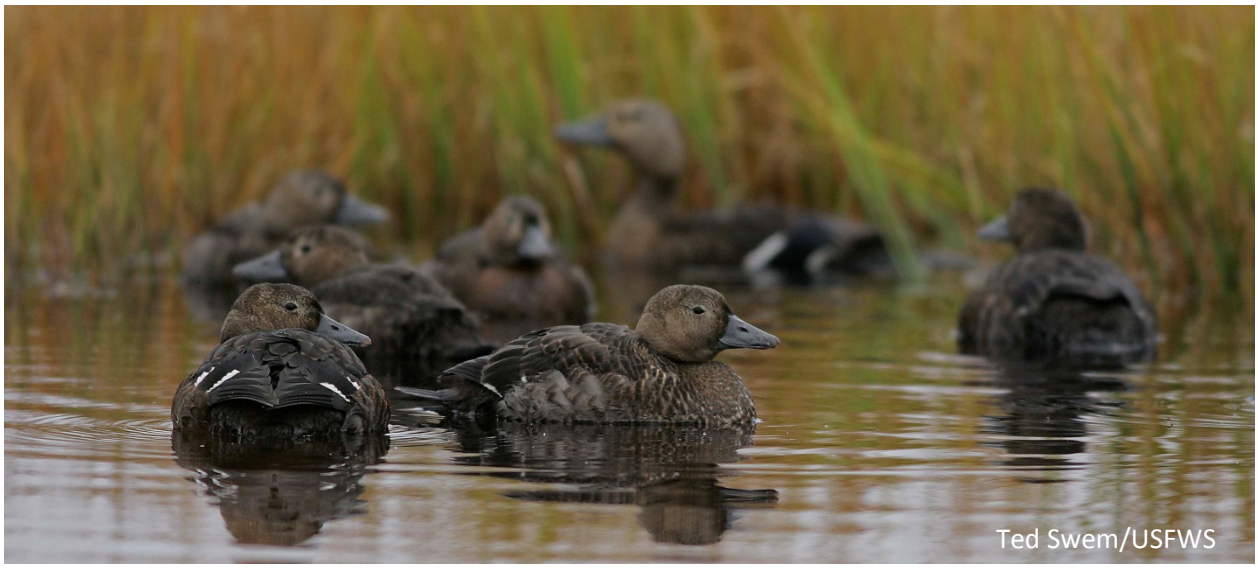
AVIAN MORTALITY EVENT RESPONSE PLAN
U.S. Fish and Wildlife Service, Region 7
Alaska


Ted Swem/USFWS

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Glossary and Acronyms

ADEC: Alaska Department of Environmental Conservation.

ADFG: Alaska Department of Fish and Game.

Biosafety: Protecting yourself and others from being infected with disease agents.

Biosecurity: A comprehensive approach to prevent the inadvertent or intentional introduction of disease agents to new locations where they may cause outbreaks of newly emergent and epidemic disease.

BOEM: Bureau of Ocean Energy Management.

DOI: United States Department of the Interior. DOI includes the following federal bureaus: **USFWS, USGS, NPS, BLM, BIA,** and **BOEM**.

ESA: Endangered Species Act.

HAZWOPER: Hazardous Waste Operations and Emergency Response**.**

HPAI: Highly Pathogenic Avian Influenza.

ICS: Incident Command System.

JHA: Job Hazard Assessment, a documented, ongoing analysis of risks faced during an avian mortality event.

MBM: USFWS Migratory Bird Management.

NPS: National Park Service, responsible for administration of our nation's National Parks.

NWR: USFWS National Wildlife Refuge.

PPE: Personal Protective Equipment.

USDA APHIS: United States Department of Agriculture Animal and Plant Health Inspection Service.

USGS: United States Geological Survey.

USFWS: United States Fish and Wildlife Service, responsible for conservation of our nation's fish and wildlife resources including administration of the Endangered Species Act and the Migratory Bird Treaty Act, and administration of National Wildlife Refuges.

USFWS R7: USFWS Region 7, which includes the entire state of Alaska.

Introduction

The State of Alaska is home to hundreds of species of migratory and resident birds. Waterfowl, raptors, small songbirds, and others travel from across the globe – or weather Alaska's fierce winters – to breed and raise their young in the wetlands, forests, and coasts of the largest state. Although relatively free from diseases that affect avian populations in more temperate areas, climate change is resulting in increased opportunities for diseases – including those that can affect the subsistence way of life or be transmitted to humans. For example, in the fall of 2013, the first recorded incidence of avian cholera occurred on St. Lawrence Island.

The U.S. Fish and Wildlife Service USFWS manages 77 million acres of National Wildlife Refuges in Region 7 (the state of Alaska), including subsistence opportunities on those lands. The USFWS also has responsibility for managing almost all bird species under the Migratory Bird Treaty Act (MBTA) and the Endangered Species Act (ESA). Because of these responsibilities, USFWS should respond to an incident where a large number of birds are found sick or dead. In an ongoing process, we are working with our partners, including the State of Alaska, Tribal entities, and other Federal land managers, to prepare for and respond to these incidents.

What is a "large" event?

Although definitions vary based on numbers, distribution, habitats, migratory or reproductive status, or other factors, for purposes of this document we define a large event as 10 or more birds of a single species or species group, in a single location, which are sick or have died of unknown causes.

Species groups include:

- Raptors
- Other landbirds (passerines, grouse)
- Waterfowl (ducks, geese, swans)
- Other waterbirds (loons, waders, shorebirds)
- Seabirds (gulls, alcids, albatrosses)

This plan is an update of the USFWS R7 2011 High Pathogenicity Avian Influenza (HPAI) response plan. It is designed to serve as a consistent yet updatable regional resource for agency management, First Responders, and the public in the event of a **large** avian mortality or disease event, including one with public health implications. This document goes from general planning to specific actions, and includes detailed appendices and contact lists. We anticipate annual updates to the plan.

First Responders reflect our inter-agency approach to identifying and managing avian mortality events. Current agency affiliations include the Alaska Department of Fish and Game; U.S. Fish and Wildlife Service including National Wildlife Refuges, Ecological Services, and Migratory Bird Management; and, the U.S. D.A. Wildlife Services. In addition, we collaborate and cooperate with the Alaska Department of Environmental Conservation Office of the State Veterinarian. First Responders are, in general, biologists trained in safety, data collection, carcass collection and shipment, and communication techniques specific to avian mortality events. First Responders share a commitment to personal and public safety, accurate data collection, communication, and current training for avian mortality events. Additional agency and Tribal first responders are always welcome; for more information please contact: Eric J. Taylor, Migratory Bird Division Chief, U.S. Fish and Wildlife Service, 1011 E. Tudor Road, MS 201, Anchorage, AK 99503. 907.786.3446 (work), 907.903.7210 (cell), Eric_Taylor@fws.gov.

Disease Prevention and Management

Controlling disease in wildlife is difficult and expensive - **there is no substitute for prevention**. Maintaining healthy animals and healthy populations is far more efficient and cost effective than reacting to diseases once they become a problem. This requires actively focusing on the root causes (often anthropogenic) of wildlife health. Once a disease has become established in a free-ranging wildlife population, there are fewer options available to control it, but implementing **BioSecurity** and **BioSafety** result in the greatest potential for a good outcome.

BioSecurity is…
A comprehensive approach to prevent inadvertent or intentional introduction of disease agents to new locations, where they may cause emergent or epidemic disease outbreaks.

Practicing good biosecurity protects human, wildlife, and livestock health. It also decreases the costs associated with containing a disease after it has been introduced, and helps to protect the local economy by avoiding possible trade restrictions.

BioSafety is…
Protecting yourself and others from being infected with disease agents…It is ***YOUR JOB*** in BioSecurity.

Biosecurity develops as individuals practice biosecurity, by assessing disease transmission risk, using personal protective equipment and exposure zones correctly, and employing appropriate decontamination and disposal procedures.

Disease Prevention: Reduce interactions among humans, domestic animals, and wildlife; and minimize or eliminate unnatural or artificial situations, including:

- Translocation/introduction of free-ranging, captive, or domestic animals, which creates the potential for introduction of disease and may introduce susceptible animals to endemic areas;
- Feeding and baiting of wildlife (supplemental feeding of ungulates, feral animals, and birds), which creates concentrations of animals and increases disease transmission;
- Captive wildlife farming, which creates the potential for introduction of disease and undesired genetic material into wild populations through animal movements; and
- Building or maintaining impoundments or ponds that have poor water quality, which creates attractive sinks that may harbor disease.

Disease Management:

- Manage disease agents (few successful examples of this approach);

- Manage hosts by: restricting wildlife distributions, removing infected animals, reducing infected animal population to decrease disease transmission, vaccination, and treatment of sick animals (last resort because of expense, difficulty, and potential harm);
- Manipulate environment and habitat by creating areas unattractive to wildlife (slow but long-lasting results);
- Restrict human activities including translocation and feeding of wildlife or captive wildlife farming (most efficient management strategy); and,
- Educate the public to reduce risk and increase compliance.

Cooperating Agencies for Avian Mortality Events in Alaska

Federal, State, Tribal, and Municipal wildlife and public health agencies are all interested parties on behalf of the resources they manage and the customers they serve. Currently, we (USFWS R7) are partnering with the State of Alaska Depts. of Environmental Conservation (ADEC - State Veterinarian's Office) and Fish and Game (ADFG - State Wildlife Veterinarian), the USGS National Wildlife Health Center (USGS-NWHC), the National Park Service (NPS), and U.S. Dept. of Agriculture-Animal Plant and Health Inspection Service (USDA-APHIS) to create training opportunities, share resources, and increase communication, both within Alaska and nationally.

Preparing for an Avian Mortality Event

Regional and national assets for avian mortality event response, planning, and communication developed by the USFWS Division of Migratory Bird Management in Region 7 (Alaska) and the USFWS Office of Wildlife Health in Washington, DC, include **multiple reporting options** (see box below) for members of the public and other agencies; a network of trained and equipped First Responders (Fig. 1); and developing cooperative relationships with other State, Federal, and Tribal agencies.

Reporting sick or dead birds:
Anyone - member of the public, subsistence users, hunters, and others - can report dead or sick birds in two ways:

The Alaska Sick or Dead Bird Hotline: 1-866-527-3358

The Alaska Department of Fish and Game, Office of the State Wildlife Veterinarian: 907-328-8354
Or DFG.DWC.VET@alaska.gov

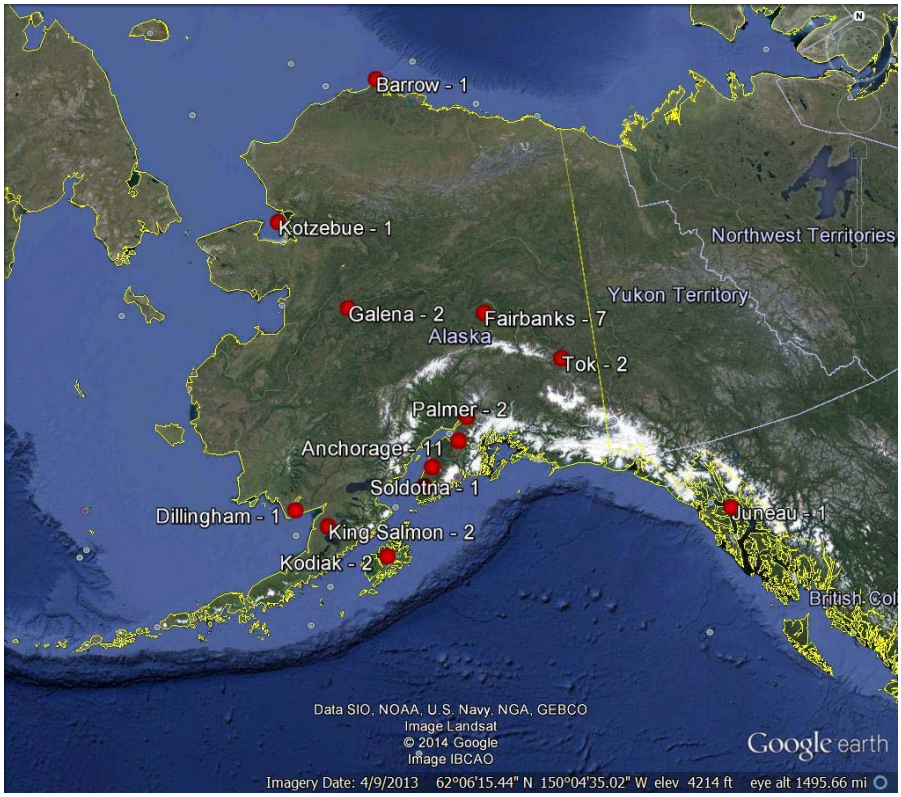


Figure 1. Duty stations for and number of Avian Mortality Event First Responders in Alaska communities, May, 2015.

