

Protocol for West Nile Virus Dead Bird Monitoring

May 2010

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Protocol for West Nile Virus Dead Bird Monitoring May 2010

Section A

Overview of West Nile Virus Dead Bird Monitoring

Dead birds testing positive for West Nile virus (WNV) are a sensitive indicator of viral activity in a geographical area. Various approaches for dead bird monitoring have been used by states where WNV outbreaks have occurred. These activities have ranged from reporting and testing only dead crows in some states to testing all bird species in other states.

Based on national dead bird monitoring data over the past 11 years, testing of corvids (jays, magpies, ravens, and crows) or raptors (hawks) will increase the probability of detecting WNV activity in Washington. Dead bird monitoring across the country from 1999 to present indicates corvids and raptors are very susceptible to the virus and experience high mortality rates. Therefore, we encourage the submission of birds included in these two groupings as candidates for testing of WNV.

Birds testing positive for WNV have most commonly been found dead. However, some birds are observed before death while they are sick, and these birds showed the following clinical signs: weakness; lethargy; tremors; inability to walk, fly, perch, or hold their wings normally against their body; and were easily approachable by humans. These signs of generalized illness are not unique to WNV infection. Birds positive for WNV are often in fair to poor physical condition as well, with loss of fat and muscle mass particularly noticeable in the flight muscles (breast).

Reports of a substantial number of dead birds in the same location likely will be shown to have died from causes other than WNV. Such die-offs are frequently associated with pesticide or natural poisoning incidents. Birds associated with these die-offs are not considered suitable specimens for WNV monitoring. We recommend reporting bird die-offs to the Washington State Department of Fish and Wildlife or United States Fish and Wildlife Service office in your area.

For guidance handling dead bird calls and concerns about Avian Influenza, refer to Section D.

Birds submitted for WNV testing should be either a corvid (crow, raven, magpie, or jay) or a raptor (hawk), and should be dead no more than 24 hours with carcass intact. If the carcass has an odor, is soft and mushy, has skin discoloration, feathers or skin that easily rubs off, or has maggots present, it is too decomposed for testing. Birds which meet requirements for testing may be frozen for storage if necessary.

This year, the Washington State Department of Health will continue to sample dead birds collecting oral swab samples from corvids only. Non-corvids and raptors may be tested on approval, which requires shipping dead bird carcass. All testing will be conducted by the Washington Animal Disease Diagnostic Laboratory, (WADDL) Pullman, WA. The laboratory will test birds weekly and submit electronic reports to the Washington State Department of Health. Positive bird results will be reported to the submitter on the same day or within one business day. ***The Washington State Department of Health will provide regular, updated results of all dead bird submissions by emailing monitoring partners a link to the Avian Mortality Report.***

In addition to testing selected specimens, it is also necessary to record reports of dead birds that are not tested. There appears to be a significant correlation between areas with high densities of reports and areas where human cases appear one to four weeks later. Studies in several states have shown that, in urban and suburban areas, as many as 75% of human cases occurred near locations where clusters of dead corvids (primarily crows) were found. ***Use the same form submitted with laboratory specimens to record information about birds reported. Report online all dead bird sightings at <https://fortress.wa.gov/doh/eh/portal/ehs/odbrs/>. Washington State Department of Health Online Dead Bird Reporting System will track and map dead bird sightings. Review report summary and West Nile virus bird surveillance to evaluate areas of cluster activity.***

If you have any questions, contact Jo Marie Brauner of Washington State Department of Health at 360.236.3064 or jomarie.brauner@doh.wa.gov.

Section B

Instructions: Collection of Corvid Oral Swab for West Nile Virus Testing

Please follow these instructions on how to collect oral swab samples from dead corvids for West Nile virus testing. This will help ensure that Washington Animal Disease Diagnostic Laboratory (WADDL) receives adequate and well-preserved specimens for testing.

The Washington State Department of Health has provided partners with swabbing supplies that include non-sterile oral swabs, Whatman Indicating FTA® micro cards, and multi-barrier pouches.

