

Washington Department of Fish and Wildlife
Wild Bird Avian Influenza Surveillance
July 1st 2007 – June 30th 2008

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Introduction

Avian influenza is caused by viruses that naturally occur in water-associated birds such as ducks, geese, swans, and shorebirds. Avian influenza viruses (AIV) are classified according to two types of proteins present on the surface of the virus, hemagglutinin (H), and neuraminidase (N). There are 16 known hemagglutinin proteins and 9 known neuraminidase proteins, for a total of 144 possible H/N combinations or “subtypes”. Virtually every possible H/N subtype has been found in wild birds, and AIV typically do not cause serious disease in these species.

In contrast to wild birds, domestic poultry such as chickens and turkeys can be extremely susceptible to certain strains of AIV. These strains are referred to as “highly pathogenic avian influenza” (HPAI) viruses. The HPAI designation refers only to the severity of disease caused in domestic poultry, and is not related to the potential to cause disease in humans or other species. To date, all known HPAI viruses have been of the H5 or H7 subtypes, although not all H5 and H7 viruses are HPAI viruses. Commercial poultry producers are aware of the potential threat that wild waterfowl present to domestic poultry, and for decades have taken precautions to prevent contact between domestic and wild birds.

On rare occasions, AIV can mutate or recombine with human influenza viruses and become infectious to humans. Beginning in 2005, an increasing number of human cases of influenza caused by an HPAI H5N1 subtype of an AIV were reported in southeast Asia. Prior to that time, infections with this particular virus had primarily been limited to birds. The human cases sparked worldwide concern that this virus could cause another worldwide epidemic (“pandemic”) of influenza in humans, such as those experienced in 1918, 1957, and 1968.

As a result of this concern, several wild bird surveillance programs were initiated in Washington to assess the prevalence of AIV in wild birds, and to provide an early warning to poultry producers and public health officials should the HPAI H5N1 virus of concern enter the United States via migratory birds.

The purpose of this report is to summarize AIV sampling efforts and test results from wild birds collected by Washington Department of Fish and Wildlife (WDFW) between July 1st 2007 and June 30th 2008. A brief summary of data collected by other agencies within the state of Washington is also included.

Methods

The avian influenza surveillance program (US Interagency Strategic Plan - USISP) is a collaboration between the U.S. Fish and Wildlife Service (USFWS), the U.S. Department of Agriculture (USDA), Tribal nations, and state wildlife agencies to sample migratory wild birds. This plan can be found at:

http://wdfw.wa.gov/wlm/avian_flu/ai_monitoring_plan.pdf.

The USISP delegated responsibility to the USGS for establishing a nationwide database to capture all avian influenza data from the various agencies throughout the United States. This database, known as the HPAI Early Detection Data System (HEDDS), is viewable by the public and has provided WDFW with information regarding data collected in Washington by agencies other than WDFW. These agencies include: USDA, USFWS, Yakima Wildlife Resources, Quilleute Tribe Natural Resources, Washington State Department of Transportation, Olympic National Park, Laguna Atascosa National Wildlife Refuge, and a private citizen. While this paper will present a brief summary of HEDDS data, readers must be aware that changes are being made frequently to the HEDDS data and numbers may change slightly over the next few months. For more information about HEDDS data, please visit their website at

<http://wildlifedisease.nbio.gov/ai/index.jsp>.

WDFW's samples were collected according to the USISP, as well as from birds during routine morbidity and mortality investigations. Oral-pharyngeal and/or cloacal swabs were collected from hunter-harvested birds, live-trapped and released birds, agency harvested birds, and birds that were either harvested or collected for routine morbidity and mortality investigations. Agency harvested birds are collected under special permits for a few reasons including: damage control, research purposes, or to meet certain disease-testing quotas.

Samples were initially screened for the presence of AIV using a polymerase chain reaction (PCR) assay designed to detect the presence of a matrix protein common to all AIV. Samples that yielded positive matrix results were then screened with a PCR assay designed to detect the presence of H5 or H7 AIV. Samples that yielded positive H5 or H7 results were submitted to a second laboratory to undergo an additional confirmatory PCR test. Both labs then further characterized the viruses through a variety of techniques, to determine whether or not they were of the H5N1 subtype, and whether or not they were HPAI viruses.