First Responder Training Requirements

- ***Training in wildlife health and disease response is required.*** The USFWS Wildlife Health Office offers online training for Dept. of the Interior (DOI) employees through the Department of Interior's online training portal, *DOI Learn*; classroom training at the USFWS' National Conservation Training Center (NCTC) in Shepherdstown, WV; and on-site training at National Wildlife Refuges and other field locations. We will attempt to have annual or bi-annual Alaska-specific training in Anchorage. Contact Dr. Samantha Gibbs, USFWS Office of Wildlife Heath, 571-216-5776 or Samantha_Gibbs@fws.gov for more information.
- ***Personal Protective Equipment (PPE) use and training, in accordance with 29 CFR 1910.132 – 134, is required.*** PPE training is included in most wildlife health and disease response courses. Wearing a N95 respirator requires a health assessment and fit test.
- ***Incident Command System (ICS) and 24-Hour HAZWOPER (Hazardous Waste Operations and Emergency Response) training are very useful.*** ICS training can be taken through DOI Learn, and initial HAZWOPER training or the 8-hour annual refresher can be taken inexpensively through commercial vendors.
- ***USFWS safety training to conduct field work may be required.*** This includes Motorboat Operators, Bear Safety and Firearms Qualification, Snowmachine and Off-Road Vehicle training, CPR/First Aid, and Aviation training. These trainings are required for USFWS personnel who will use these vehicles, fly in aircraft, or conduct field work in bear country. For more information, contact Mark Ilg, USFWS Regional Safety and Occupational Health Manager, at 907-786-3588 or Mark_Ilg@fws.gov.
- ***Basic Aviation Safety (A-100), General Awareness Security Training (A-116) and Mishap Review (A-200) are required.*** We consider all personnel, regardless of agency or tribal affiliation, who may respond to a mortality event as potential Aircrew Members, so this training must be completed. Anyone can take these courses online at www.iat.gov.
- ***Water Ditching and Survival (A-312) is required*** for all passengers in USFWS aircraft that will fly over water, with very few exceptions. This training can be arranged through USFWS at no cost for Avian Mortality Event First Responders, regardless of agency or tribal affiliation. Contact Kevin Fox, USFWS Regional Aviation Manager, at 907-271-5234 or Kevin_Fox@fws.gov.

Additional Resources for safety training:

- USFWS Nationwide Safety site: http://www.fws.gov/safety/contactus.htm
- USFWS Region 7: https://fishnet.fws.doi.net/regions/7/admin/sh/SitePages/Home.aspx

Response Kits for Avian Mortality First Responders

USFWS Region 7 - Last updated 27 August 2014

Personal protective equipment (PPE):

- ☐ Rubberized rain jackets and pants (not Gortex)
- ☐ Waterproof boots (knee, hip, or chest waders)
- ☐ Inner "exam" gloves (nitrile is best; 5 pair of your size)
- ☐ Outer gloves (nitrile is best, but can use dishwashing gloves; 2 pair your size)
- ☐ Small container of waterless soap (alcohol-based)
- ☐ Safety goggles or glasses – 2 pair
- ☐ Hair tie (if you have long hair)

Depending on the situation, you may also need:

- ☐ N95 respirator
  - ➢ N95 respirators should only be used after a fit test and health check have been performed. If the situation requires the use of an N95 mask, those personnel without fit-testing and medical clearance should not enter the contaminated area.

Response Kit

- ☐ Telephone numbers of important disease event contacts
- ☐ Reference materials (instructions for shipping carcasses, fact sheets, NWHC forms, etc.)
- ☐ Cooler (1 or more, for shipping carcasses)
- ☐ Ziplocks – quart and gallon (1 box each)
- ☐ 5 heavy duty garbage bags (outer bags for shipping multiple birds)
- ☐ 1 roll of white plastic trash compactor bags (for individual birds)
- ☐ Extra surgical gloves (10 pair each; small, medium, large)
- ☐ Flagging
- ☐ Tyvek suits
- ☐ Heavy plastic disposable boot covers
- ☐ Roll of duct tape (for sealing boot covers and gloves to Tyvek suit)
- ☐ Soap (for washing hands)
- ☐ Disinfectant wipes (e.g., Benzyl-ammonia chloride wipes)
- ☐ Carcass labels ("toe tags") or pre-printed specimen labels (Rite-in-the-Rain)
- ☐ Sharpies, pencils
- ☐ Rite-in-the-Rain notebook
- ☐ Quart-sized spray bottle
- ☐ Bottled water (for washing hands and preparing disinfectant solution) – 2 liters
- ☐ Virkon–S tablets OR bleach
- ☐ Scrub brush
- ☐ Wash bucket that you can stand in (for scrubbing boots)
- ☐ Blue ice or gel packs (keep these in the freezer so they're ready to go at all times)
- ☐ Roll of paper towels (absorbent material in shipping cooler)
- ☐ Zipties (for closing bags)
- ☐ Roll of 2" strapping tape for sealing boxes
- ☐ Shipping forms (FedEx, Alaska Airlines Goldstreak, ERA/Ravn, others for your location)
- ☐ "Freeze" and "Chill" shipping labels
- ☐ "Exempt Animal Specimen" labels
- ☐ "UN3373" labels

Job Hazard Assessment (JHA) for Response Activities

A Job Hazard Assessment (JHA) is a documented, ongoing analysis of risks faced during an avian mortality event, with the primary risk being disease transmission to other birds, other animals, or humans, within or outside of the event site. Because a JHA incorporates **BioSecurity** and **BioSafety,** the analysis should be conducted BEFORE and DURING an event. The basic steps needed for your avian mortality response JHA include:

1) Define the site.
   - Defining the site is crucial for subsequent communication of the event and response.
   - Define and describe the site in a way that is framed to the level of the current response, and update as necessary. For example:
     - Local name - e.g., Duck Camp at Barrow, Alaska;
     - Coordinates from GPS or topographic map, which could be a point or delineate an area boundary;
     - River or air miles from a known landmark.

1) Define your activities.
   - Include length of time, number of people, or other pertinent details for each activity. Examples include:
     - Initial bird survey with beach walk and count of species and number sick or dead;
     - Carcass or sample collection on beach;
     - Set-up and operate incinerator.

2) Assess overall risks of activities.
   - Consider the species you are working with, season, clinical signs or other information relevant to the potential or suspected disease or toxin.
   - Consider environmental conditions that could increase risk of exposure or disease transmission. Examples include:
     - Excessive heat or cold;
     - Slip, trip or fall potential in the work area;
     - Wind that could blow infectious material in your face;
     - Mud that can stick in the bottom of your boot that could contain infectious or toxic material.
   - Consider other conditions that could increase risk of exposure or disease transmission, including:
     - Anyone with a cold or other minor illness or injury in the work group;
     - Lack of sleep;
     - Lack of food or water;
     - Lack of experience in the specific area of planned work activity.
   - If you are not familiar with the disease history, current disease risks, and conditions of the area, assume the worst.
   - Be aware of possible bears in the area due to attraction to carcasses.

3) Evaluate expected level(s) of exposure and associated risk(s) for planned, and potential unplanned, activities.
   - Ensure that everyone in your work unit fully understands the anticipated risks and potential exposures.

- Anyone who is uncomfortable with the work activity should be allowed to discontinue participation.
- Working with apparently healthy animals is lower risk than working with known sick or dead animals, but there is ALWAYS some level of risk.
- Collect sick or dead animals under the assumption that an infectious disease or toxin is involved and that other animals in the area or at home, you, or other people may be at risk.
- If handling sharp instruments, work as though everything is highly infectious or toxic.

4) Identify Personal Protective Equipment (PPE) that is or may be needed.
   - See Response Kit equipment and supplies (Page 6); Appendix A*: Health and Safety Guidance for Handling Wild Birds*; Appendix B: Donning and Removing PPE; and Appendix C: Personal Protective Equipment Specifications and Vendors – Partial List.
   - Improper use of PPE or decontamination procedures can result in human exposure to disease (poor Biosafety) or pathogen transmission (poor Biosecurity).
   - Tie back long hair!
   - Turn your handheld device OFF or leave it in your vehicle while wearing PPE. There is no way to answer it without contaminating yourself and your phone, so don't tempt yourself.
   - Once you have put on your PPE, stop and look yourself over for any nicks, tears, gaps, or folds in the PPE that infectious or toxic material can hide and fix it before proceeding with the work activity.
   - Routinely check your PPE throughout your work activity to ensure it remains intact.
     - Do not hesitate to replace questionable PPE at any time during the work activity.
     - Do not use disposable PPE again if you have already worn it once - saving a few cents on PPE is not worth the health risk.
   - If you are familiar with the area's disease history, current risks, and conditions, remember that familiarity can result in complacency. Do not take possible risks and hazards for granted.

5) Identify risk "zones" in the work area.
   - Draw a map and share with others.
   - The "**hot**" zone where risk of exposure or transmission is highest; appropriate PPE should always be worn in this zone (e.g., a field or beach with sick or dead animals);
   - The "**medium**" transition zone where risk is decreased; this zone may be where decontamination procedures and PPE removal take place (e.g., at the edge of the field or beach or near your vehicle);
   - The "**cold**" zone where risk of exposure is the lowest possible at the site; this zone should be located between the medium zone and your exit from the work site.

6) After decontamination, examine yourself and other crew members, and ask:
   - "Is there any biological material from the outbreak that could possibly be stuck to, soaked through, rubbed in, attached or adhered to boots, clothing, or equipment that could pose a risk to other people, animals or places?"

7) As you leave the site, ask:
   - "Have I left anything behind that could cause exposure or transmission?"
   - "Am I improperly taking anything out that could cause exposure or transmission?"

8) As you step into your vehicle, office, or house, have you reduced the risk of exposure and transmission to the absolute minimum possible?

9) ***Don't blindly follow protocols or procedures without thinking carefully about the risks of exposure and transmission***.

See Appendix D for an Example Job Hazard Assessment.

When an Event Happens

Report the Event

Every situation will be different, with numerous decisions made by the initial responders. One of the first decisions is who to call for help, or to notify that an event is occurring.

With a small number of birds, you may be dealing with it at the community, Refuge, or otherwise local level. You can also always ask for additional help from other First Responders or using the numbers below.

With a large (10 or more birds) avian mortality or morbidity event in Alaska, please:

First call the Alaska Sick or Dead Bird Hotline, 1-866-527-3358. Anyone can call this line maintained by the USFWS Region 7 (Alaska) Division of Migratory Birds, in the USFWS Regional Office in Anchorage, Alaska. If calling on a weekend or a federal holiday, leave a detailed message including your contact information. *Reporting the event at this number helps mobilize additional USFWS resources in Alaska in case you might need them, and helps USFWS management be aware of the event.*

Next, notify one or more of the following, who can provide consultation and guidance:

- ☐ USFWS Wildlife Health Office:
  - Samantha Gibbs, 571-216-5776, samantha_gibbs@fws.gov
  - Lee Jones, 406-587-2169, lee_c_jones@fws.gov
- ☐ USFWS Migratory Bird Management Office:
  - Eric J. Taylor, 907-786-3446 (work), 907-903-7210 (cell), eric_taylor@fws.gov
- ☐ USGS National Wildlife Health Center Field investigation team contact for Alaska:
  - Barb Bodenstein, 608-270-2447, bbodenstein@usgs.gov
- ☐ Alaska Department of Fish and Game, Office of the State Wildlife Veterinarian:
  - 907-328-8354, DFG.DWC.VET@alaska.gov
- ☐ USDA APHIS Wildlife Services Wildlife Disease Biologist:
  - David Sinnett, 907-745-0871, David.R.Sinnett@aphis.usda.gov

Collect Information

Collect the following information:

- ☐ Date found, your name and affiliation.
- ☐ Date of disease onset.
- ☐ Number, species, age, and sex of sick and dead animals.
- ☐ Whether animals were from the wild, wild animals from a captive facility, or domestic.
- ☐ Die-off location, including:
  - Local geographic name (e.g., Moffett Lagoon, NE of Izembek Lagoon) and ownership if known (e.g., Izembek NWR)
  - Waterbody name
  - Street address or nearest city, town, or village
  - State
  - GPS coordinates
- ☐ Number, species, sex, age of carcasses and samples collected.

- ☐ Tissue, preservation method (formalin, frozen), and storage method (refrigerated, frozen) of collected samples.
- ☐ Carcass storage (refrigerated, frozen).
- ☐ Whether the animal was found dead, died in hand, or was euthanized (and euthanasia method).
- ☐ Whether rabies is suspected, and if so has there been any domestic animal or human contact.
- ☐ Symptoms displayed by sick animals (limp, neck arched back, blood coming from mouth, diarrhea, extremely thin, etc.).
- ☐ Other information that might be important for making a diagnosis (recent bad weather, fireworks, electric lines or turbines, tall buildings, what the animals were eating, potential intentional poisoning or shooting, etc.).

Collect Carcasses

- ☐ Contact the laboratory for assistance when collecting samples from animals that are too large to ship.
- ☐ Freezing impedes isolation of some pathogens and damages tissues. Unfrozen specimens are preferred if they can be sent within 24-36 hours of collection. If you cannot ship within 24-36 hours, freeze the carcasses.
- ☐ Use rubber, vinyl, or nitrile gloves when picking up sick or dead animals. If you do not have gloves, insert your hand into a plastic bag.
- ☐ More than one disease may be affecting the population simultaneously. When possible, collect both sick and dead animals. Note behavior of sick animals before euthanizing.
- ☐ Collect specimens that are representative of all species affected and geographic areas.
- ☐ Collect the freshest dead specimens. Decomposed or scavenged carcasses are usually of limited diagnostic value. If you plan to collect animals in the field, take along a cooler containing blue ice blocks or wet ice to immediately chill carcasses.