About the Whatman Indicating FTA® Micro Card: The Indicating FTA card provides a convenient method to collect and isolate nucleic acid samples for analysis. Apply biological sample to the FTA matrix and the nucleic acids are instantly captured and stabilized. Pathogens are inactivated, making samples safe to handle and ship via standard mail. The Indicating FTA card changes color from pink to white when sample is applied.

The Whatman Indicating FTA® card is suitable for samples collected from crows, jays, magpies, and other Corvidae species that are known to have a high concentration of virus in the oral secretions. Other bird species for West Nile virus testing should be submitted to WADDL following instructions for collection of dead birds (Section C Instructions: Collection of Dead Birds).

Attention: Always wear gloves when handling Whatman FTA® cards and avoid touching the pink sample area of the card.

1. Safely collect dead birds (Section C Instructions: Collection of Dead Birds).
2. Always wear gloves while handling dead birds and FTA cards. Eye protection, facial mask, and lab coat are recommended to protect against secretions.
3. Complete a **Dead Bird Reporting Form** for each bird and note identification number (Local ID).
4. Place the FTA card on a clean, dry, flat surface. Label card with the Local ID and submitting agency.
5. With swab in one hand, open the bird's beak with the other hand.
6. Insert the foam tip into the oral cavity, and swab the top, sides, and back of the mouth and throat.

Note: If the bird has been frozen, thaw it out completely before swabbing.

7. Soak the swab with as much saliva as possible.
8. Carefully lift the paper cover of the FTA card to expose the pink sample area. Press the foam tip within the center of the sample circle area.
9. Roll tip side-to-side to completely saturate sample area. Sample area will turn white indicating the transfer of the sample.

Note: It is not necessary to saturate the entire circled area. Concentrate the transfer to the center of the circle. Do not reuse the swab after tip has touched the FTA card.

10. Position the FTA card for drying by supporting the sample area with the paper cover as shown in picture. Allow to air dry for 1 hour.



11. Appropriately bag and dispose of the bird, swab, and gloves.
12. Place the FTA card in the foil-lined multi-barrier pouch. Remove the protective adhesive strip cover and seal by folding along the perforated line.

Note: Only one FTA card is to be placed in a multi-barrier pouch.



13. Mail the pouch with the completed **Dead Bird Reporting Form** in an envelope to:

Mail to: **Washington Animal Disease Diagnostic Laboratory**
Washington State University
Bustad Hall, Room 155-N
Pullman, WA 99164-7034

14. Contact Jo Marie Brauner at 360.236.3064 or jomarie.brauner@doh.wa.gov with questions regarding corvid oral swab protocol.

Section C

Instructions: Collection of Dead Birds for West Nile Virus Testing

Please follow these instructions on how to collect and ship bird carcasses for West Nile virus testing to ensure that adequate and well-preserved specimens are received at Washington Animal Disease Diagnostic Laboratory (WADDL).

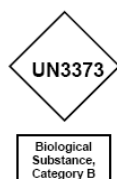
1. Collect birds preferably dead no more than 24 hours. Decomposed or scavenged carcasses are unacceptable. If the carcass has an odor, is soft and mushy, has skin discoloration, feathers or skin that easily rubs off, or has maggots present, it is too decomposed for testing. Ideally, collect a combination of freshly dead birds and birds that were euthanized after their behavior was observed and recorded.
2. Use a shovel and rubber gloves when picking up sick or dead birds. If you do not have gloves, insert your hand into a double plastic bag to pick up dead birds. Immediately chill the bagged carcass in a cooler with gel packs. Whenever handling sick or dead birds wash your hands and/or use a hand sanitizer.
3. Place each bird in a plastic bag with absorbent material (paper towel, etc.), seal, then place inside a second bag and seal (more than one individually bagged bird can be placed in the second bag). A double-bagged carcass prevents cross-contamination of individual specimens and leaking from shipping containers.
4. **Before shipping non-corvids or raptors for testing**, call Jo Marie Brauner at 306.236.3064 or email zd@doh.wa.gov or jomarie.brauner@doh.wa.gov for approval.
5. Complete a separate copy of the **Dead Bird Reporting Form** for each bird. Place copies of the forms in a plastic bag and place inside of the shipping container **on top of the bagged birds**. If more than one carcass is submitted, please include identification number (Local ID) to match bird with the correct form.
6. **Ship specimens in hard-sided plastic coolers only**. To ensure all shipping containers will be returned directly to you from WADDL, please secure your return address to the interior of the cooler lid or side.