Results

Results from the HEDDS website indicate 3038 birds and 634 fecal samples from Washington were tested for AI between July 1st 2007 and June 30th 2008. From these 3672 samples, 393 (12.9%) birds and 10 (1.6%) fecal samples were positive for an AI

virus. Of the AI positive bird samples, 7 were initially determined to be H5 positive, and none were H7 positive through PCR testing.

The H5 positive samples were submitted to a second lab for confirmatory testing, and 2 of the 7 samples subsequently tested negative for H5. Further virus characterization by both labs determined the H5 positive samples were not of the HPAI H5N1 subtype. Out of the 5 birds that were confirmed to be H5 positive, 4 were mallards and 1 was a wood duck. The wood duck was found to be infected with a Low Pathogenic Avian Influenza (LPAI) H5 virus. All 5 of these birds were sampled while they were in Yakima County. The four mallards were sampled under live surveillance, and the wood duck was sampled under hunter harvest surveillance. The remainder of this document will discuss only the data subset collected by WDFW.

WDFW collected a total of 1653 samples between July 1st 2007 and June 30th 2008 (Table 1). The number of samples collected utilizing each strategy are as follows: 846 hunter harvested (Table 2), 647 live-trapped and released (Table 3), 7 agency harvested (Table 4), and 153 morbidity/mortality (Table 5). Surveillance efforts focused on 12 species of birds; however, additional samples collected through routine statewide avian mortality investigations accounted for an additional 22 species.

Out of the 1634 water-associated birds, 98 (6%) samples tested positive for the presence of an AIV. All 98 of the AI positive samples were viruses other than an H5 or H7 subtype, and no H5N1 subtypes were detected.

In general, dabbling ducks had the highest prevalence of AIV infection, with 3/3 species tested yielding an AIV. In descending order, these were: 24/151 (15.9%) of American green-winged teals (*Anas crecca*), 21/162 (13%) of northern pintails (*Anas acuta*), and 40/407 (9.8%) of mallards (*Anas platyrhynchos*).

Only 4 individual diving ducks (3 white-winged scoters [*Melanitta fusca*] and 1 harlequin duck [*Histrionicus histrionicus*]) were tested during routine mortality investigations. All four birds were negative for AIV.

AIV were detected in 2/5 species of geese tested, but at relatively low prevalence. In descending order, these were: 5/205 (2.4%) lesser snow geese (*Chen caerulescens*) and 4/200 (2%) cackling geese (*Branta hutchinsii minima*). One hundred and forty black brant (*Branta bernicla*), 1 Canada goose (*Branta canadensis moffitti*) and 1 greater white-fronted goose (*Anser albifrons*) were all negative for AIV.

Three of 78 (3.8%) trumpeter swans (*Cygnus buccinator*) were infected with an AIV, while none of 4 tundra swans (*Cygnus columbianus*) were infected.

An AIV was detected in only 1/15 species of shorebirds and miscellaneous water-associated birds tested. One out of 7 (14.3%) California gulls (*Larus californicus*) tested positive for an AIV during mortality investigations.

Summary

AIV were detected at rates and from species that were expected based on numerous surveys done in the United States over the past several decades. Based on samples collected from wild birds in Washington, and previous surveys done elsewhere, it appears that highly pathogenic AIV are rare in wild birds. Continued surveillance for AIV in wild birds is advised, with particular emphasis on sick and dead birds, to ensure timely detection of highly pathogenic H5N1 or any other highly pathogenic AIV, should they enter the United States.

WDFW intends to continue surveillance into the 2008-2009 year, following the guidelines of the USISP. This plan is revised annually, in order to improve the effectiveness of the surveillance methods and to ensure optimal use of resources.