Package Carcasses

- ☐ Contact laboratory staff to discuss the case and get shipping approval.
- ☐ Fill out the specimen submission form.
  - — Email or fax one form to the laboratory.
  - — Include a second copy of the form inside the package.
- ☐ Monday through Wednesday, ship specimens by overnight, next morning delivery service (e.g., FedEx®, UPS®). If specimens are fresh and need to be shipped on Thursday or Friday, please contact the lab to make arrangements. If shipping from a village, you may need to ship air freight to Anchorage, where the package can then be shipped to the lab.
- ☐ Follow instructions in Appendix E on how to properly package your carcasses or specimens.
- ☐ Print the "Exempt Animal Specimens" package label in Appendix F for your package.

Ship Carcasses to Lab

In most cases, dead birds can be submitted to the USGS National Wildlife Health Center (NWHC) (see Appendix G: Reporting Wildlife Mortality Events to the NWHC, and Appendix H: USGS Wildlife Mortality Reporting Form), but carcasses or samples may also be sent to other laboratories. Other labs may be chosen because they specialize in a species or particular disease, are partners in an ongoing project, have existing work contracts or cooperative agreements, or they are closer.

Wait for Results

Results may not be known for 1 – 2 weeks. The lab might be able to give you their initial impressions based on the history you supplied about the outbreak combined with the necropsy (post-mortem exam) results. However, to confirm the diagnosis, they will need to look at the tissues under the microscope (it takes several days for the tissues to fix and for the slides to be made) and submit samples for microbiology (bacteria and viruses placed on culture can take a week or two to grow) and potentially toxicology, which can take additional time.

In the meantime, you may wish to restrict public access to areas with dead animals, or collect carcasses in public areas and discard appropriately (incinerate/landfill/compost) to prevent scavenging.

The diagnosis might reveal that the outbreak was:

- Large or caused by a disease that affects threatened or endangered species, humans or livestock.
- Small or caused by a common wildlife disease that does not pose a human or domestic animal health risk.

The diagnosis might also be inconclusive, for a variety of reasons. The cause of death might not be determined for a variety of reasons. Additional fresh carcasses might be needed at the diagnostic laboratory if the outbreak continues.

Communicate

Avian Disease Response presents both a challenge and an opportunity for communication with the public. Of particular importance in Alaska is timely and appropriate communication with management (Appendix I: Personnel), other agencies, and rural residents, who may rely upon birds for food. Proper, timely, and effective communication throughout the incident can lead to lasting positive relationships in Alaska communities where views of government may not initially be complimentary.

Communication tips for First Responders:

- Talk to refuge staff and volunteers about the situation so that they can convey that information to the public.
- Respond to media requests with specific information ("we've sent specimens to the lab, these are the species affected and numbers, this is where they were found, the diagnosis is unknown at this time, and results will be disseminated in a press release …"), but do not speculate.
- Coordinate with USFWS External Affairs and the Alaska Native Liaison (see Appendix I: Personnel).
- If you are not comfortable providing information, get communication training or ask for help from External Affairs or outreach specialists.
- Information will be passed along through Facebook and other social media at the local and regional levels, so monitor (or ask for help monitoring) these sources of information so that you can correct any erroneous information.
- However, don't directly contradict someone in the press, unless an outright and dangerous error has been made. Often, you can simply make statements of fact that reduce fears.
- Be as transparent as possible without providing misleading information. Strive to use as little jargon as possible. Don't be afraid to say you don't know but ALWAYS provide a means to get to an answer when possible and ALWAYS follow through with a return phone call or correspondence even if it is simply to say you have no new information at this time. Establish a mechanism that enables communication between residents in the affected areas and the

response team. Don't assume someone else in charge is taking care of it. If you make a commitment to follow-up with someone, you need to be the one to do it.

- Provide a realistic timeline on when the Wildlife Health Center or other laboratory may be able to provide a diagnosis. Address how or if subsistence food resources are or may be impacted by the disease outbreak.
- In some cases, daily up-dates are necessary. Be prepared to appoint someone as the main point of contact and brief all responders with the most up-to-date information as possible. People will inevitably turn to those they trust so try and identify those folks ahead of time that already have an established relationship with community members, and work through this person if possible.
- If possible, always contact the lead tribal entity or landowner or other appropriate entity before beginning any type of response.
- Understand your audience, lines of communication, and ways of getting messages out. Realize that communities communicate differently so getting your messages out may need to include radio shows, community visits, posters at key locations in communities (community center or school), TV public service announcements (PSAs), messages to health and law enforcement personnel, and the internet. Some rural AK villages do not have reliable internet so you need to make all information available in another format.
- Create easy-to-read materials. Be prepared to spend a substantive amount of time talking to people. Part of first response is communication and simply ignoring questions is not acceptable.
- Get as much background information as possible from locals as to when, where, how, what species, have been affected, and ask if this has ever occurred before.
- First Responders should consider taking media training as they may be the first to be questioned by the media.
- If you can't help or address a specific concern, be prepared to find someone who can.

Disease Response Flowcharts

Flowchart A – Preparation and Initial Response

Train

- Identify Wildlife Health Points of Contact (POCs) and First Responders (FRs)
- POCs and FRs need training (Mortality event response, ICS, HAZWOPER)
- Conduct regional briefings and trainings for other personnel to review the Avian Mortality Response Plan, wildlife diseases, PPE, and biosecurity.

Prepare

- Prepare and annually restock a response kit.
- Have blue ice paks in freezer at all times.
- Create and maintain regional network of local, tribal, State, and federal, wildlife and public health experts.
- Develop communication plans for notification, technical assistance, and media relations.

Event Happens

- Use response kit supplies, especially PPE!
- Observe and document situation, collect carcasses.
- Call FWS Wildlife Health Office and the recommended lab.
- Ship carcasses.

Wait for Results

- Restrict public access to areas with dead animals, or collect and dispose of carcasses.
- Respond to media and community requests; contact FWS External Affairs for assistance

Results Received

- Respond to media and community requests.
- View Flowcharts B (small outbreak) and C (diseases of concern to T&E species, livestock, and humans).

Flowchart B – Small outbreaks and common wildlife diseases

Results Received

Small outbreak or common disease

- The FWS Wildlife Health office and analytical lab will assist in interpreting results.

Communi-cate

- Alert/Inform FWS Leadership (Eric J. Taylor, 907-786-3446, eric_taylor@fws.gov).
- Respond to community and media requests for information.

Action Plan

- Decide if immediate or further action is required.
- Is carcass collection warranted for public perception or to decrease disease transmission?

Prevention

- Can we prevent this from happening again?
- Realize that even common diseases can affect wildlife populations.
- Work with the FWS Wildlife Health Office, other labs, and other partners to identify management and prevention solutions.

Flowchart C – Large outbreak and/or a disease that affects Threatened or Endangered species, humans, or livestock

Results Received

Large Outbreak, or Disease of Concern

- The FWS Wildlife Health office and analytical lab will assist in interpreting results.
- *If results indicate an emergency animal disease such as Highly Pathogenic Avian Influenza, the HPAI Response Plan will be followed.*

Communi-cate

- Alert FWS Leadership (Eric J. Taylor, 907-786-3446, eric_taylor@fws.gov
- Notify the Public Health Office, State Veterinarian (Agriculture), State Wildlife Veterinarian, USDA, and other relevant partners.
- Develop a news release in conjunction with FWS External Affairs.

Action Plan

- Work with partners to determine immediate actions.
- Are human health precautions required?
- Implement biosecurity to limit spread of disease.
- If appropriate for diagnosis, remove and dispose of carcasses.

Prevention

- Can we prevent this from happening again?
- Work with FWS Wildlife Health Office, lab, and other partners to identify management and prevention solutions.

Appendix A: DOI Employee Health and Safety Guidance for Avian Influenza Surveillance and Control Activities in Wild Bird Populations, 2014

Memorandum

To: DOI personnel

From: DOI One Health Group and the DOI Office of Occupational Safety and Health

Subject: Updated Employee Health and Safety Guidance for Avian Influenza Surveillance and Control Activities in Wild Bird Populations, 2014

The existing guidance document, *Employee Health and Safety Guidance for Avian Influenza Surveillance and Control Activities in Wild Bird Populations*, was developed in 2006 during interagency/intra-departmental pandemic/avian influenza planning efforts. This 2006 guidance was modified by the DOI One Health Group in January 2014 to reflect recent research findings and shifts in the ecology of influenza viruses.

In the 2014 review, the recommendations for two of the topics addressed in the 2006 guidance were revisited and revised:

I. The use of Personnel Protective Equipment (PPE) when handling birds
II. Recommendations for influenza vaccination and anti-viral medication for DOI personnel handling birds

In addition to providing updated guidance, this memo serves as a reminder to DOI personnel, as well as their supervisors and managers, to be mindful of the tendency to normalize risk. This creates an environment where behaviors are accepted because they have not resulted in adverse effects to the individual in the past. Managers, supervisors and employees need to be watchful of this tendency, and must implement robust management and supervisory controls to prevent this from occurring in all types of field operations. In addition, personnel need to look out for one another and correct their peers when they are engaging, or preparing to engage, in behaviors that may get them or others hurt or ill.

If you have questions regarding these documents, please contact your Bureau Safety Manager or Tim Radtke, Office of Occupational Health and Safety, at (303) 236-7128 ext. 226.

Updated Employee Health and Safety Guidance for Avian Influenza Surveillance and Control Activities in Wild Bird Populations, 2014

This document provides guidance for protecting Department of Interior (DOI) employees involved in handling wild birds. The risk of exposure to influenza viruses, and consequent safety recommendations, are dependent on the suspected presence of one or more zoonotic avian influenza viruses (strains that are infectious to humans) in wild birds in North America or the Pacific Islands. Zoonotic avian influenza outbreaks in poultry or other domestic birds may or may not present risk to wild birds or people handling wild birds. Discuss any questions or concerns with your regional Wildlife Health Office or Health and Safety Office.

I. Personal Protective Equipment (PPE)

Instruction and up-to-date information must be provided to personnel at risk of coming in contact with zoonotic avian influenza:

- while handling infected animals - trapping and handling of wild birds, euthanasia, carcass collection and disposal
- while working with contaminated objects or surfaces - cleaning and disinfection of equipment/vehicles/non-disposable PPE
- through contact with infected persons

DOI agencies are required to provide the necessary PPE to at-risk personnel. PPE use and training is done in accordance with 29 CFR 1910.132 – 134.

Opening carcasses in the field is not recommended as this may increase the risk of disease transmission and decrease the diagnostic value of the carcass. Consult DOI health and safety officers for more guidance if this activity is necessary.

The following table describes conditions and general activities and the protective measures required to minimize exposure to zoonotic avian influenza. It specifies the **minimum personal protective equipment** to be used for each activity. Other PPE and safety precautions may be necessary depending on specific conditions of the worksite or the tasks.

It is important to note that the table does not attempt to cover all tasks that may be assigned to DOI personnel. High exposure tasks not anticipated in the table should be evaluated in consultation with DOI health and safety officers.

Guidance on PPE will continue to be re-evaluated as more information becomes available and as the characteristics of different avian influenza viruses are better defined.

Designated protective measures should be applied for at least 30 days after the date of the last detection of zoonotic avian influenza in wild birds within North America or the Pacific Islands.

CONDITIONS	ACTIVITY	PPE	WORK PRACTICE
GREEN - LOW RISK CONDITIONS			
1.a. Zoonotic avian influenza is **not known or suspected** in wild birds within North America or the Pacific Islands.	Handling apparently healthy birds.	Follow all PPE and standard work practices recommended for normal operations at your station. Consult regional health and safety expertise regarding zoonotic disease risks in your area.	1. Wash your hands often and thoroughly for at least 30 seconds (using soap/water or alcohol-based hand sanitizer) before eating, smoking, using cell phone and touching your face, hair, or exposed skin. 2. If working indoors, work in well-ventilated areas. When working outdoors, work upwind of animals to decrease the risk of inhaling airborne particulate matter such as dust, feathers, or dander. 3. Gloves, aprons, goggles, face shields, rubber boots, and coveralls that can be easily disinfected may also be worn to prevent skin and mucous membrane contact with biological materials, and prevent movement of biological materials to other sites.
1.b. Zoonotic avian influenza is **not known or suspected** in wild birds within North America or the Pacific Islands.	Handling sick or dead birds.	Follow all PPE and standard work practices recommended for normal operations at your station. Consult regional health and safety expertise regarding zoonotic disease risks in your area.	1. Remove gloves and wash your hands often and thoroughly for at least 30 seconds (using soap/water or alcohol-based hand sanitizer) before eating, smoking, using cell phone and touching your face, hair, or exposed skin. 2. If working indoors, work in well-ventilated areas. When working outdoors, work upwind of animals to decrease the risk of inhaling airborne particulate matter such as dust, feathers, or dander. 3. Aprons, goggles, face shields, rubber boots, and coveralls that can be easily disinfected may also be worn to prevent skin and mucous membrane contact with biological materials, and prevent movement of biological materials to other sites.