Line the cooler with a plastic bag and pack the bagged carcasses in the cooler with **two gel ice packs** to keep the carcasses cold. Use additional gel packs if you ship more than one bird. Place crumpled newspaper or similar absorbent material in the cooler to fill unused space, provide insulation, and absorb any liquids. Keep gel packs in contact with carcasses. Tape cooler shut with strapping tape.

Ship to: **Washington Animal Disease Diagnostic Laboratory**
Washington State University
Bustad Hall, Room 155-N
Pullman, WA 99164-7034
509.335.9696

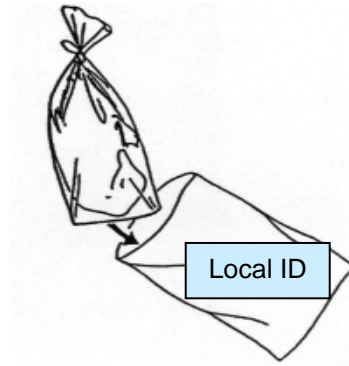
7. **Labeling:** The following labels must be included on Category B shipments: Shipper's name and address; consignee's name and address and the name, address and phone number of a designated person who will be responsible for the shipment during the time it's in transit (the designated Responsible Person should be the person who signs off on the waybill). Additionally, the following label must be included on the package: **UN3373 BIOLOGICAL SUBSTANCE, CATEGORY B** to cover federal shipping regulations.

NOTE: The mark "UN3373" must be in the form of a square set at an angle of 45° (diamond-shaped) with each side having a length of at least 2 inches square and the letters and numbers must be at least 1/4 inch high. The proper shipping name "Biological Substance, Category B" in letters at least 1/4 inch high must be marked on the outer package adjacent to the diamond-shaped mark as shown:

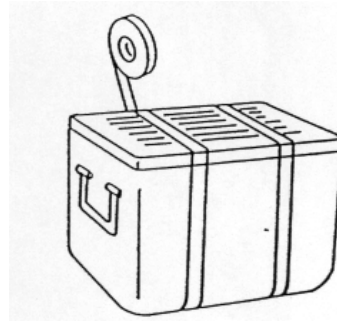
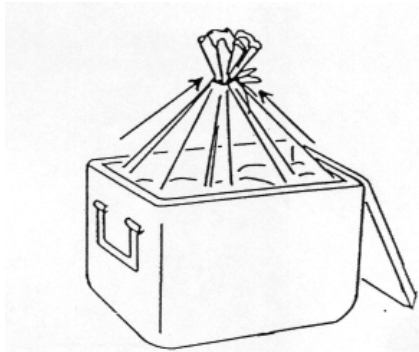


7. Shipping items that are classified as Category B substances requires that the shipper receive ***documented training*** on the federal regulations that cover these substances and the proper method of packing Category B material.
8. For questions, contact Jo Marie Brauner at 360.236.3064 or jomarie.brauner@doh.wa.gov. Ship birds Monday through Thursday by FedEx overnight service using Washington State Department of Health's account. Pre-printed forms will be provided for your convenience. Do not ship on Friday; the laboratory is closed on Saturday. If you cannot ship within 24 hours, freeze the bird.

See shipping diagram on next page.



Place each bird in a plastic bag with absorbent material (paper towel, etc.), seal, then place inside a second bag and seal (more than one individually bagged bird can be placed in the second bag).



