

**SUBMISSION OF DEAD BIRDS FOR WEST NILE VIRUS SURVEILLANCE
ONTARIO - 2003**

The species to be submitted for West Nile diagnosis are **crows and ravens** only. **Sightings** of dead birds are to be collected at the discretion of each Health Unit, for local analysis, and **are not to be submitted to the Canadian Cooperative Wildlife Health Centre Guelph** for data entry in 2003. The protocols for handling and submission of dead birds are summarized below. They have not changed from 2002.

The **schedule of surveillance, and the testing and reporting process have been modified**, as described in the document (attached) which was made available to Health Units at the Toronto consultation on March 20, and which was subsequently sent by email from CCWHC Guelph to each Health Unit.

RESPONSE TO A SICK OR DEAD BIRD

Health Units need to develop local plans for a timely response to reports of sick or dead birds. This response should incorporate 4 steps, described below. First contact with the person finding sick or dead birds normally will be by Health Unit personnel manning telephones. Those employees should be made aware of the organization of the program locally, and be informed about how to deal with calls about dead birds. A protocol needs to be in place for the collection and submission of carcasses to CCWHC. Pick-up and submission of birds may be by Health Unit personnel or by others contracted locally to carry out nuisance or dead animal response. **All persons taking decisions regarding response and submission, and those handling and submitting dead birds, must be familiar with this document.**

1. The person receiving a call records, on a CCWHC West Nile Virus Surveillance Form (appended): date of call, identity/contacts of caller, species involved (if known), condition of carcass(es), and exact location. Based on that information and criteria described below (species, carcass condition, number of birds sick or dead) decide whether the bird should/can/will be picked up, and if possible, inform caller of that decision. **This person will need to try to determine if the bird involved is a species of concern, specifically a crow or raven** (see Appendix re bird identification for questions to ask). If the bird can't/won't be picked up, inform caller of means of carcass disposal (see below).
2. Despatch, as soon as possible, person responsible for pick-up of bird, if appropriate based on decision in 1.
3. Collection of dead bird: the person doing so revises/completes the WNV Surveillance Form based on direct identification of species and local observations. A decision is made re suitability for submission, based on informed knowledge of species, condition/appearance of carcass and circumstances of mortality. If the bird is not suitable for submission, retrieve and dispose of appropriately.
4. Submit suitable carcass to CCWHC lab, as described below, accompanied by WNV Surveillance Form.

SPECIES OF PARTICULAR CONCERN:

Submit only carcasses of crows and ravens that are suitable for examination (see below), up to the weekly quota allotted (see March 20, 2003 document appended).

OTHER SPECIES OF BIRDS

CCWHC also carries out surveillance for diseases other than WNV in all species of wild birds. Birds of other species should be submitted to CCWHC for autopsy **if there is a clear history of central nervous system signs** (loss of fear, tremors, convulsions, paralysis, wing droop, immobile limb) in live birds, or **if there appears to be an outbreak of disease** (several birds of any species reported affected/dead in a local area [~2 km radius] within a period of 2-3 days). Also **submit any raptorial birds** reported (eagles, hawks, falcons, kestrels, owls etc.). **Use the WNV Surveillance Form to accompany the carcass to the CCWHC.**

If it is not feasible to collect and submit such birds, have the person reporting call the **CCWHC Communications Coordinator (519 823 8800 Ext 54662)** for instructions on how to submit a bird themselves.

A complete autopsy and full diagnostic workup is carried out on all birds other than those submitted for WNV surveillance. If WNV infection is suspected as the cause of death in such a case, it will be submitted for WNV

detection as well.

CONDITION OF CARCASS

Birds must be intact and reasonably fresh (not obviously rotten, no maggots or scavenging) for profitable examination. **Birds that have been found on roadsides or obviously have been traumatized are acceptable.** Crows with WNV seem more susceptible to trauma and misadventure than normal, perhaps because they are sick. Carcasses that are in the open, full sun etc., could be moved to the shade by the person finding the bird, if they are willing (see instructions for handling, below).