ORANGE - MEDIUM RISK CONDITIONS			
2.a. Zoonotic avian influenza is **confirmed[1] or presumed to be present** in wild birds within North America or the Pacific Islands.	Handling, investigation, or disposal of any healthy or sick, live or dead wild birds.	• Impermeable gloves (pvc or nitrile) or heavy duty rubber work gloves • Goggles • NIOSH-approved disposable N-95 particulate respirator[2]. Workers must be fit-tested and medically cleared annually prior to wearing a respirator. • Disposable Tyvek coveralls or raingear that can be disinfected • Waders, hip-boots, rubber boots or boot covers	In addition to the work practices listed above: I. Suppress dust at the work site using water I. Minimize direct contact with birds and their secretions, feathers, and dander. I. Minimize contact with carcasses when bagging birds. V. Contact recipient laboratories prior to collection and shipping; follow their guidelines. Remove PPE in the following order: 1. Carefully remove coveralls and boot covers and discard as contaminated material if disposable. 2. Disinfect rubber boots. 3. Remove gloves and immediately wash hands thoroughly with soap and water (or an alcohol-based hand gel when soap and clean water are not available). 4. Remove eye protection and place in designated receptacle for subsequent cleaning and disinfection. 5. Remove N-95 disposable respirator and discard. 6. Immediately after all PPE has been removed, wash hands thoroughly a second time and wash face.

[1] Refers to situations where the National Veterinary Services Laboratory confirmed the presence of an avian influenza virus that is pathogenic for humans in a wild bird or a presumptive diagnosis of an avian influenza virus from a wild bird found dead or moribund.

[2] Use of respirators including N-95 filtering facepiece respirators requires implementing a Respiratory Protection Program as required by the Occupational Safety and Health Administration. This includes training, fit-testing, and fit-checking to ensure appropriate respirator selection and use. To be effective, respirators must provide a proper sealing surface on the wearer's face. Detailed information on respiratory protection programs is provided at: www.osha.gov/SLTC/etools/respiratory/index.html and www.cdc.gov/niosh/topics/respirators/. Under certain high risk conditions such as handling large numbers of birds in a confined area confirmed to have the HPAI virus, it may be necessary to upgrade respiratory protection to powered air purifying respirators (PAPR) or other protection options.

RED – HIGH RISK CONDITIONS			
2.b. Zoonotic avian influenza is **confirmed[1] or presumed to be present** in wild birds within North America or the Pacific Islands	Cleaning and disinfecting equipment known or suspected to be contaminated with zoonotic avian influenza	• Impermeable gloves (pvc or nitrile) or heavy duty rubber work gloves • Goggles • NIOSH-approved disposable N-95 particulate respirator[2]. Workers must be fit-tested and medically cleared annually prior to wearing a respirator. • Disposable Tyvek coveralls or raingear that can be disinfected • Waders, hip-boots, rubber boots or boot covers	In addition to the work practices listed above: 1. Clean surfaces of equipment and reusable PPE with detergent and water, then disinfect with a virucide (such as Virkon®) that kills avian influenza viruses. Follow the label instructions. 2. www.epa.gov/pesticides/factsheets/avian.htm lists registered products. If a registered product is not available, use 3/4 cup of household bleach (5.25-6.00% sodium hypochlorite) per gallon of water for hard, non-porous surfaces. 3. Avoid generating mists with water sprayers during equipment decontamination procedures. 4. Do not touch any part of exposed person (especially the face) with gloved hands. Replace torn or damaged gloves immediately. 5. Additional protection (such as aprons and face shields) may be desired during equipment decontamination to prevent contact with contaminated material. 6. If there is known exposure to body fluids of the carcass (examples: knife cut, needle stick) contact your health care professional and provide a complete history of your activities. Carefully remove PPE in the order as described above in section 2a.

[1] Refers to situations where the National Veterinary Services Laboratory confirmed the presence of an avian influenza virus that is pathogenic for humans in a wild bird or a presumptive diagnosis of an avian influenza virus from a wild bird found dead or moribund.

[2] Use of respirators including N-95 filtering facepiece respirators requires implementing a Respiratory Protection Program as required by the Occupational Safety and Health Administration. This includes training, fit-testing, and fit-checking to ensure appropriate respirator selection and use. To be effective, respirators must provide a proper sealing surface on the wearer's face. Detailed information on respiratory protection programs is provided at: www.osha.gov/SLTC/etools/respiratory/index.html and www.cdc.gov/niosh/topics/respirators/. Under certain high risk conditions such as handling large numbers of birds in a confined area confirmed to have the HPAI virus, it may be necessary to upgrade respiratory protection to powered air purifying respirators (PAPR) or other protection options.

II. Vaccination, anti-viral medications, and medical monitoring

Personnel should obtain the seasonal influenza vaccine. Follow the Advisory Committee on Immunization Practices (ACIP) annual recommendations for the prevention and control of influenza with vaccines, which include information on the available vaccine products, timing of vaccination, and vaccination of individuals who could have complications from receiving the vaccine. The annual ACIP recommendations can be found on the Centers for Disease Control and Prevention (CDC) website (http://www.cdc.gov/flu/index.htm).

Vaccination for seasonal influenza viruses will reduce the possibility of an individual being infected with both avian and human influenza viruses at the same time. There is a small possibility that dual infection could occur and result in viral re-assortment, which would result in new, previously unrecognized virus subtypes.

During a threat or occurrence of an actual pandemic, CDC will develop guidance on anti-viral medication and emergency vaccine use based on population risk during an influenza pandemic.

DOI personnel who develop influenza symptoms within 10 days after working with wild birds or being in contact with people suspected to be ill with avian influenza should have prompt telephone access to a health care provider and access to medical care within 48 hours after symptom onset.

- Instruct workers to be vigilant for the development of fever, respiratory symptoms, and/or conjunctivitis (i.e., eye infections) for 10 days after last exposure to avian influenza-infected or exposed birds or to potentially avian influenza-contaminated environmental surfaces.
- Individuals who become ill with symptoms mentioned above should promptly seek medical care and prior to arrival notify their health care provider that they have been working under conditions where zoonotic avian influenza virus was potentially present. In addition, employees should notify their Bureau health and safety representative. They should limit contact with others if at all possible.
- With the exception of visiting a health care provider or seeking emergency care if necessary, individuals who become ill should be advised to stay home until 24 hours after resolution of fever, and follow the guidance of their health care providers. While at home, ill persons should practice good cough and hand hygiene to lower the risk of transmission of virus to others. For further information, visit the CDC website: http://www.cdc.gov/flu/protect/covercough.htm

Appendix B: Donning and Removing Personal Protective Equipment (PPE)

Last updated by FWS Wildlife Health Office, 2014

Goal: Safely use Personal Protective Equipment (PPE) during wildlife health sampling and surveillance activities.

Previous Training Required: If using respirators, Respirator Certification Training, medical clearance and Respirator Fit Testing by your regional Safety Office are required.

You will need:

- Disposable Tyvek® or other fluid-resistant coveralls
- Rubber boots or boot covers
- Latex or nitrile gloves
- Safety goggles or glasses
- Trash bags for contaminated waste
- Bucket and scrub brush
- Prepared disinfectant (Roccal-D Plus®, 10% bleach solution or other as appropriate)
- Designated "dirty", "clean" and "decontamination" areas

Procedures:

A. Perform an assessment of the current surveillance or sampling situation, including species, season, clinical signs, or other information relevant to potential or suspected disease; history of disease in the area; and anticipated amount of exposure to potentially infectious materials relative to goal of sampling and/or surveillance activities. *If uncertain of appropriate PPE relative to potential risk, contact the Wildlife Health Office

B. Define "dirty" (highest risk), "clean" (lowest risk) and "decontamination" (intermediate risk for clean-up) areas as appropriate for the situation.

C. Donning PPE – Before entering the designated "dirty" area
    1. Put on eye protection (glasses or goggles)
    2. Pull on coveralls (Figure 1), close the front with zipper and/or tape and inspect for any holes or tears in fabric.
    3. Pull on boot covers or rubber boots, being sure to pull the cuffs of coveralls OVER the boot covers (Figure 2) or rubber boots (Figure 3).
    4. Put on gloves with the coverall cuffs OVER the cuffs of the gloves (Figure 4).
    5. If using double gloves, you may insert your thumb through the sleeve edge of the coveralls before putting the outer glove layer on to secure the coverall sleeve in position. You may then put the second glove layer over the coverall cuffs (Figure 5).

D. Removing PPE – Occurs in the "decontamination" area before re-entry to "clean" area
    1. Unzip front of coveralls. Pull from shoulders, then carefully remove coveralls from torso and roll downward towards ankles (Figure 6)
    2. If wearing boot covers, roll coveralls down over the outside of boot covers (Figure 7) and step out of and away, into the clean zone. Roll and dispose of coveralls and boot covers properly in plastic bags.
    3. If wearing rubber boots, roll coveralls down over outside of boots to the top of the foot.

4. Then step on the coveralls while pulling the alternate knee up, pulling legs up and out of coveralls one at a time. Roll up and dispose of coveralls. Scrub and disinfect all outer boot surfaces. Step out of boots, step into shoes in the clean zone.
5. Remove soiled gloves by first gripping the palm of one glove with fingers of the other, and pulling the glove off away from the hand firmly (Figure 8). Do NOT slide the thumb of one dirty glove underneath the cuff of the other.
6. Grip the first removed dirty glove in the palm of the remaining gloved hand.
7. Slide your clean bare thumb underneath the cuff of the opposite glove (Figure 9).
8. Pull the second glove over the hand, pulling inside out and over the first glove. The first glove should end up enclosed inside the inverted second glove (Figure 10).
9. Wash hands thoroughly with soap and water (or an alcohol-based gel disinfectant when soap and water are unavailable).
10. Remove eye protection.
11. After hands are dry, don a fresh pair of gloves and disinfect instruments, tools and disposal bags before removing from decontamination zone.
12. Remove gloves, wash and disinfect hands thoroughly a second time.

<u>QUICK PPE CHECKLIST:</u>

__ Assess surveillance or sampling situation, including information and history relevant to potential disease risk for anticipated activities and level of potential exposure.

__ Define contamination zones, including “clean”, “dirty” and “decontamination”

__ Don PPE in the following order:
- __ Eye protection
- __ Coveralls
- __ Boot covers or rubber boots
- __ Ensure coverall cuffs are over footwear
- __ Gloves, with no bare wrist exposed

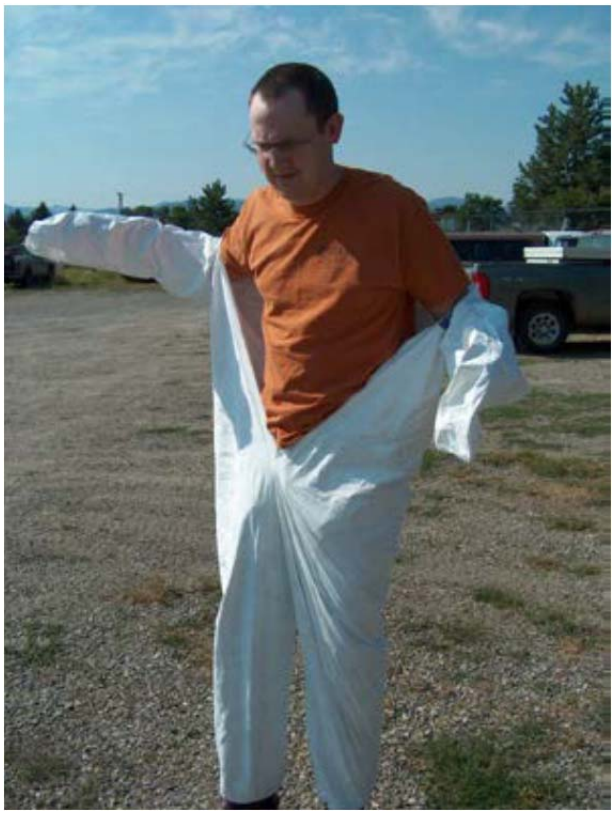
__ Throughout surveillance or sampling activity, periodically check integrity of PPE and replace as necessary

__ Remove PPE in the following order:
- __ Coveralls
- __ Boot covers or disinfected rubber boots
- __ Gloves, ensuring no contact between contaminated outer glove surface and skin
- __ Wash hands
- __ Eye protection

__ Using a fresh pair of gloves, disinfect instruments, tools, and anything else leaving the area

__ Remove gloves and wash/disinfect hands thoroughly a second time

Figure 1. Don coveralls and inspect.



Figures 2 and 3: Coveralls properly pulled down over footwear.

Figure 4: Coverall cuffs OVER single layer of gloves.

Figure 5: Second glove layer may go over coveralls.