- Line the cooler with a plastic bag and pack the bagged carcasses in the cooler with **two gel ice packs** to keep the carcasses cold. Use additional gel packs if you ship more than one bird. Place crumpled newspaper or similar absorbent material in the cooler to fill unused space, provide insulation, and absorb any liquids. Keep gel packs in contact with carcasses.
- Place copies of the Dead Bird Reporting forms in a plastic bag and place inside of the shipping container **on top of the bagged birds**. If more than one carcass is submitted, please include identification number (Local ID) to match bird with the correct form.
- Tape cooler shut with strapping tape. Cooler can serve as the outer package on which to attach labels.



Place labels on outside of cooler. Labels include **Shipper's name and address; Consignee's name and address** and the **Name, Address and Phone Number of a designated person who will be responsible** for the shipment during the time it's in transit and the **label UN3373 - BIOLOGICAL SUBSTANCE, CATEGORY B** to cover federal shipping regulations.

**Washington State Department of Health
West Nile Virus Surveillance
May 2010**

Protocol for West Nile Virus Dead Bird Monitoring

Section D

Guidance for Handling Dead Bird Calls and Concerns about Avian Influenza

West Nile Virus (WNV) monitoring will continue this year in the same manner as previous years. For inquiries from concerned citizens who want to know if a dead bird(s) should possibly be tested for additional avian diseases such as **Avian Influenza**, please follow these guidelines:

- A. Calls about **domestic poultry** should be referred to Washington State Department of Agriculture (WSDA), Avian Health Program. The caller can contact WSDA directly at: 1-800-606-3056.

- B. Calls about **wild** birds should be handled as follows:
 - 1. If it is a waterfowl or other aquatic species, refer the caller to the Washington Department of Fish and Wildlife (WDFW) Dead Bird Reporting Line: 1-800-606-8768. This line is checked for messages only during the normal work week.

 - 2. If it is a raptor, excluding owls, WDFW would like to be notified. In some cases, avian influenza and WNV testing may both be performed. Call the WDFW Dead Bird Reporting Line: 1-800-606-8768.

 - 3. If it is NOT a waterfowl, or other aquatic species, or raptor:
 - a. Three or more sick or dead birds at one time in one location of any species? Refer to the WDFW Dead Bird Reporting Line: 1-800-606-8768.

 - b. Fewer than three birds? Do not refer. Local health may decide whether or not the bird(s) should be tested for WNV or should simply be disposed of.

Personal Protection Equipment (PPE). Current personal protection guidelines are still in effect. The bird should be collected or disposed of using current personal protection guidelines. Avoid bare-handed contact with dead birds. Use a shovel or rubber gloves while handling the bird for WNV testing or disposal. If rubber gloves are not available, use double plastic bags to protect hands. If disposing of the bird, wrap in double plastic bags and place in the garbage. When finished, wash hands with soap and water.

The Centers for Disease Control (CDC) have provided an *Interim Guidance for Surveillance for WNV and/or Highly Pathogenic H5N1 Avian Influenza Virus* with information on personal protection and other bird surveillance topics. A link to the guidance is provided on the WNV Web site at:

www.doh.wa.gov/ehp/ts/Zoo/WNV/LocalHealth.htm or you can go directly to the document at:
www.cdc.gov/ncidod/dvbid/westnile/resources/Interimguidance_WNV_HPAI_bird_surveillance_082206.pdf.

Avian Influenza Interagency Work Group

The Department of Agriculture is the lead state agency for preparedness and response to avian influenza in domestic poultry. The Department of Fish and Wildlife is the lead state agency for preparedness for avian influenza in wild birds. Staff from the Washington Departments of Health, Agriculture, and Fish and Wildlife participate with other state agencies, local health, and other organizations to share information and monitor the current status of avian influenza in Washington, North America and worldwide.

This interim guidance is subject to change as new information becomes available.