A complete examination for cause of death is not normally carried out on WNV surveillance submissions; tissues for WNV detection are all that is retrieved. As well, in the event of a WNV outbreak, effort will be focussed on determining the geographic distribution of infection. Hence, WNV status may not be determined on every carcass, depending on workload and recent WNV activity in the Health Unit. As WNV activity clearly becomes established in a Health Unit, or more widely, dead bird surveillance will be discontinued in parts of a Health Unit, or in individual or contiguous Health Units or larger regions of the province, depending on the extent of WNV activity that has been recognized. This decision will come from the CCWHC Ontario Communications Coordinator, by email or phone, and will be preceded by consultation with Health Unit WNV contact persons regarding reasonable and clear-cut boundaries to areas from which birds should not be submitted, if the entire Health Unit is not involved. This is to save the cost of collection, submission and processing of birds from known endemic areas, so that we can focus our resources on determining the extent of the outbreak beyond its known distribution.

If there is any uncertainty regarding whether-or-not a submission should be made, telephone the CCWHC Communications Coordinator for advice (519 823 8800 Ext. 54662).

HANDLING BIRDS:

Although direct transmission of WNV from birds to people is not known to occur other than through accidental needle sticks, lacerations etc., during laboratory handling, West Nile virus is present in excretions and secretions from affected birds, and members of the public are to be discouraged from handling dead birds. If they must do so for submission or disposal, they should follow these guidelines, which also should be followed by all others handling birds, including Health Unit or Animal Control personnel picking up birds for surveillance.

Live, sick birds should be referred to a local animal control agency, humane society, rehabilitator or collaborating veterinarian for evaluation and, if appropriate, euthanasia, preferably by a method that does not damage the brain. If they meet the species and other criteria, such birds, and those recently-dead of natural causes are ideal submissions.

Birds or carcasses should be handled using an implement such as a small shovel or large tongs, or by hand only if disposable plastic or rubber gloves are worn. Alternatively, carcasses may be placed in a puncture-resistant leak-proof plastic bag of appropriate size by everting the bag over the hand, then grasping the carcass through the bag, and wrapping the bag around the bird without touching it. Heavy-duty plastic bags of adequate size should be used to contain the bird, sealed securely by a twist-tie, knotted string, or by knotting the bag tightly on itself. It then should be placed inside a second leak-proof plastic bag, which is similarly sealed. Double-bagging prevents cross-contamination between carcasses and fluid leaks in shipping. Carcasses should be chilled, but not frozen, unless it will be impossible to get them to the lab within 24-36 hours (distance, weekend intervening), in which case they should be frozen. If in doubt about freezing specimens, consult the CCWHC Communications Coordinator for advice.

Carcasses not submitted should be double-bagged and placed in garbage destined for a landfill, or buried

several feet deep where they will not be disturbed. Do not dispose of in a manner such that they could be handled again by someone. **People handling birds should wash thoroughly with soap and water afterward.**

SUPPLIES REQUIRED FOR SUBMISSION OF A BIRD

Canadian Cooperative Wildlife Health Centre Ontario/Nunavut Region WNV Surveillance Forms: **copy from sample appended**; download from the Internet at <http://wildlife.usask.ca>; or contact CCWHC Communications Coordinator and request additional forms to be sent by fax or email attachment (see contact information below).

Zip-Loc or other clear plastic bags of a size appropriate to enclose WNV Surveillance Forms.

Heavy duty plastic bags big enough to enclose a crow or raven, and strong enough to resist puncture by bills, beaks and claws; secure ties for same.

Waterproof labels/tags, or small waterproof plastic bags (Zip-loc or Whirl-pac) in which to enclose labels/tags; waterproof marking instrument.

Frozen cold packs (**not wet ice**).

Newspaper and a larger leak-proof plastic bag (such as a garbage bag) in which to wrap specimens.

Insulated shipping containers: hard-sided plastic picnic cooler with return address clearly marked. Do not use styrofoam, cardboard or other non-durable shipping containers.

Heavy packing/shipping/duct tape.

