WILDLIFE MANAGEMENT AND RESEARCH NOTES

No.		DATE
982	**AUTHOR:** W. Adam Phelps, Waterfowl Research Biologist	9/10/2009
	TITLE: Avian Influenza Monitoring in Indiana, 2008	

Abstract: *The Indiana Division of Fish and Wildlife (IDFW) sampled 387 hunter-killed waterfowl and 27 live wood ducks for avian influenza during the 2008-09 hunting season at five Fish and Wildlife Areas (FWAs) and one reservoir. Seventy-seven ducks were confirmed positive for low-pathogenic avian influenza (H5). Sampling will not continue in future years.*

History

In 2006, concerns regarding the highly-pathogenic H5N1 strain of avian influenza (HPAI H5N1) causing human illness and fatalities in Asia caused the US government to fund monitoring in wild birds in North America. It is believed that it is possible for the virus to be transmitted via wild migratory birds from Asia or Europe to North America during the natural course of migration. The Indiana Division of Fish and Wildlife (IDFW), in cooperation with and with funding provided by the US Department of Agriculture, Wildlife Services (USDA-WS), took samples from hunter-killed waterfowl on state properties to monitor for this disease.

Procedures

The Indiana Division of Fish and Wildlife (IDFW) sampled 387 hunter-killed waterfowl for avian influenza during the 2008-09 hunting season at five Fish and Wildlife Areas (FWAs) (LaSalle, Willow Slough, Minnehaha, Goose Pond, and Hovey Lake) as well as one reservoir (Monroe) (Figure 1; Table 1). Species sampled were chosen based on the Mississippi Flyway sampling strategy (MFAAFC 2006) and included Canada goose (*Branta canadensis)*, mallard (*Anas platyrhynchos*), American black duck (*A. rubripes*), American green-winged teal (*A. crecca*), American wigeon (*A. americana*), gadwall (*A. strepera*), northern pintail (*A. acuta*), and northern shoveler (*A. clypeata*). New this year was the inclusion of all other dabbling duck species in the sampling plan. In addition, 27 wood ducks (*Aix sponsa*) were sampled during pre-season banding operations in July and August 2008 at LaSalle FWA.

Waterfowl were sampled using sterile swabs. One swab was inserted into the cloaca, while another swab was inserted into the oral cavity. Both swabs were placed into the same vial of heart-brain infusion medium. Species, sex, and age of each sampled bird was recorded. Most sampling occurred on weekends, when the largest numbers of hunters were present on state properties. Samples were kept cold, and either shipped overnight or driven to the Animal Disease Diagnostic Laboratory (ADDL) at Purdue University, where initial virus screening occurred.

The initial matrix screening that occurred at ADDL is a screening test for any AI virus subtypes. If a sample tested positive at this screening level, it was then screened via PCR for H5, H7, and N1 virus subtypes. Positive results using this test were then submitted to the National Veterinary Services Laboratory (NVSL) for confirmation of the result.

Results

Of the birds sampled by IDNR and USDA-APHIS Wildlife Services, seventy seven were confirmed as positive for one of the viruses of concern (Table 2). These birds were all positive for a low-pathogenic H5 virus subtype, except two mallards. One of these birds was positive for H1N1, and the other for H7N3. No samples were confirmed positive for any highly-pathogenic strains of avian influenza.

Discussion And Recommendations

This was the third year of avian influenza monitoring in Indiana, and again it went very well. Jasper-Pulaski FWA was dropped from sampling after the first year, as harvest there is typically not high enough to warrant the sampling effort. Sampling will not continue in Indiana, as USDA-APHIS-WS has ceased to fund Tier 3 states.

Literature Cited

MFAAFC (Mississippi Flyway Ad Hoc Avian Flu Committee). 2006. Surveillance for early detection of highly pathogenic avian influenza H5N1 in wild migratory birds: A strategy for the Mississippi Flyway. Unpublished report.

Table 1. Number of avian influenza samples taken, by species and property.

Property	G-w Teal	Wigeon	Mallard	Wood Duck	Misc. Dabblers	Total
Willow Slough	35	0	0	0	44	79
LaSalle	24	0	13	27	0	64
NORTH subtotal	**59**	**0**	**13**	**27**	**44**	**143**
Minnehaha	38	8	23	0	0	70
Goose Pond	16	0	14	0	0	30
Monroe Reservoir	22	6	40	0	27 [1]	95
Hovey Lake	18	0	32	0	0	50
SOUTH subtotal	**94**	**14**	**109**	**0**	**27**	**244**
TOTAL	**153**	**14**	**122**	**27**	**71**	**387**

[1] This includes one Canada goose as well as the miscellaneous dabbling ducks.