Table 1. All Bird AI Samples Collected by WDFW, 7/1/07 - 6/30/08

| Abbrev. | Common Name | Scientific Name | Total Number Tested | Total AI positive | Percent AI positive | Total AI positive non-H5/H7 | Percent AI positive non-H5/H7 | Total H5 positive | Percent H5 positive | Total H7 positive | Percent H7 positive |
|--|-----------------------------|-----------------------------------|---------------------|-------------------|---------------------|-----------------------------|-------------------------------|-------------------|---------------------|-------------------|---------------------|
| Dabbling Ducks | | | | | | | | | | | |
| AGWT | American green-winged teal | <i>Anas crecca</i> | 151 | 24 | 15.9 | 24 | 15.9 | 0 | 0.0 | 0 | 0.0 |
| MALL | mallard | <i>Anas platyrhynchos</i> | 407 | 40 | 9.8 | 40 | 9.8 | 0 | 0.0 | 0 | 0.0 |
| NOPI | northern pintail | <i>Anas acuta</i> | 162 | 21 | 13.0 | 21 | 13.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 720 | 85 | | 85 | | 0 | | 0 | |
| Diving Ducks | | | | | | | | | | | |
| WWSC | white-winged scoter | <i>Melanitta fusca</i> | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| HARD | harlequin duck | <i>Histrionicus histrionicus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 4 | 0 | | 0 | | 0 | | 0 | |
| Geese | | | | | | | | | | | |
| CACG | cackling goose | <i>Branta hutchinsii minima</i> | 200 | 4 | 2.0 | 4 | 2.0 | 0 | 0.0 | 0 | 0.0 |
| LSGO | lesser snow goose | <i>Chen caerulescens</i> | 205 | 5 | 2.4 | 5 | 2.4 | 0 | 0.0 | 0 | 0.0 |
| BLBR | black brant | <i>Branta bernicla</i> | 140 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| CAGO | Canada goose | <i>Branta canadensis moffitti</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| GWFG | greater white-fronted goose | <i>Anser albifrons</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 547 | 9 | | 9 | | 0 | | 0 | |
| Swans | | | | | | | | | | | |
| TRUS | trumpeter swan | <i>Cygnus buccinator</i> | 78 | 3 | 3.8 | 3 | 3.8 | 0 | 0.0 | 0 | 0.0 |
| TUSW | tundra swan | <i>Cygnus columbianus</i> | 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 82 | 3 | | 3 | | 0 | | 0 | |
| Shorebirds & Other Water-associated Birds | | | | | | | | | | | |
| WESA | western sandpiper | <i>Calidris mauri</i> | 207 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| LESA | least sandpiper | <i>Calidris minutilla</i> | 32 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| SESA | semipalmated sandpiper | <i>Calidris pusilla</i> | 2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| SEPL | semipalmated plover | <i>Charadrius semipalmatus</i> | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| DCCO | double-crested cormorant | <i>Phalacrocorax auritus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| COMU | common murre | <i>Uria aalge</i> | 9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| BRAC | Brandt's cormorant | <i>Phalacrocorax penicillatus</i> | 2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| WEGR | western grebe | <i>Aechmophorus occidentalis</i> | 5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| NOFU | northern fulmar | <i>Fulmarus glacialis</i> | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| SOSH | sooty shearwater | <i>Puffinus griseus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| CAGU | California gull | <i>Larus californicus</i> | 7 | 1 | 14.3 | 1 | 14.3 | 0 | 0.0 | 0 | 0.0 |
| RBGU | ring-billed gull | <i>Larus delawarensis</i> | 2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| GBHE | great blue heron | <i>Ardea herodias</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| PALO | pacific loon | <i>Gavia pacifica</i> | 5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| RTLO | red-throated loon | <i>Gavia stellata</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 281 | 1 | | 1 | | 0 | | 0 | |
| Other Species | | | | | | | | | | | |
| CLSW | cliff swallow | <i>Petrochelidon pyrrhonota</i> | 8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| VATH | varied thrush | <i>Ixoreus naevius</i> | 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| PISI | pine siskin | <i>Carduelis pinus</i> | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| RECR | red crossbill | <i>Loxia curvirostra</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| PEFA | peregrine falcon | <i>Falco peregrinus</i> | 1 | 0 | | | | | | | |
| SSHA | sharp-shinned hawk | <i>Accipiter striatus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| BAEA | bald eagle | <i>Haliaeetus leucocephalus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 19 | 0 | | 0 | | 0 | | 0 | |
| Totals | | | 1653 | 98 | | 98 | | 0 | | 0 | |