SUBMISSION OF SPECIMENS:

If more than one specimen is being submitted, they should be double bagged separately. Bagged carcasses should be identified clearly, using a waterproof writing instrument, on a waterproof label or tag affixed to the carcass, or on paper sealed inside a leak-proof plastic bag, and enclosed inside the bag containing the carcass.

Each Health Unit must develop a coding system for identifying birds submitted from their region, and put the reference number on the carcass tag and on the WNV Surveillance Form in the space provided.

This number will be carried over with other information on the bird to our database, and will assist you in identifying results reported.

A separate WNV Surveillance Form should be filled out legibly for each carcass to accompany the shipment. The form, or forms, if more than one carcass is being submitted, should be enclosed in a Zip-Loc bag (it is permissible to fold the form) and placed in a sealed 8.5 x 11" envelope securely taped on the outside to the side or top of the shipping container.

The 2003 WNV Surveillance Form should include the following information; spaces to fill in, or responses to circle, prompt a response to each item on the form:

Name of the person completing the submission form, full mailing address, telephone number, Fax number, email address

Address to send report, if different from above

Date bird reported to Health Unit

Internal reference number used by the Health Unit

Name of the person reporting dead bird(s), full mailing address, telephone number

Location bird found (most specific street or rural municipal address [Twp., Concession, Lot #], including municipality, province or territory and postal code). In rural areas, due to implementation of a new automated mapping database, 911 addresses are of little use, and Twp/concession/lot are of limited value, though each is better than no address. **If possible, for rural locations, in addition to other address descriptors, include GIS coordinates** (latitude, longitude **as decimal WGS84 data to 4 decimal places or more, not minutes and seconds**). Otherwise, describe a rural address in relation to a clear locality (e.g. 6 km NW of Aberfoyle). A specific location, if possible, is very important, to facilitate mapping of each submission for epidemiologic purposes.

Species: circle species name (crow, raven), or 'unknown', or enter written name of 'other' species.

Species of birds submitted will be confirmed by CCWHC, but try to be as accurate as possible.

Date carcass picked up

Date submitted

Entries related to sightings can be ignored

Double-bagged carcasses should be wrapped in several layers of newspaper, which insulates them and absorbs fluid. A freezer pack (not wet ice) should be wrapped in the newspaper with the chilled carcass(es), but is unnecessary with frozen carcasses. The carcass(es) in newspaper then should be placed in an outer plastic bag, such as a heavy-duty garbage bag, which is sealed securely. The wrapped, bagged carcass then should be placed in a hard-sided plastic insulated picnic cooler (which will be disinfected, rinsed out and sent back with a new waybill enclosed, if it has a return address). **All shipping containers must be securely packed, sufficiently sturdy, and taped shut, to prevent leaks, breakage or opening in handling. Leakage or breakage of a single package in transit could place the entire shipping system, and therefore the surveillance program, in jeopardy.**

Packages should be shipped to the address on the pre-addressed and coded waybills provided by CCWHC. Waybills left over from the 2001 season can be used, but new supplies of waybills will be sent in 2002, and a new waybill will be enclosed in shipping containers returned to you. The waybills provided have been completed fully, with the exception of the information regarding the sender, and the weight. **Please fill in the weight of the parcel on all waybills.** The weight must be marked on the waybill for us to get the concessional rate on shipping charges. Parcels should be under 10 pounds gross weight, if possible. **There is no need to fill in the value of the shipment;** if you do, use 'Nil', or a value under \$100. **Do not check any options regarding delivery times in the Service Box;** these options can cost us hundreds of dollars per shipment. The contents of the parcel have been described correctly as a 'DIAGNOSTIC SPECIMEN - WILDLIFE' on the preprinted waybills sent to you. **Do not use any other terms, and do NOT check the Dangerous Goods square.** The packaging and labelling described matches the criteria for courier transport of carcasses to diagnostic laboratories during WNV investigations in the USA.

Ship by Purolator Courier to:

**Canadian Cooperative Wildlife Health Centre,
University of Guelph,
OVC Receiving, Building 49,
Guelph, ON N1G 2W1.**

[If you need additional waybills, call 519 823 8800 Ext. 54662, or email at ccwhc@ovc.uoguelph.ca].