Table 2. Avian influenza samples taken and positive results by species.[1]

Species [2]	# Sampled	Positive [3]	Percent Positive
AGWT	153	27 [4]	17.6
AMWI	14	1	7.7
ABDU	10	3	33.3
BWTE	45	7 [5]	15.6
CAGO	1	0	0
GADW	7	0	0
MALL	122	34	27.9
ABDU x MALL	1	1	100
NSHO	7	4	57.1
WODU	27	0	0
TOTAL	**387**	**77**	**19.9**

[1] This table includes all samples taken by the Indiana Division of Fish and Wildlife.
[2] AGWT = American green-winged teal; AMWI = American wigeon; ABDU = American black duck; BWTE = blue-winged teal; CAGO = Canada goose; GADW = gadwall; MALL = mallard; ABDU x MALL = black duck/mallard hybrid; NSHO = northern shoveler; WODU = wood duck.
[3] Number confirmed positive for low-pathogenic AI at NVSL. Most were H5; one bird each was infected with H1 and H7.No samples were confirmed positive for any highly-pathogenic strains of avian influenza.
[4] Of these, two were suspected of being positive but not confirmed.
[5] Of these, four were suspected of being positive but not confirmed.

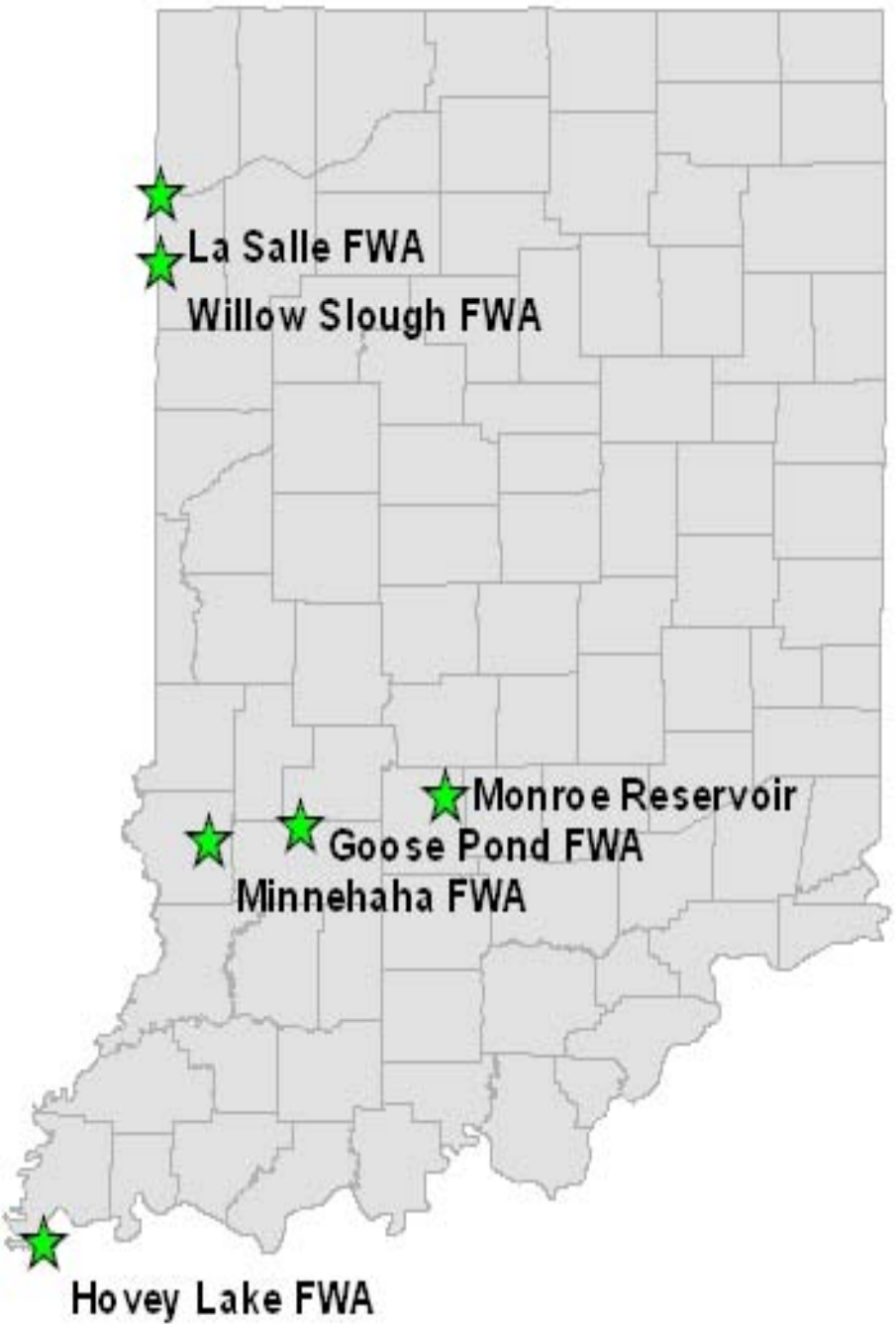

Figure 1. Properties at which IDFW took avian influenza samples, 2008.

These management notes are issued periodically to provide a quick source of information on wildlife surveys and investigations, and various wildlife programs prior to more terminal reports. Any information provided is subject to further analysis and therefore is not for publication without permission.