Questions on Avian Influenza

Contact the Washington Department of Health, Zoonotic Disease Program

- Ron Wohrle, Environmental Health Veterinarian, 360-236-3369
- Liz Dykstra, Public Health Entomologist, 360-236-3388

Protocol for West Nile Virus Dead Bird Monitoring

**Section E
Training for Corvid Oral Swab Protocol**

2010 West Nile Virus Surveillance

Protocol for Dead Bird Monitoring

Washington State Department of Health
Zoonotic Disease Program

Dead Bird Monitoring Protocol

Two Collection Methods: Swab and Carcass

- ▶ Corvid oral swab sample using Whatman Indicating FTA® Micro Card
- ▶ Non-corvid carcass
 - ▶ For testing approval contact:
Jo Marie Brauner
360-236-3064
jomarie.brauner@doh.wa.gov

Corvid Oral Swab Protocol

About the Whatman Indicating FTA[®] Micro Card

- ▶ Indicating FTA card provides a convenient method to collect and isolate nucleic acid samples for analysis
- ▶ Apply biological sample to the FTA matrix and the nucleic acids are instantly captured and stabilized

Corvid Oral Swab Protocol

About the Whatman Indicating FTA[®] Micro Card

- ▶ Pathogens are inactivated, making samples safe to handle and ship via standard mail
- ▶ Indicating FTA card changes color from pink to white when sample is applied

Corvid Oral Swab Protocol

About the Whatman Indicating FTA[®] Micro Card

- ▶ Indicating FTA card is suitable for samples collected from crows, jays, magpies, and other **corvids** known to have a high viral concentration in oral secretions

Corvid Oral Swab Protocol

- ▶ **Always** wear gloves while handling dead birds and FTA cards
- ▶ Complete a **dead bird reporting form** for each bird and note identification number (Local ID)

Corvid Oral Swab Protocol

- ▶ Place the FTA card on a clean, dry, flat surface.
- ▶ Label card with Local ID and submitting agency
- ▶ With swab in one hand, open the bird's beak with the other hand



Attention: Always wear gloves when handling FTA cards and avoid touching the pink sample area of the card.

Corvid Oral Swab Protocol

▶ Insert foam tip into oral cavity and swab the top, sides, and back of mouth and throat

▶ Soak up as much saliva as possible

Note: Thaw out frozen birds completely before swabbing.



Corvid Oral Swab Protocol

- ▶ Carefully lift the paper cover of the FTA card to expose the pink sample area. Press the foam tip within the center of the sample circle area
- ▶ Roll tip side-to-side to completely saturate sample area

Note: It's not necessary to saturate the entire sample area, just the center portion.



Corvid Oral Swab Protocol

▶ Sample area will turn white indicating the transfer of the sample

Note: Don't reuse the swab after tip has touched the FTA card.



Corvid Oral Swab Protocol

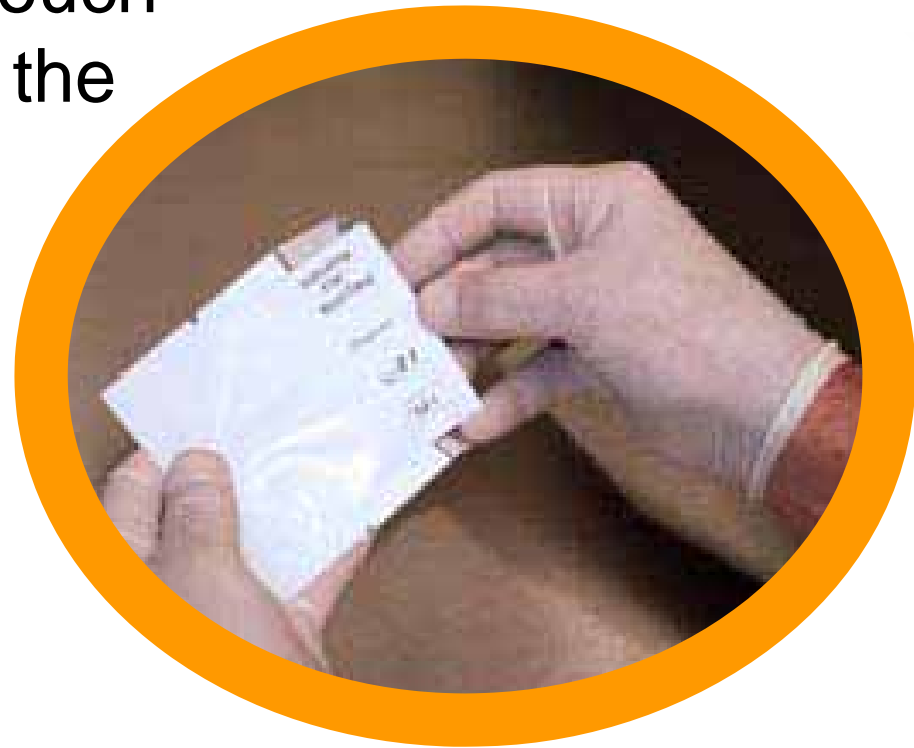
- ▶ Position the FTA card for drying by supporting the sample area with the paper cover as shown
- ▶ Allow the card to dry for 1 hour
- ▶ Appropriately bag and dispose of the bird, swab, and gloves