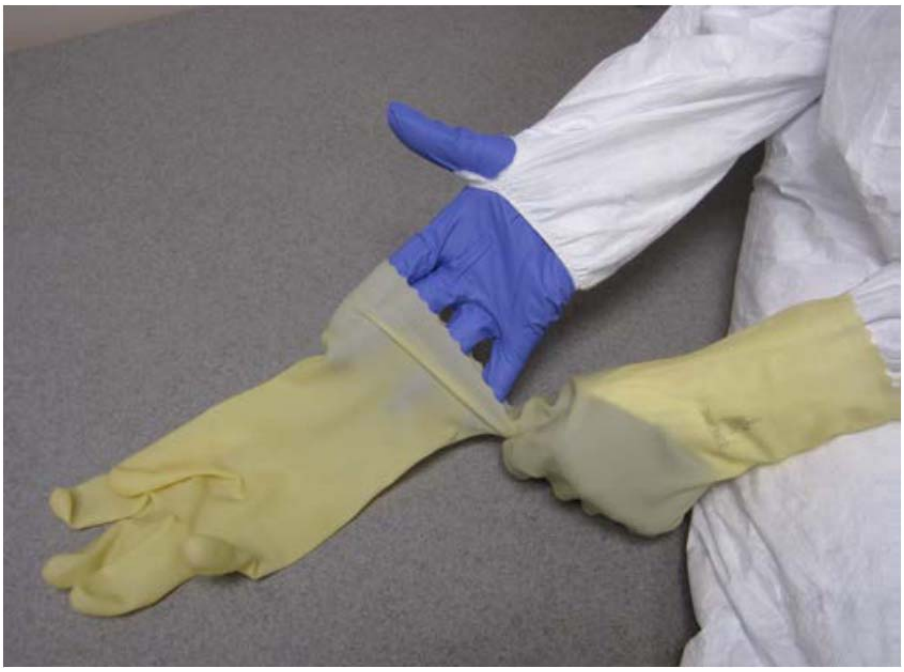


Figure 6: Rolling coveralls down.

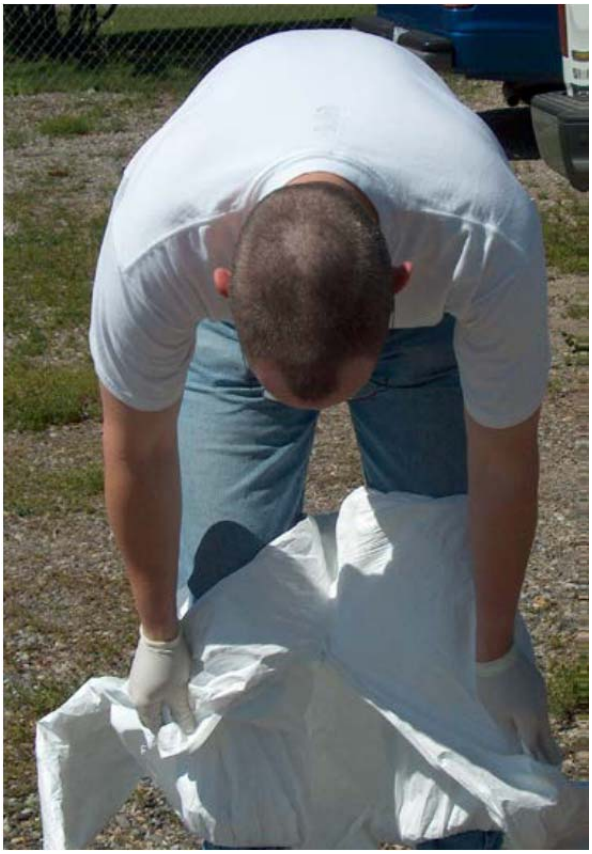


Figure 7. Coveralls properly rolled down around outside of boot covers.

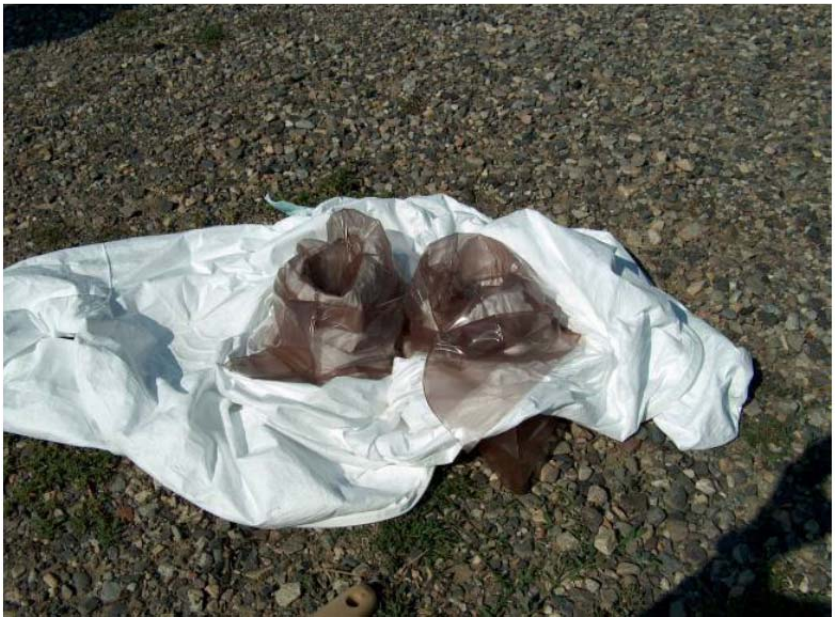
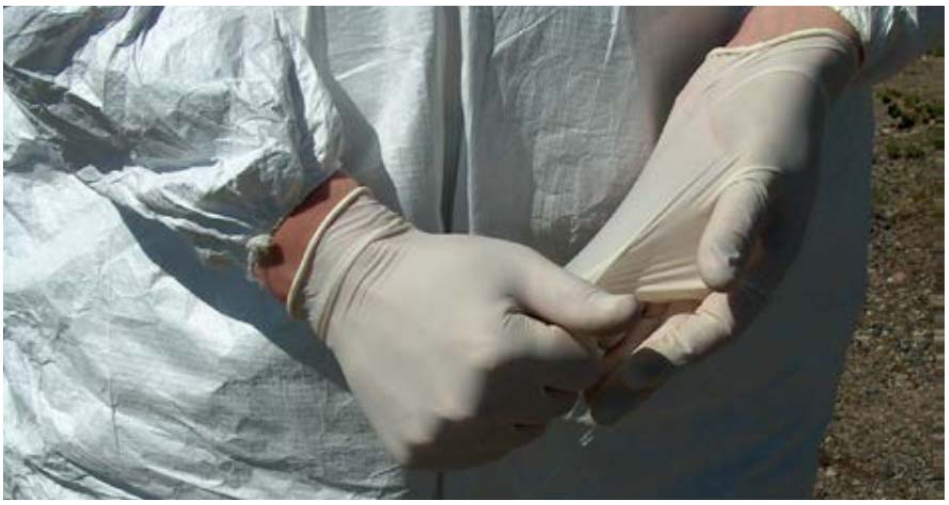
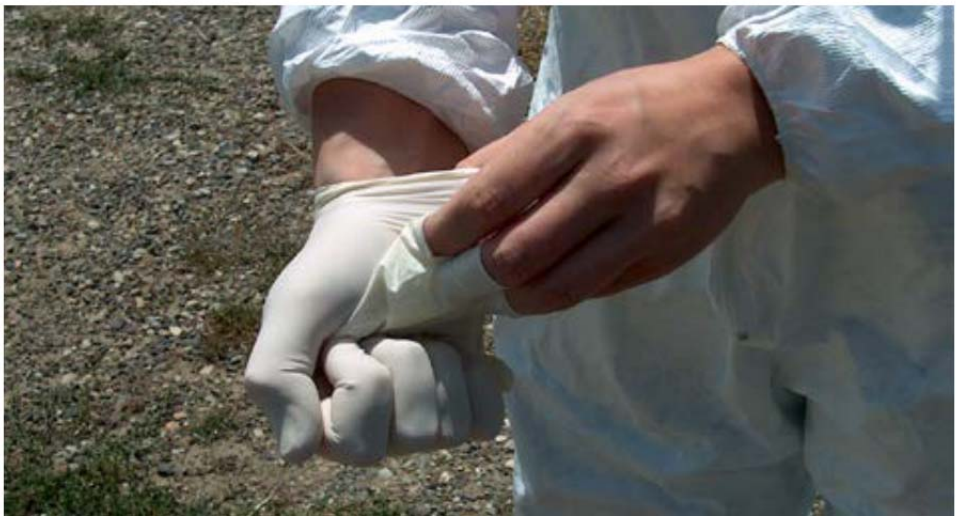


Figure 8: Removing first glove properly, with no contact between outside of glove and bare skin.



Figures 9 and 10: Gripping first soiled glove in palm of second gloved hand, using thumb to pull glove inside out and over first soiled glove with no contact between skin and outside of either soiled glove.



Appendix C: Personal Protective Equipment Specifications and Vendors – Partial List

Personal Protective Equipment Vendors

Item Descriptio	Vendor	Website	Comments
Disposable Shoe Covers	Koch (Bunzl	https://www.bunzlpd.com/home.php?cat=990016	Water resistant plastic/poly covers with elastic tops are recommended. Don't use covers made of Tyvek or similar material.
	Grainger	http://www.grainger.com/category/shoe-and-boot-covers/disposable-and-chemical-resistant-clothing/safety/ecatalog/N-j1g	
Disposable Latex Exam Gloves	Koch (Bunzl	https://www.bunzlpd.com/home.php?cat=990060	Although latex often provides a better fit and is more flexible, reducing hand fatigue, most people who use latex eventually develop an allergic response. Various thicknesses and cuff lengths available.
	Uline	http://www.uline.com/Grp_100/Latex-Gloves	
	Grainger	http://www.grainger.com/category/disposable-gloves/gloves-and-hand-protection/safety/ecatalog/N-mlb	
	VWR	https://us.wr.com/store/search?&pimId=8532941	
Disposable Latex Technician	Koch (Bunzl	https://www.bunzlpd.com/home.php?cat=990055	Used for second glove layer for high risk activities. Size 8 is roughly a medium.
	Grainger	http://www.grainger.com/product/ANSELL-Neoprene-Natural-Latex-Chemical-WP55413/_/N-/Ntt-technician+glove?sst=subset&s_pp=false&sgAttributes=	
Disposable Nitrile Exam Gloves	Koch (Bunzl	https://www.bunzlpd.com/home.php?cat=990060	Cuff lengths vary. Thickness ranges from 3.5 mil. to 9 mil. Recommended thickness is 4-5 mil to reduce hand fatigue unless using for high risk activities.
	Grainger	http://www.grainger.com/category/disposable-gloves/gloves-and-hand-protection/safety/ecatalog/N-mlb	
	Uline	http://www.uline.com/Grp_366/Nitrile-Gloves	
	VWR	https://us.wr.com/store/search?&pimId=8532941	
Disposable Tyvek	VWR	https://us.wr.com/store/search?&pimId=548981	Available in lightweight, but heavy-duty coveralls without attached shoe covers are recommended for most activities. Before ordering with attached hood, consider the need for head protection relative to the risk of trapping infectious
	Uline	http://www.uline.com/BL_982/Tyvek-Protective-Clothing	
	Grainger	http://www.grainger.com/category/chemical-resistant-and-disposable-coveralls/disposable-and-chemical-resistant-clothing/safety/ecatalog/N-kgr	
Disposable Respirators	Koch (Bunzl	https://www.bunzlpd.com/home.php?cat=991370	Non-voluntary use of respirators including N-95 filtering facepieces requires implementing a Respiratory Protection Program as required by OSHA. This includes training, fit-testing, and fit-checking to ensure appropriate respirator selection and use. To be effective, respirators must provide a proper sealing surface on the wearer's face. Contact your regional Health and Safety Office for more information.
	VWR	https://us.wr.com/store/search?&pimId=2993448	
	Grainger	http://www.grainger.com/category/disposable-respirators/respiratory/safety/ecatalog/N-b45#nav=%2Fcategory%2Fdisposable-respirators%2Frespiratory%2Fsafety%2Fecatalog%2FN-b45Z1z0g28vZ1z0g20a%3FPid%3Dsearch%26_%3D1392051170484	
	Uline	http://www.uline.com/Grp_230/Dust-Masks-and-Respirators	
Safety Glasses	Koch (Bunzl	https://www.bunzlpd.com/home.php?cat=991310	Goggles provide greater protection than safety glasses for high risk activities.
	Uline	http://www.uline.com/Grp_208/Safety-Glasses-Goggles	
	Grainger	http://www.grainger.com/category/safety-glasses/eye-protection-and-accessories/safety/ecatalog/N-k2a?cm_sp=Generic%2520Terms-_-Eye%2520Protection-_-Safety%2520Glasses	
	VWR	https://us.wr.com/store/search?&pimId=570540	

Appendix D: Example Job Hazard Assessment

JOB HAZARD ASSESSMENT (JHA)

ACTIVITY: Ungulate necropsy and sampling

(CERTIFICATION OF HAZARD ASSESSMENT - 29 CFR 1910.132(d))

STATION: National Wildlife Refuges

DATE PREPARED: 11/12/2013

PREPARED BY: Lee C. Jones

CERTIFIED BY:

PERSONAL PROTECTIVE EQUIPMENT REQUIRED:

- ☐ Electrical
- ☒ Eyes/Face
- ☒ Foot
- ☒ Hand
- ☐ Head
- ☐ Leg
- ☒ Body/Other

QUALIFICATIONS, EXPERIENCE, OR TRAINING REQUIRED:

Persons are familiar with R8-Wildlife Health Donning and Doffing PPE Protocol.
Persons are familiar with R8-Wildlife Health Sample Handling and Shipping Protocol.
Persons are familair with basic First Aid procedures.
Persons handling formalin are familiar with 242 FWS Formaldehyde Exposure Control policy.