Table 2. Hunter Harvested Bird AI Samples Collected by WDFW, 7/1/07 - 6/30/08

| Abbrev | Common Name | Scientific Name | Total Number Tested | Total AI positive | Percent AI positive | Total AI positive non- H5/H7 | Percent AI positive non-H5/H7 | Total H5 positive | Percent H5 positive | Total H7 positive | Percent H7 positive |
|-----------------------|----------------------------|---------------------------------|---------------------|-------------------|---------------------|------------------------------|-------------------------------|-------------------|---------------------|-------------------|---------------------|
| Dabbling Ducks | | | | | | | | | | | |
| AGWT | American green-winged teal | <i>Anas crecca</i> | 116 | 16 | 13.8 | 16 | 13.8 | 0 | 0.0 | 0 | 0.0 |
| MALL | mallard | <i>Anas platyrhynchos</i> | 191 | 5 | 2.6 | 5 | 2.6 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 307 | 21 | | 21 | | 0 | | 0 | |
| Geese | | | | | | | | | | | |
| CACG | cackling goose | <i>Branta hutchinsii minima</i> | 199 | 3 | 1.5 | 3 | 1.5 | 0 | 0.0 | 0 | 0.0 |
| LSGO | lesser snow goose | <i>Chen caerulescens</i> | 200 | 5 | 2.5 | 5 | 2.5 | 0 | 0.0 | 0 | 0.0 |
| BLBR | black brant | <i>Branta bernicla</i> | 140 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 539 | 8 | | 8 | | 0 | | 0 | |
| Totals | | | 846 | 29 | | 29 | | 0 | | 0 | |

Table 3. Live Wild Bird AI Samples Collected by WDFW, 7/1/07 - 6/30/08

| Abbrev | Common Name | Scientific Name | Total Number Tested | Total AI positive | Percent AI positive | Total AI positive non- H5/H7 | Percent AI positive non-H5/H7 | Total H5 positive | Percent H5 positive | Total H7 positive | Percent H7 positive |
|--|----------------------------|--------------------------------|---------------------|-------------------|---------------------|------------------------------|-------------------------------|-------------------|---------------------|-------------------|---------------------|
| Dabbling Ducks | | | | | | | | | | | |
| AGWT | American green-winged teal | <i>Anas crecca</i> | 28 | 7 | 25.0 | 7 | 25.0 | 0 | 0.0 | 0 | 0.0 |
| MALL | mallard | <i>Anas platyrhynchos</i> | 213 | 34 | 16.0 | 34 | 16.0 | 0 | 0.0 | 0 | 0.0 |
| NOPI | northern pintail | <i>Anas acuta</i> | 162 | 21 | 13.0 | 21 | 13.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 403 | 62 | | 62 | | 0 | | 0 | |
| Shorebirds & Other Water-associated Birds | | | | | | | | | | | |
| WESA | western sandpiper | <i>Calidris mauri</i> | 207 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| LESA | least sandpiper | <i>Calidris minutilla</i> | 32 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| SEPL | semipalmated plover | <i>Charadrius semipalmatus</i> | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| SESA | semipalmated sandpiper | <i>Calidris pusilla</i> | 2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 244 | 0 | | 0 | | 0 | | 0 | |
| Totals | | | 647 | 62 | | 62 | | 0 | | 0 | |

Table 4. Agency Harvested Bird AI Samples Collected by WDFW, 7/1/07 - 6/30/08

| Abbrev | Common Name | Scientific Name | Total Number Tested | Total AI positive | Percent AI positive | Total AI positive non- H5/H7 | Percent AI positive non-H5/H7 | Total H5 positive | Percent H5 positive | Total H7 positive | Percent H7 positive |
|-----------------------|----------------------------|--------------------|---------------------|-------------------|---------------------|------------------------------|-------------------------------|-------------------|---------------------|-------------------|---------------------|
| Dabbling Ducks | | | | | | | | | | | |
| AGWT | American green-winged teal | <i>Anas crecca</i> | 7 | 1 | 14.3 | 1 | 14.3 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 7 | 1 | 14.3 | 1 | | 0 | | 0 | |
| Totals | | | 7 | 1 | | 1 | | 0 | | 0 | |