Corvid Oral Swab Protocol

▶ To transport, place the FTA card into a multi-barrier pouch and seal by folding along the perforated line

Note: Only one FTA card is to be placed in a multi-barrier pouch.



Corvid Oral Swab Protocol

- ▶ Place pouch with the completed [dead bird reporting form](#) into an envelope and mail to WADDL



Submitting Oral Swab

Mail to:

Washington Animal Disease Diagnostic Laboratory
Washington State University
Bustad Hall, Room 155-N
Pullman WA 99164-7034

Dead Bird Monitoring Protocol

DOH West Nile Virus Website

www.doh.wa.gov/wnv

Look under Environmental Health Information

- ▶ Surveillance Information & Tool
 - ▶ Dead Bird Surveillance Protocol & Dead Bird Reporting Form

Dead Bird Monitoring Protocol

Questions? Please contact

Jo Marie Brauner
Zoonotic Disease Program
Washington State Department of Health

360.236.3064
jomarie.brauner@doh.wa.gov

Public Health – Always Working for a Safer and Healthier Washington

Protocol for West Nile Virus Dead Bird Monitoring

**Section F
Dead Bird Reporting Form**

Internal Use State ID _____
County _____
Entry Date _____

Dead Bird Reporting

Internal Use WADDL Log Information

Client

Washington State Department of Health
Office of Environmental Health & Safety
PO Box 47825
Olympia, WA 98504-7825

Submitter

Refer to Submitting Agency below

Case Number (place case number label here)

Submitter Please Complete This Section

Collection Location

Location Name _____

Physical Address _____

Address 2 _____

City/State _____

County _____

Zip Code _____

GPS Coordinate

Latitude (i.e., 47.198062) _____

Longitude (i.e., -122.386037) _____

(Please report your GPS coordinate in decimal degrees with a minimum of six decimal places.)

Location Description _____

Collection Date ____/____/____

Species of Bird Collected _____

Trauma Associated Unsure Yes No

FedEx Airbill # _____

Local ID _____

Online Tracking Number _____

(For reports received through the DOH Online Dead Bird Reporting System)

Submitting Agency

Name _____

Address _____

City/State/Zip _____

Contact Person _____

Phone _____

Fax _____

Email _____

Person Reporting Dead Bird(s)

Date of initial report ____/____/____

Name _____

Phone _____

Date dead bird(s) found or seen ____/____/____

Number of bird(s) seen _____

Species of bird(s) _____

Comments _____

Submit Specimen For Testing To

Please submit specimen to:

Washington Animal Disease Diagnostic Laboratory
Washington State University
Bustad Hall Room 155-N
Pullman, WA 99165-2037
(509) 335-9696

Only submit specimens from birds that have been dead for no more than 24 hours. Complete a reporting form for each specimen submitted. Additional questions contact Jo Marie Brauner of Washington State Department of Health at 360.236.3064 or email at jomarie.brauner@doh.wa.gov.