BASIC JOB STEPS	HAZARDS	SAFE JOB PROCEDURE
Break work down to basic elements (such as remove, lift, carry, stop, start, apply, return, squeeze, weld, saw, walk, hold, grind, place, etc.). Describe what is done, not how it is done.	For each job step, state what accident could occur and/or what hazard is present. To determine this, ask yourself, "Can the person fall; overexert; be exposed to burns, fumes, rays, gas, etc.; hit against; be struck by; in contact with; be caught in, on, or between?"	State how each element of work should be performed to prevent the accident or avoid the hazard. What should the person do or not do? Be specific. What precautions should be taken? Ask yourself, "What can I do to eliminate, modify, guard, identify, or protect against the potential hazard or accident, including such things as how the worker stands, holds, uses, carries, dresses, etc.?"
Field blood sampling and carcass tagging.	Injuries from animal. Injury from sharp instruments. Disease transmission from potentially biohazardous fluids, tissues or feces.	Ensure animal has ceased respiration and lacks blink reflex. Handle knives, needles and other sharp instruments carefully. Warn others before initiating cutting. Store properly sheathed when not in use. Use first aid procedures for any cuts. See below under Necropsy and sample collection.
Loading, moving or positioning carcass	Back, muscle and/or joint injuries. Disease transmission from potentially biohazardous fluids, tissues or feces.	Use proper lifting techniques with enough people to assist. Use mechanical loading devices if possible. Relax back to reduce strain and stand up slowly to avoid head rush. See below under Necropsy and sample collection.

CONTINUED ON NEXT PAGE

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JOB HAZARD ASSESSMENT (Continuation Sheet)

ACTIVITY: Ungulate necropsy and sampling

DATE PREPARED: 11/12/2013

BASIC JOB STEPS	HAZARDS	SAFE JOB PROCEDURE
Necropsy and sample collection	Disease transmission to other persons or pathogen transport to other sites from potentially biohazardous fluids, tissues or feces.	Wear appropriate PPE including gloves, splash-resistant suits, rubber boots and/or disposable boot covers. Assess risk to evaluate need for additional protection from safety glasses or a respirator. Respirator use must comply with FWS Respirator policy. Do not touch your face, mouth, eyes or any exposed skin prior to decontamination procedures. Do not eat, drink, smoke, chew gum or tobacco, or handle personal electronics devices prior to decontamination procedures. All PPE must be disinfected or properly sealed for disposal before leaving the site, as outlined in R8-Wildlife Health Donning and Doffing PPE Protocol. Except for field necropsy sites, all surfaces and equipment must be disinfected after necropsy and sample collection. Sample should be double-bagged in a 2nd clean bag, or the outside of the primary sample bag should be disinfected before transport off site.
	Formalin (Formaldehyde) exposure.	Only trained staff should handle formalin. Appropriate PPE must be worn. Formalin containers must be clearly labeled and should be opened only for appropriate sample deposit. Ensure samples are placed into container without splash or spills.
	Cuts from fragmented bone.	Wear double gloves. Use caution working around ribs are especially sharp after cutting.
	Slips, falls, bending injuries	Avoid slippery surfaces and use caution.

Appendix E: Packaging and Shipping Carcasses

Last updated by FWS Wildlife Health Office, 2014

Goal: To collect and ship wildlife carcasses, carcass parts, or samples from animals to veterinary diagnostic laboratories or USFWS Wildlife Health Office (WH) in compliance with federal shipping regulations for commercial carriers, and ensuring well preserved specimens.

Previous Training Required: Donning and Doffing PPE

You will need:

- PPE such as gloves, tyvek suits, rubber boots and goggles, as appropriate. If you are unsure of appropriate PPE, call WH for guidance
- Appropriate submission forms as required by WH or receiving laboratory.
- Shipping container: hard sided cooler or certified crush-resistant insulated shipping box
- Heavy plastic bag to line shipping container
- Additional plastic bags to enclose carcasses/samples
- Tyvek tags to label carcasses and bags
- Zip ties, wire or string to fasten tags to carcasses and bags
- Waterproof marker for labeling
- Duct tape or strapping tape to seal bags and shipping containers
- Coolant, such as frozen blue ice packs. Wet ice should only be used in well-sealed containers (e.g. frozen water bottles). DO NOT use dry ice unless specifically instructed by lab (subject to additional labeling and shipper's declaration requirements)
- Absorbent material to prevent leakage (e.g. cotton batting, paper towels, absorbent packs, etc.) Shredded office paper may be used for cushioning only, not as absorbent material.
- Appropriate shipping designation labels are included on last page of this document for your use, or you can order pre-printed stickers:
    - Blood and tissue samples from apparently healthy animals (hunter-killed, live captured) are EXEMPT ANIMAL SPECIMENS
    - Carcasses of animals that died of unknown causes are classified as BIOLOGICAL SUBSTANCE, CATEGORY B and UN 3373
    - Blood and tissue samples from dead or sick animals are classified as a BIOLOGICAL SUBSTANCE, CATEGORY B and UN 3373.

Procedures:

1. Collect the freshest carcasses available. Decomposed or scavenged carcasses are of limited diagnostic value. If collecting samples during capture or handling activities, conducting necropsies or if carcasses are too large to ship whole, contact WH for guidance on sample collection and handling.
2. Contact the Wildlife Health Office or the diagnostic laboratory to get shipping approval and discuss shipping arrangements. Typically, ship specimens by next day air (overnight) service, Monday through Wednesday, to guarantee arrival before the weekend. If specimens are fresh and need to be shipped on Thursday or Friday, call to see if special arrangements can be made. **Unexpected packages may not be opened or may be refused!**
3. Email or fax appropriate history and submission forms or datasheets, and tracking numbers of all packages to WH, and to the lab if submitting samples directly.

4. When collecting small carcasses, immediately attach a leg tag to each animal with the following information in pencil or waterproof ink (Figure 1):
    - Date collected
    - Species
    - Location (GPS coordinates or specific location information)
    - Found dead or euthanized
    - Collector (name/address/phone)
    - Animal ID number such as a leg band, ear tag, or other identification number

5. Individually bag each carcass or sample to prevent cross-contamination (Figure 2). Seal the bag: twist or fold-over over non-zipper bags and/or knot tightly, or press zipper bags closed. Then cover bag closures with strapping or duct tape after sealing to ensure bags don't open during pressure changes associated with air transport (Figure 3).
6. Place the individually bagged carcasses inside a 2nd bag. More than one individually bagged animal can be placed inside the 2nd bag. Seal the second bag as described in step 5.
7. Tag the outside of the 2nd bag with a list of contents, including number and species of carcasses, date collected, location and name of collector (Figure 4.)
8. Be sure that the shipping container (certified crush-resistant insulated shipping box or hard- sided cooler) is in good condition. If using a cooler, close the drain plug and tape over inside. Line this container with a 3rd heavy (1 mil minimum) plastic bag.
9. Place enough absorbent material, such as paper towels, cotton batting or balls, or super absorbent pads or packets for water, in the bottom of the 3rd bag lining the container (Figure5). You may add additional cushioning such as shredded paper to reduce shifting of contents.
10. Pack the second sealed bag, containing individually-bagged animal(s), into the 3rd liner bag with enough cold ice packs or similar coolant to keep carcasses cold if there is a delay in delivery (Figure 6).
11. Seal the 3rd liner bag as described in step 5 above.
12. Place the appropriate forms or datasheets (and return courier air bill if you want the container returned to you) in a plastic zipper bag and tape to the inside lid of the container.
13. Tape the container shut with packing or duct tape. If using a hard-sided cooler, tape around the lid and at each end using a continuous wrap around the cooler.
14. Attach the appropriate sample designation label (Exempt Animal Specimens or UN3373 Biological Substances Category B), and the shipping document (courier air bill) to the outside of the container.

<u>QUICK CHECKLIST:</u>

__Labeled sample in primary watertight container or bag
__Double-bag in secondary watertight bag; OK to put multiple primary bagged samples in secondary bag
__Tag secondary bag with contents
__Line shipping container with heavy plastic bag
__Add plenty of absorbent material and coolant inside liner
__Add double-bagged samples inside liner
__Seal liner
__Add submission forms/datasheets
__Tape container shut
__Attach labels (Exempt Animal Specimens UN3373 Biological Substance Category B) and courier air bill.

Figure 1. Individually tagged carcass.

Figure 2. Individually tagged and bagged carcass.

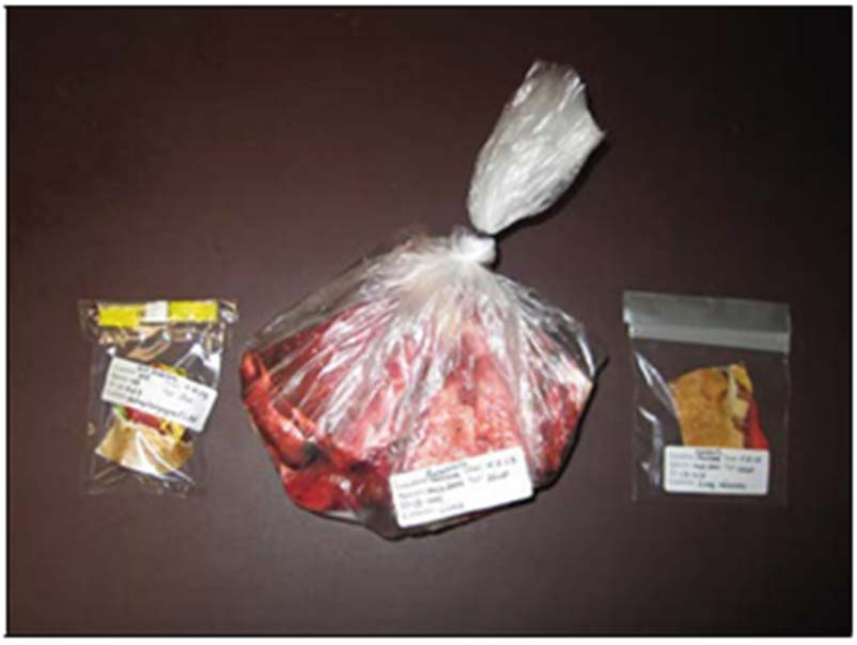


Figure 3. Examples of properly sealed primary sample bags of contents using tape, twists, knots and zip ties.

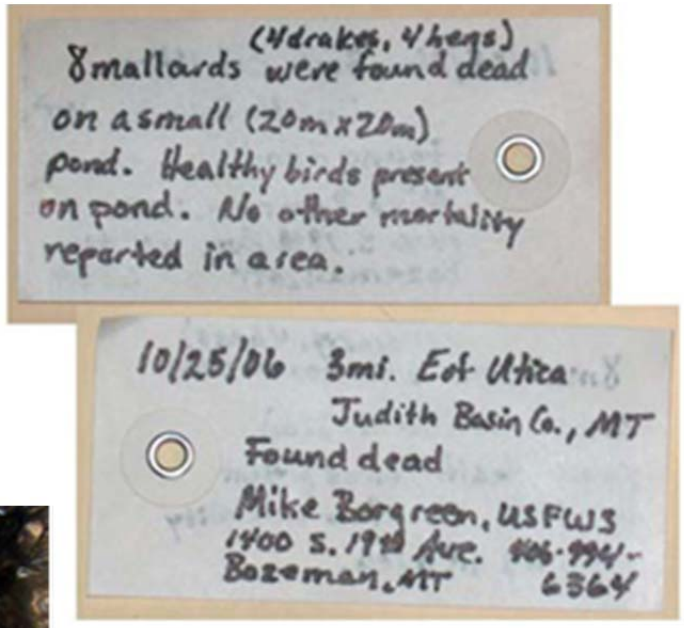


Figure 4. Front and back of tag - with list of contents and other essential information - attached to 2nd bag.

Figure 5. Absorbent paper towels inside the heavy plastic bag lining the shipping container.

