-	-	0
87 <sup>c</sup>	Miami	-	-	1
Males heard statewide		3	5	8
Number of routes conducted		14	17	11
Number of routes used in analysis		14	17	11

<sup>a</sup> NS = not surveyed.

<sup>b</sup> Revised route

<sup>c</sup> New route; established before 2010 survey

Table 1. Status of the Indiana singing-ground survey routes used between 2008 and 2010, and the number of singing males heard along those routes.