Table 5. Morbidity/Mortality Birds AI Samples Collected by WDFW, 7/1/07 - 6/30/08

| Abbrev | Common Name | Scientific Name | Total Number Tested | Total AI positive | Percent AI positive | Total AI positive non-H5/H7 | Percent AI positive non-H5/H7 | Total H5 positive | Percent H5 positive | Total H7 positive | Percent H7 positive |
|--|-----------------------------|-----------------------------------|---------------------|-------------------|---------------------|-----------------------------|-------------------------------|-------------------|---------------------|-------------------|---------------------|
| Dabbling Ducks | | | | | | | | | | | |
| MALL | mallard | <i>Anas platyrhynchos</i> | 3 | 1 | 33.3 | 1 | 33.3 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 3 | 1 | | 1 | | 0 | | 0 | |
| Diving Ducks | | | | | | | | | | | |
| WWSC | white-winged scoter | <i>Melanitta fusca</i> | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| HARD | harlequin duck | <i>Histrionicus histrionicus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 4 | 0 | | 0 | | 0 | | 0 | |
| Geese and Swans | | | | | | | | | | | |
| TRUS | trumpeter swan | <i>Cygnus buccinator</i> | 78 | 3 | 3.8 | 3 | 3.8 | 0 | 0.0 | 0 | 0.0 |
| TUSW | tundra swan | <i>Cygnus columbianus</i> | 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| LSGO | lesser snow goose | <i>Chen caerulescens</i> | 5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| CACG | cackling goose | <i>Branta hutchinsii minima</i> | 1 | 1 | 100.0 | 1 | 100.0 | 0 | 0.0 | 0 | 0.0 |
| CAGO | Canada goose | <i>Branta canadensis moffitti</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| GWFG | greater white-fronted goose | <i>Anser albifrons</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 90 | 4 | | 4 | | 0 | | 0 | |
| Shorebirds & Other Water-associated Birds | | | | | | | | | | | |
| DCCO | double-crested cormorant | <i>Phalacrocorax auritus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| COMU | common murre | <i>Uria aalge</i> | 9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| BRAC | Brandt's cormorant | <i>Phalacrocorax penicillatus</i> | 2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| WEGR | western grebe | <i>Aechmophorus occidentalis</i> | 5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| NOFU | northern fulmar | <i>Fulmarus glacialis</i> | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| SOSH | sooty shearwater | <i>Puffinus griseus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| CAGU | California gull | <i>Larus californicus</i> | 7 | 1 | 14.3 | 1 | 14.3 | 0 | 0.0 | 0 | 0.0 |
| RBGU | ring-billed gull | <i>Larus delawarensis</i> | 2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| GBHE | great blue heron | <i>Ardea herodias</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| PALO | pacific loon | <i>Gavia pacifica</i> | 5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| RTLO | red-throated loon | <i>Gavia stellata</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 37 | 1 | | 1 | | 0 | | 0 | |
| Other Species | | | | | | | | | | | |
| CLSW | cliff swallow | <i>Petrochelidon pyrrhonota</i> | 8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| VATH | varied thrush | <i>Ixoreus naevius</i> | 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| PISI | pine siskin | <i>Carduelis pinus</i> | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| RECR | red crossbill | <i>Loxia curvirostra</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| PEFA | peregrine falcon | <i>Falco peregrinus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| SSHA | sharp-shinned hawk | <i>Accipiter striatus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| BAEA | bald eagle | <i>Haliaeetus leucocephalus</i> | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal: | | | 19 | 0 | | 0 | | 0 | | 0 | |
| Totals | | | 153 | 6 | | 6 | | 0 | | 0 | |