Ship on Mondays to Thursdays inclusive, ground delivery. **Do not ship specimens on Friday.** Freeze specimens that cannot be shipped to arrive overnight Monday-Friday, and ship on the next appropriate day, bearing in mind any long weekends. **Phone, FAX or Email the CCWHC lab with the waybill # of each shipment,** the day that it is shipped [see phone #, email address above]. This helps us track any shipments that go astray.

Be sure to enclose all WNV Surveillance Forms in a clearly marked envelope taped securely to the outside of the shipping container. **Do not enclose WNV Report Forms in bags with carcasses.**

Dead Bird Surveillance for West Nile Virus Ontario - 2003

Ian K. Barker - 03.03.20

Strategy

The goal is to detect crows and ravens dead of West Nile Virus as early as possible, in light of the probability that, at least in the very southern tier of Health Units in Ontario, where WNV was active in 2001 and 2002, the virus has overwintered in mosquitoes. This may permit early initiation of the amplification cycle in the warmer parts of Ontario. The probability of a mosquito carrying WNV later in the summer/fall is a function of time and temperature over the amplification cycle (higher temperatures shorten mosquito life cycles, and shorten the time taken for mosquitoes infected with WNV to become infectious for other birds or mammals). Hence, the earlier the amplification cycle is initiated, the higher the risk of transmission to people and mammals later in the season.

The initial stages in the process will not change from last year: public education to detect and report dead crows to the health unit; and the health unit shipping birds by courier collect to the Canadian Cooperative Wildlife Health Centre Ontario/Nunavut in Guelph. Modifications in the detection and reporting of WNV infected crows have been made to shorten the test turnaround time, and are described below. And sightings of dead birds will not be entered in the CCWHC database, since, in Canada, the utility of such data in surveillance as a surrogate for dead bird testing, or as a means of quantifying regional risk of infection, has yet to be substantiated.

Time of Initiation of Dead Bird Surveillance

Beginning Tuesday April 15, CCWHC will receive dead crows from the southern tier of Health Units (Windsor-Essex, Chatham-Kent, Lambton, Elgin-St. Thomas, Middlesex-London, Oxford, Brant, Haldimand-Norfolk, Niagara, Hamilton, Halton, Peel, Toronto, York, and Durham). These Health Units each can submit up to 6 dead crows/week, up until Thursday May 1.

Beginning Monday May 5, Health Units in the remainder of Southern Ontario (south of Muskoka-Parry Sound and Renfrew, and extending from Huron to Ottawa and Eastern Ontario) may begin submitting dead crows. From this date forward, all Health Units are to ship no more than 4 birds/week to CCWHC.

Beginning Tuesday May 20, the remaining Health Units in more northern parts of the province may begin shipping dead crows and ravens to CCWHC.

Mechanics of shipping: The same protocols for handling and shipping birds that were used in 2002 should be followed. Shipments should be made Purolator Collect, and pre-printed waybills and submission forms will be sent to each Health Unit by CCWHC before their start date.

Duration of Dead Bird Surveillance

The goal of dead bird surveillance is detection of WNV activity sufficiently early that appropriate measures can be taken by public health authorities to mitigate the risk of human infection. The support for testing is being provided largely by Health Canada, and the cost is such (~\$20/test) that we do not have the resources for testing to evaluate at high geographic or temporal resolution the distribution of WNV infected birds in particular areas.

We will keep accepting birds, after the first WNV + is detected, from peripheral areas of the first few positive Health Units, especially if they are scattered around the province. But as evidence gathers from positive birds in more, and contiguous, Health Units, we may cut some later HUs off at one positive bird, and as the distribution becomes more clearly widespread, we will stop dead crow surveillance completely, at least in southern Ontario.