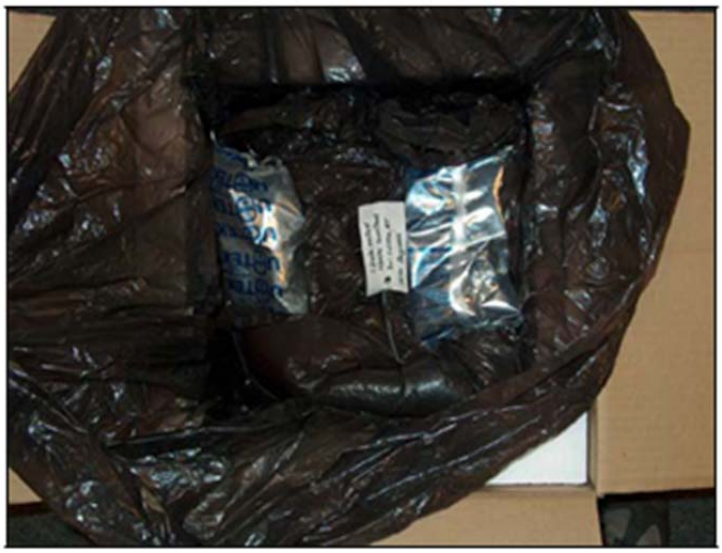
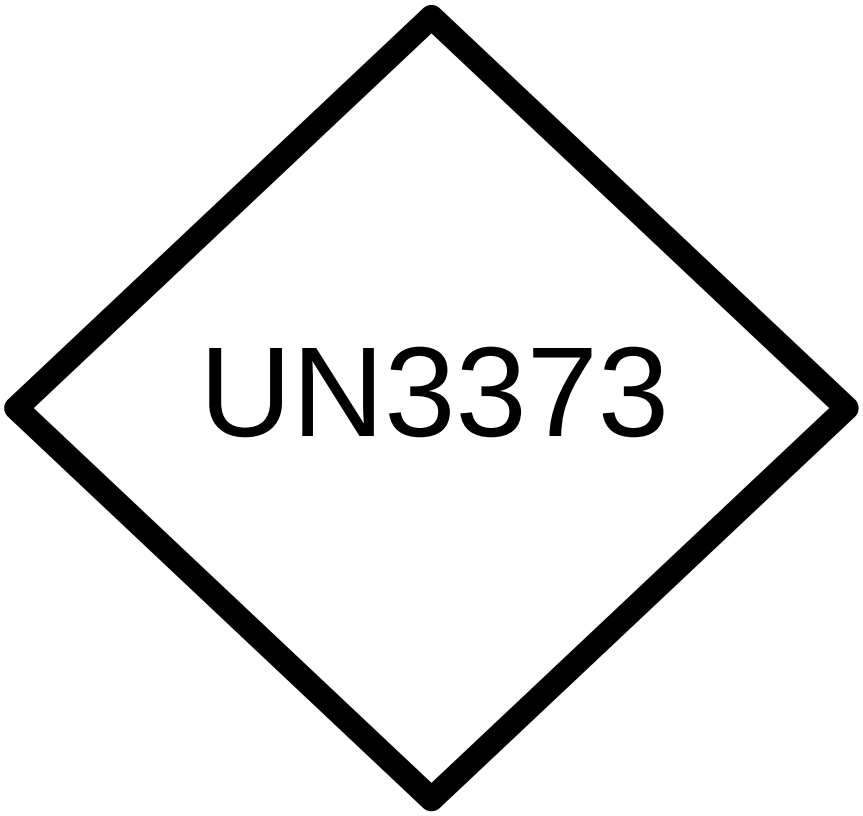


Figure 6. Individually bagged animals, contained within the 2nd sealed and tagged bag, placed inside 3rd heavy plastic bag lining container with absorbent material and cold packs.

Appendix F: Shipping Label – Exempt Animal Specimen



BIOLOGICAL SUBSTANCES, CATEGORY B

EXEMPT ANIMAL SPECIMENS

Appendix G: Reporting Wildlife Mortality Events to USGS National Wildlife Health Center

If your agency is involved in a wildlife mortality event that is not reported, please contact the NWHC Field Epidemiology Team before sending any shipments: 608-270-2480, NWHC-epi@usgs.gov

Instructions for Collection and Shipment of Specimens
Download and fill out the Wildlife Mortality Reporting and Diagnostic Services Request Form. Save the filled form as a PDF and email it to NWHC-epi@usgs.gov. It is required for each shipment.

Follow the carcass collection and shipping instructions below (also available in PDF format, or video) and review the Diagnostic Case Submission Guidelines (PDF).

The following instructions should be used for collecting and shipping wildlife carcasses, carcass parts, and samples extracted from animals to the USGS National Wildlife Health Center (NWHC) in Madison, Wisconsin, to ensure adequate and well preserved specimens.

- Complete the "Wildlife Mortality Reporting and Diagnostic Services Request Form" and email/fax it to the NWHC epidemiology team to initiate discussion of the case you would like to submit and get shipping approval. **Packages will not be opened if form does not arrive first**.
- For most cases, NWHC prefers to receive fresh chilled specimens if they can be sent within 24-36 hours of collection or death, as freezing/thawing impedes isolation of some pathogens and causes tissue damage. As a general guideline: if you cannot call or ship within 24-36 hours, immediately freeze the animal(s) and keep frozen during shipment.
- Specimens should be shipped by 1-day (overnight) service, Monday through Wednesday, to guarantee arrival at NWHC before the weekend. If specimens are fresh and need to be shipped on Thursday or Friday, prior arrangements must be made. Email/fax shipment tracking number to NWHC.
- Collect animals under the assumption that an infectious disease or toxin is involved and other animals may be at risk. Protect yourself as some diseases and toxins are hazardous to humans. Use rubber, vinyl, or nitrile gloves when picking up sick or dead animals. If you do not have gloves, invert a plastic bag over your hand and use it as a glove to scoop specimen directly in to the bag.
- More than one disease may be affecting the population simultaneously. When possible, collect both sick and dead animals. Note behavior of sick animals before euthanizing. Record on carcass tags and "Wildlife Mortality Reporting and Diagnostic Services Request Form" which animals were euthanized.
- Collect specimens that are representative of all species and geographic areas involved.
- **Suitable specimens should have intact body, eyes, and body cavity; have no maggots; and have no foul odors.** Decomposed or scavenged carcasses are usually of limited diagnostic value. If you plan to collect animals in the field, take along a cooler containing ice to immediately chill carcasses.
- Contact NWHC for assistance when collecting specimens or samples from animals that are too large to ship. Other specimens might also require unique collection and shipping instructions (e.g., amphibians, bats, snakes); contact NWHC.

- Immediately attach a leg tag to each animal with the following information in pencil or waterproof ink:
    - Date collected
    - Species
    - Location (specific site, town, county, state)
    - Found dead or euthanized
    - Collector (name/address/phone)
    - Your reference #
- Place each animal in a separate plastic bag, close, and seal the bag. Cover zipper bag closure with strapping or duct tape after sealing zipper. Twist non-zipper bags closed, fold over on itself, and secure with package strapping or duct tape.
- Place 1st bag inside a 2nd bag, close and seal. More than one individually bagged animal can be placed in the 2nd bag. This prevents cross-contamination of individual specimens and leaking shipping containers.
- Tag the outside of 2nd bag and list number of animals and type, date collected, location, and name of collector. **Reminder order: TAG, BAG, BAG, TAG**.
- Use a hard-sided cooler in good condition for shipment. Close the drain plug of cooler and tape over inside. Line cooler with a thick bag (1 mil thickness, 3rd layer of bags).
- Place absorbent material in the 3rd plastic bag to absorb any liquids that might leak during shipping. **Example bags and absorbent materials are listed at the end of this guidance**.
- Pack individually bagged animal(s) contained within the 2nd sealed bag into the 3rd bag with enough FROZEN BLUE ICE PACKS or similar coolant to keep carcasses cold. Use enough coolant to keep samples chilled if there is a delay in delivery.
    - Blue ice (unfrozen) can be obtained at hardware, sporting goods, or grocery stores.
    - Wet ice can be used if frozen in a sealed plastic container (i.e., soda or water bottle).
    - **Do not ship using dry ice**.
- Seal the 3rd bag with methods described for 1st bag.
- Place the completed “Wildlife Mortality Reporting and Diagnostic Services Request Form” and return shipping label (if you want the cooler returned) in a Ziploc bag and tape to the inside lid of the cooler. NWHC cannot pay for shipping.
- Tape the cooler shut around the lid and at each end using a continuous wrap around the cooler.
- Attach the shipping document (air bill) with the information below to the outside of each cooler in a resealable pouch. Also attach “to” and “from” addresses and phone numbers directly to the cooler.
    - Address:
      Necropsy Loading Dock
      National Wildlife Health Center
      6006 Schroeder Road
      Madison, WI 53711
      608-270-2480
    - From Address/Emergency Contact:
      Your Agency’s Address
      Your Phone Number
    - Supplementary Labels:
      Keep Cold

- Mark the cooler with the appropriate information: (Download PDF version for printable marking labels)
    - Carcasses of animals that died of unknown causes:
      UN 3373 and **BIOLOGICAL SUBSTANCE, CATEGORY B.**
    - Blood and tissue samples from dead or sick animals:
      UN 3373 and **BIOLOGICAL SUBSTANCE, CATEGORY B**.
    - Blood and tissue samples from apparently healthy animals (hunter-killed, live captured):
      EXEMPT ANIMAL SPECIMENS.
- Note the shipment tracking number in case packages are delayed.
- These instructions cover shipping regulations for commercial carriers.

Example bags and absorbent materials available at large supermarkets (list not all inclusive):
Inner and second layer bags:

- Hefty Big Bag – 22 gal
- Ziplock Freezer – 1 gal
- Hefty Freezer – 1 gal
- Ziplock Big Bag – 20 gal
- Hefty Jumbo – 2.5 gal
- Glad Freezer – 1 qt, 2 qt, 1 gal

Third layer for cooler liner:

- Hefty Cinch Sack (1.1 mil) – 33 and 39 gal
- Glad Force Flex (1.05 mil) – 25 gal
- Hefty Lawn and Leaf (1.1 mil) – 33 and 39 gal
- Hefty Ultra Flex (1.3 mil) – 30 gal
- House brand large trash (1.1 mil) – 30 gal
- House Lawn - Leaf (1.2 mil) – 39 gal

Absorbent material:

- Super absorbent packet or pads for water
- Cellulose wadding
- Paper towels
- Cotton batting or cotton balls
- Do not use packing peanuts or shredded paper.

Appendix H: USGS Wildlife Mortality Reporting Form

USGS science for a changing world

WILDLIFE MORTALITY REPORTING AND DIAGNOSTIC SERVICES REQUEST FORM

United States Geological Survey
National Wildlife Health Center
6006 Schroeder Road
Madison, WI 53711
Phone: (608) 270-2480
Fax: (608) 270-2415
www.nwhc.usgs.gov

INSTRUCTIONS (to be completed by federal/tribal/state wildlife resource agencies only; members of the public should contact their state natural resources agency):

TO REQUEST DIAGNOSTIC EVALUATION OF WILDLIFE SPECIMENS:

1. Complete sections 1 and 2, then save the filled form as a PDF
2. Email completed form to NWHC field epidemiologists (NWHC-epi@usgs.gov) prior to shipping carcasses
   - Also email photos, videos, maps, reports, news articles, etc., that provide relevant information
3. Wait for shipping approval from epidemiologist (typically within 24 hours)
4. Review shipping instructions at www.nwhc.usgs.gov/services/ -abbreviated instructions are:
   - Ship with ice packs (no wet ice) in hard sided cooler or insulated shipping container
   - Attach "UN3373" and "BIOLOGICAL SUBSTANCE, CATEGORY B" labels to cooler if necessary
   - Put "ATTN: NECROPSY LOADING DOCK" in shipping address
   - Ship using overnight courier
   - Do not ship on Fridays or prior to federal holidays
5. Email tracking number to NWHC when package has shipped
6. If wildlife mortality event is ongoing, please monitor and contact NWHC epidemiologist with updates and/or for disease management and personal protective equipment recommendations. When event is over, provide an end date, final numbers and species affected, and diagnostics performed by other laboratories.

TO REPORT WILDLIFE MORTALITY OR MORBIDITY WITHOUT SUBMITTING SPECIMENS:
Complete section 1, save the filled form as a PDF, then follow step 2 and step 6 above

SECTION 1: WILDLIFE MORTALITY REPORTING

Submitter/Reporter Name *: _____ **Today's Date:** _____
Affiliation: _____
Address: _____
City/State/Zip: _____ _____ _____
Email: _____
Phone: _____

Collector/Field Contact Name (if applicable): _____
Email: _____
Phone: _____

***The person listed as specimen submitter will receive "Findings to Date" reports by email throughout the diagnostic investigation.**

Event Onset Date: _____ **Event End Date:** _____
State/Territory of Die-off: _____
County(ies) of Die-off: _____
Nearest Town or Township: _____
Specific Die-off Location(s): _____
Lat/Long: _____ **GPS Datum** (check one) ○ **WGS84** ○ **NAD83** ○ **unk** ○ **other** (please specify) _____

List Species Affected:

Species	# Known Dead	# Estimated Dead*	# Known Sick	# Estimated Sick*	Estimated Population at Risk	Biased Age/Sex Distribution**

*Consider removal by scavengers, density of vegetation, etc.
**Any selective mortality related to age and/or sex? If yes, describe.

CONTINUE ON SECOND PAGE. Please use additional sheets as necessary.