Testing and Reporting

Testing will be carried out at CCWHC Guelph, using an antigen wicking ELISA (VecTest®), applied to a swab collected from the oropharyngeal area of the bird. This test is ~85% sensitive and ~95% specific in our hands, in corvids only, in comparison with the TaqMan RTPCR on organs carried out last year. Use of VecTest® at Guelph gives the potential for 24 hour turnaround in testing, and obviates the second courier shipment to Winnipeg, often with an intervening weekend. The specimen can be obtained more simply, and the test takes about 30 minutes to carry out.

There is some cost in sensitivity, but we feel that this is compensated by the simpler and faster bird handling and sample collection in our lab, and more rapid test reporting. Most VecTest + birds will be subject to confirmatory testing by PCR on tissues. This will deal with the relatively small probability that a VecTest + result is false. All initial VecTest + birds in a Health Unit will be subject to confirmatory PCR testing, and subsequent birds may be, depending on test burden and cost.

All Vectest + results will be reported directly by CCWHC to the Health Unit involved, and concurrently to the Chief Medical Officer of Health for Ontario, and to Health Canada. We expect confirmatory PCR testing to be carried out at the University of Guelph Animal Health Laboratory, but if PCR is not on stream there at the time that the season begins, it will be done at the Health Canada Winnipeg Lab. Since the burden of front line PCR testing of all dead bird samples has been removed from the Winnipeg lab, their turnaround times shouldn't be excessive, if it is necessary to use them initially. Once PCR capability for diagnosis of WNV is established in Guelph, we expect the turnaround for confirmatory testing to be no more than 2-3 days.

Data on all birds submitted to CCWHC Ontario/Nunavut will be entered in the CCWHC database, and will be captured by Health Canada for national monitoring, WNV status maps and public information tables. As in the past, a short moratorium will be in place before such data becomes public, so that the local health authorities have an opportunity to implement their plans to deal with the eventuality that WNV activity would be detected.

Communications

The email address remains the same: ccwhc@ovc.uoguelph.ca

The extension for our telephone number has been modified by the introduction of a '5' in front of our old extension number, and now is: (519) 823 8800 Ext 54662.

The FAX number remains (519) 821 7520.

We will be emailing and phoning to confirm WNV surveillance and reporting contact names and numbers in individual Health Units over the first 2 weeks of April.



**ONTARIO/NUNAVUT REGION
CANADIAN COOPERATIVE WILDLIFE HEALTH CENTRE**
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Telephone: [519] 823-8800 Ext. 54662 / FAX: [519] 821-7520
email: ccwhc@ovc.uoguelph.ca



WEST NILE VIRUS SURVEILLANCE FORM - 2003

(for use in West Nile Virus Surveillance only)

(Use a CCWHC Incident Report Form to report other wildlife disease/mortality incidents)

Date received by CCWHC:	Necropsy #:	CCWHC #:
Name of person filling out this form:		Address for report:
Address		
Postal Code		Postal Code
Email address:		Email address:
Phone # []		Phone # []
FAX # []		FAX # []

Date reported to Health Unit (Yr/Mo/Day) Health Unit Reference #:

Found by (name, mailing address, telephone):

Location where dead bird found: (Full urban street address; Rural Twp., Lot, Concession; Postal Code or GIS coordinates if possible)

Postal Code: _____

GIS/GPS: Latitude _____ deg N; Longitude: _____ deg W (use decimal WGS84 setting & 4 or more decimal places)

Species: (circle - separate form for each bird, please) Age: Juv Ad Unkn Sex: M F Unkn
 Crow (CCWHC use only)
 Raven
 Unknown Other (write in) _____

Carcass considered worth picking up based on description (circle) Yes **OR** No, not picked up (Sighting only - FAX to CCWHC)
(circle/date when done)

Date carcass visited: (Yr/Mo/Day) picked up (circle) **OR** Not picked up (Sighting only - FAX to CCWHC)
(circle/date when done)

Date Carcass Submitted to CCWHC: (Yr/Mo/Day) **OR** (circle) Not sent (Sighting only - FAX to CCWHC)
(circle/date when done)

Carcass: (circle) Fresh Frozen

Spontaneous death? (circle) Yes No (how killed?) _____