NWHC Wildlife Mortality Reporting and Diagnostic Services Request Form continued…

Die-off Area Description (land use, habitat types, other species present, or other additional information that may be of value such as past occurrences of disease in area, public health warnings, hunting and agriculture activities, etc.):

Environmental factors (storms, precipitation, temperature changes, migration, or other that may contribute to stress):

Clinical Signs (any unusual behavior or physical appearance):

Diagnosis (if unknown, put "Open"):

Basis of Diagnosis (check one):

- ○ **Not Applicable/Open**
- ○ **Location, history, physical evidence, and/or clinical signs only**
- ○ **Necropsy conducted by wildlife health personnel in the field**
- ○ **Necropsy and/or tests performed at a diagnostic laboratory**

Diagnostic laboratory that made diagnosis:

SECTION 2: DIAGNOSTIC SERVICES REQUEST

Priority: ○ **High** (please explain):
(domestic animal/zoonotic concern, high profile/public involvement, other extenuating circumstances)

- ○ **Medium** (mortality event is ongoing and timely results are needed for disease management)
- ○ **Low** (mortality event is over but would like a cause of death determination)

Note: Laboratory prioritization is based on priority of all incoming cases. Contact NWHC (NWHC-epi@usgs.gov) if your priority level changes.

List specimens to submit to NWHC:

Species	Date Collected	Location Collected	Status*	Specimen Type**	Method of Preservation***	Method of Euthanasia**** (if applicable)	# of Specimens

*Status – found dead, died in hand, euthanized, or live
**Specimen Type – carcass, tissues, swab, blood, parasite, other (please specify)
***Method of Preservation – chilled, frozen, or fixed
****Method of Euthanasia – cervical dislocation, gunshot, CO_2, other (please specify).

Comments and Special Instructions/Requests:

Thank you! Remember, also email photos, videos, maps, reports, news articles, etc., that provide relevant information.

Since 1975, NWHC has routinely summarized and disseminated basic information on wildlife mortality events to provide situational awareness of wildlife health on a national scale. For an example of the types of information available to our partners and the public please visit www.nwhc.usgs.gov/mortality_events/ongoing.jsp.

Please use additional sheets as necessary.

Appendix I: Personnel

USFWS REGION 7 (ALASKA) Avian Mortality Event Incident Management Team

PRIMARY	ALTERNATE
Incident Commander **Karen Clark,** Deputy Regional Director Office: 907-786-3542, 907-786-3493 Cell: Karen_Clark@fws.gov	**Eric J. Taylor,** Chief, Migratory Bird Management Office: 907-786-3446 Cell: 907-903-7210 Eric_Taylor@fws.gov
Deputy Incident Commander **Eric J. Taylor,** Chief, Migratory Bird Management Office: 907-786-3446 Cell: 907-903-7210 Eric_Taylor@fws.gov	**Angela Matz,** Environmental Contaminants Specialist Office: 907-456-0442 Cell: 907-750-8527 cell Angela_Matz@fws.gov
Public Information Officer **Sara Boario,** Assistant RD, External Affairs Office: 907-786-3431 Cell: Sara_Boario@fws.gov	**Andrea Medeiros,** Public Affairs Specialist Office: 907-786-3695 Cell: 907-891-3505 Andrea_Medeiros@fws.gov
Safety Officer **Mark Ilg,** Safety and Occup. Health Manager Office: 907-786-3588 Cell: 907-230-2925 Mark_Ilg@fws.gov	
Planning Chief **Elizabeth Labunski,** MBM Seabird Biologist Office: 907-786-3865 Elizabeth_Labunski@fws.gov	
Operations Chief **Mitch Ellis,** Chief of Refuges Office: 907-786-3667 Cell: 907-947-4416 Mitch_Ellis@fws.gov	
Logistics Chief **Lori Verbrugge,** Spill Response Coordinator Office: 907-786-3483 Cell: 907-242-6893 Lori_Verbrugge@fws.gov	**Beth Pattinson,** MBM Permits Specialist Office: 907-786-3693 Beth_Pattinson@fws.gov
Financial Chief **Cheri Frazell,** Budget and Finance Officer Office: 907-786-3917 Cell: 907-887-3356 Cheri_Frazell@fws.gov	
Office of Wildlife Health **Samantha Gibbs,** Wildlife Veterinarian Office: 571-216-5776 Samantha_Gibbs@fws.gov	
Alaska Native Liaison **Crystal Leonetti,** Alaska Native Affairs Specialist Office: 907-786-3868 Crystal_Leonetti@fws.gov	**Neesha Stellrecht**, F&W Biologist Office: 907-456-0297 Cell: 907-347-8906 Neesha_Stellrecht@fws.gov

USFWS Region 7 Avian Mortality First Responders

Name	Job Title	Station	Location	Email
Uinniq Ahgeak	Fish and Wildlife Biologist	Barrow Field Office	Barrow	ernestine_ahgeak@fws.gov
Nate Berg	Wildlife Biologist	Tetlin NWR	Tok	nathan_berg@fws.gov
Tim Bowman	Wildlife Biologist	Migratory Birds	Anchorage	tim_bowman@fws.gov
Robin Corcoran	Wildlife Biologist	Kodiak NWR	Kodiak	robin_corcoran@fws.gov
Kristin DuBour	Wildlife Biologist	Tetlin NWR	Tok	kristin_dubour@fws.gov
Sheila Dufford	Fish and Wildlife Biologist	Yukon Flats NWR	Fairbanks	sheila_dufford@fws.gov
Todd Eskelin	Fish and Wildlife Biologist	Kenai NWR	Soldotna	todd_eskelin@fws.gov
Nikki Guldager	Wildlife Biologist/Pilot	Yukon Flats NWR	Fairbanks	nikki_guldager@fws.gov
Chris Harwood	Avian Wildlife Biologist	Kanuti NWR	Fairbanks	christopher_harwood@fws.gov
Jeremy Havener	Subsistence Coordinator	Koyukuk/Nowitna NWR	Galena	jeremy_havener@fws.gov
Kim Klein	Fish and Wildlife Biologist	Marine Mammals Management	Anchorage	kimberly_klein@fws.gov
Elizabeth Labunski	Wildlife Biologist	Migratory Bird Management	Anchorage	elizabeth_labunski@fws.gov
Rick Lanctot	Wildlife Biologist/Shorebird Coordinator	Migratory Bird Management	Anchorage	richard_lanctot@fws.gov
Christopher Latty	Wildlife Biologist	Arctic NWR	Fairbanks	christopher_latty@fws.gov
Tonya Lee	Refuge Information Technician	Kodiak NWR	Kodiak	tonya_lee@fws.gov
Steve Lewis	Wildlife Biologist/Raptor Coordinator	Juneau Field Office	Juneau	steve_b_lewis@fws.gov

Name	Job Title	Station	Location	Email
Dennis Marks	Wildlife Biologist	Migratory Bird Management	Anchorage	dennis_marks@fws.gov
Angela Matz	Fish and Wildlife Biologist	Fairbanks Field Office	Fairbanks	angela_matz@fws.gov
Kenton Moos	Refuge Manager	Koyukuk/Nowitna NWR	Galena	kenton_moos@fws.gov
Tina Moran	Assistant Refuge Deputy Manager	Kanuti NWR	Fairbanks	tina_moran@fws.gov
Spencer Nelsen	Wildlife Biologist	USDA Wildlife Services	Palmer	spencer.r.nelsen@aphis.usda.gov
Beth Pattinson	Permit Specialist	Migratory Bird Management	Anchorage	beth_pattinson@fws.gov
David Payer	Coordinator	Arctic LCC	Fairbanks	david_payer@fws.gov
Mike Petrula	Wildlife Biologist	ADF&G Waterfowl Program	Anchorage	mike.petrula@alaska.gov
Susan Savage	Wildlife Biologist	Alaska Penin/Becharof NWR	King Salmon	susan_savage@fws.gov
Jason Schamber	Wildlife Biologist	ADF&G Waterfowl Program	Anchorage	jason.schamber@alaska.gov
Dave Sinnett	Wildlife Disease Biologist	USDA Wildlife Services	Palmer	David.R.Sinnett@aphis.usda.gov
Leslie Slater	Wildlife Biologist	Alaska Maritime NWR	Homer	leslie_slater@fws.gov
Kyle Smith	Wildlife Technician	ADF&G Waterfowl Program	Anchorage	kyle.smith1@alaska.gov
Michael Swaim	Wildlife Biologist	Migratory Bird Management	Anchorage	michael_swaim@fws.gov
Eric Taylor	Chief	Migratory Bird Management	Anchorage	eric_taylor@fws.gov
Shannon Torrence	Fish and Wildlife Biologist	Fairbanks Field Office	Fairbanks	shannon_torrence@fws.gov
Dom Watts	Wildlife Biologist	Alaska Penn./Becharof NWR	King Salmon	dom_watts@fws.gov
Tamara Zeller	Outreach Biologist	Migratory Bird Management	Anchorage	tamara_zeller@fws.gov

USFWS Sick or Dead Bird Hotline: 866-527-3358

Alaska Dept. of Fish and Game Wildlife Veterinarian: 907-328-8354, DFG.DWC.VET@alaska.gov

Alaska Interagency Avian Mortality Event Contacts

Agency	Name	Position	Contact Information
State of Alaska	Bob Gerlach, VMD	Office of the State Veterinarian, Department of Environmental Conservation	Office: 907-375-8214 Cell: 907-351-7848 Bob.Gerlach@alaska.gov
	Kimberlee Beckmen, DVM, Ph.D.	Office of the State Wildlife Veterinarian, Department of Fish and Game	Office: 907-459-7257 Cell: 907-322-2384 Kimberlee.Beckmen@alaska.gov
	Michael Petrula	Wildlife Biologist (Waterfowl), Department of Fish and Game	Office: 907-267-2159 Cell: 907-242-3300 Mike.Petrula@alaska.gov
USGS	Anne Ballman	National Wildlife Health Center	Office: 608-270-2445
	LeAnn White		Office: 608-270-2491
	Barb Bodenstein		Office: 608-270-2447
	Paul Slota		Office: 608-270-2420 Cell: 608-209-7167
National Park Service	Guy Adema	HPAI Field Coordinator	Office: 907-644-3571 Cell: 907-317-2488
	Bud Rice	Management Biologist	Office: 907- 644-3597 Cell:
	Margaret Wild	Wildlife Veterinarian	Office: 970-225-3593 Cell: 970-214-2886
	Kevin Castle		Office: 970-267-2162 Cell: 970-219-0104
USDA-APHIS	David R. Sinnett	Wildlife Diseases	Office: 907-745-0871, Ext. 20 Cell: 907-232-8658
	Rose Lombardi	Veterinary Services	Office: 907-688-1229 Cell: 907-529-7784
	Marc W. Pratt	Wildlife Services	Office: 907-745-0871 Cell: 907-982-8136

USFWS Sick or Dead Bird Hotline: 866-527-3358

Alaska Dept. of Fish and Game Wildlife Veterinarian: 907-328-8354, DFG.DWC.VET@alaska.gov

Alaska Avian Mortality Event Species Technical Experts

Seabirds
Kathy Kuletz, FWS, Anchorage, 786-3453
Elizabeth Labunski, FWS, Anchorage 786-3453
Robb Kaler, FWS Anchorage, 786-3984
Scott Hatch, Institute for Seabird Research and Conservation, Anchorage
Heather Renner, FWS, Homer, 226-4623

Landbirds
Jim Johnson, FWS, Anchorage, 786-3423
Colleen Handel, USGS, Anchorage, 786-7181
Steve Lewis, FWS, Juneau, 780-1163
Ted Swem, FWS, Fairbanks, 456-0441

Shorebirds
Rick Lanctot, FWS, Anchorage, 786-3609
Sarah Saalfeld, FWS, Anchorage, 786-3672
Bob Gill, USGS, Anchorage, 786-7184
Brian McCaffery, FWS, Bethel, 543-1014

Waterfowl
Julian Fischer, FWS, Anchorage, 786-3644
Paul Flint, USGS, Anchorage, 786-7183
Craig Ely, USGS, Anchorage, 786-7182
Chris Dau, FWS, Anchorage, 786-3908
Ed Mallek, FWS, Fairbanks, 456-0341

Loons
Tamara Zeller, FWS, Anchorage, 786-3517
Joel Schmutz, USGS, Anchorage, 786-7186

Contaminants
Angela Matz, FWS, Fairbanks, 456-0442

USFWS Sick or Dead Bird Hotline: 866-527-3358

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Jeff Gross	Tok - Units 12, 20E	883-2971	jeff.gross@alaska.gov	100 Center St., PO Box 355	Tok, AK 99780

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Department of Public Safety, Division of Alaska State Troopers	Megan Peters, Public Information Officer	907-269-5413 megan.peters@alaska.gov
Department of Military and Veterans Affairs, Division of Homeland Security and Emergency Management	Jeremy Zidek, Public Information Officer	907-428-7000 907-441-2337 (cell) jeremy.zidek@alaska.gov
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	Municipal	
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City of Anchorage Office of Emergency Management	Rob Fitch, Exercise & Special Projects Manager	907-343-1404 FitchRA@ci.anchorage.ak.us
Fairbanks North Star Borough, Department of Emergency Operations	Craig Malloy, Emergency Manager	907-459-1214 EmergencyOperations@co.fairanks.ak.us
North Slope Borough, Department of Health and Social Services	Doreen Leavitt, Director	907-852-0366, doreen.leavitt@north-slope.org

USFWS Sick or Dead Bird Hotline: **866-527-3358**

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