

**ARANSAS-WOOD BUFFALO POPULATION
WHOOPING CRANE CONTINGENCY PLAN
2006**



Photo credit: Tiffany Smith-USFWS

1984
2001
Revised July 2006

Prepared by the Whooping Crane Committee (formed in 2005)

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Central Flyway Council

Northwest Territories Alberta Saskatchewan Montana North Dakota Wyoming
South Dakota Nebraska Colorado Kansas Oklahoma New Mexico Texas



www.centralflyway.org

Recommendation No. 5

Pertaining to:

Adopting the 2006 Aransas-Wood Buffalo Population Whooping Crane Contingency Plan.

Recommendation:

The Central Flyway Council (CFC) recommends adopting the 2006 Aransas-Wood Buffalo Population Whooping Crane Contingency Plan. This document is a revision of the 2000-2001 Contingency Plan for Federal-State Cooperative Protection of Whooping Cranes.

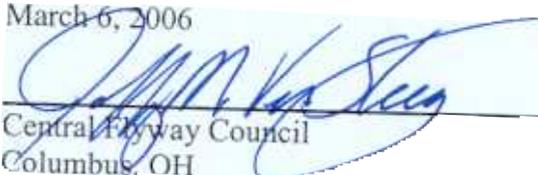
Justification:

The 2000-2001 Whooping Crane Contingency Plan has provided guidance to state and federal agencies in regards to sighting records; responses to sick, injured, and dead whooping cranes; and hazards such as disease, contaminants, and hunting of look-alike species. However, the contingency plan has not been substantially revised since it was written in the mid-1980s. A committee consisting of Tom Stehn, U.S. Fish and Wildlife Service Whooping Crane Coordinator; 6 members of the Central Flyway Webless Migratory Game Bird and Waterfowl technical committees; 2 federal refuge managers; and Martha Tacha, coordinator of the whooping crane Records Center in Grand Island, Nebraska revised the contingency plan. Significant changes include: narrowing the scope to the Aransas-Wood Buffalo Population (AWP) of whooping cranes in the U.S., addition of strategies to better educate migratory bird hunters about the presence of whooping cranes and how to identify them, and more comprehensive information on managing hunting hazard situations. These revisions were made based on experience gained in the last 20 years in regards to what has worked and what has not and in light of the fact that the AWP whooping crane population has more than doubled since the contingency plan was originally written.

Adopted by:

Central Flyway Webless Migratory Game Bird Technical Committee
Central Flyway Waterfowl Technical Committee
Fort Collins, CO

March 6, 2006



Central Flyway Council
Columbus, OH

March 21, 2006

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2006
ARANSAS-WOOD BUFFALO POPULATION
WHOOPING CRANE CONTINGENCY PLAN

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INTRODUCTION

The policy of Congress, declared in the Endangered Species Act (Act), is that all federal departments and agencies shall seek to conserve endangered species and threatened species and shall use their authorities in furtherance of the purposes of the Act. Section 7(a)(2) of the Act directs that each federal agency shall ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of endangered species or threatened species or result in the destruction or adverse modification of critical habitats. This Whooping Crane Contingency Plan (Plan) outlines cooperative Federal-State efforts to protect whooping cranes in the Aransas-Wood Buffalo population (AWBP) in their migration corridor, and during summer and winter wanderings outside of traditional use areas. This plan does not apply to whooping cranes designated as experimental nonessential under the Act found in the eastern U.S. The primary emphasis of this Plan is to list the response options when whooping cranes are observed in hazardous situations due to avian disease outbreaks, environmental contaminants, shooting/hunting activities, or when whooping cranes are found injured, sick, or dead.

The original contingency plan was a product of a Federal-State committee formed in 1984. The committee consisted of co-chairman Jack Herring, former Game Bird Project Leader, New Mexico Game and Fish Department, Santa Fe; and Dr. James C. Lewis, former Whooping Crane Coordinator, U.S. Fish and Wildlife Service (USFWS), Albuquerque, New Mexico; and as committee members, Mike Johnson, Supervisor, Migratory Game Bird Management, North Dakota Game and Fish Department, Bismarck; Jeff Haskins, Migratory Bird Coordinator, USFWS, Region 2, Albuquerque, New Mexico; Harvey Miller, former Central Flyway Representative, USFWS, and Wayne Wathan, former Endangered Species Staff Biologist, Region 6, Denver, Colorado. Updates of the plan were made periodically by the USFWS's Whooping Crane Coordinator. Starting in fall 2005, a new committee made up of federal and state biologists worked to revise the plan into its current form that was approved by the Central Flyway Council. The committee gratefully acknowledges the assistance of many other individuals.

OBJECTIVES

Guidelines presented herein are designed to achieve the following objectives:

1. To designate the appropriate response options and reporting requirements whenever whooping cranes are confirmed as sick, injured, or dead, or when they are healthy but in a situation where they face hazards.
2. To inform and educate hunters to the occurrence of whooping cranes in areas open to sandhill crane and waterfowl hunting so as to minimize accidental shooting incidents.
3. To reduce the likelihood of illegal shooting of whooping cranes by poachers or vandals.
4. To reduce whooping crane use of sites deemed to be a disease or pollutant hazard.
5. To increase the opportunity to recover and rehabilitate wild whooping cranes found injured or sick and to help identify causes of death of whooping cranes.
6. To gain sighting information on presence of whooping cranes outside of traditional summer and winter areas.

PARTICIPANTS

This Plan is intended for guidance in those areas where AWBP whooping cranes occur in the wild excluding their traditional summer and winter ranges. Within the Fish and Wildlife Service, Regions 2 and 6 are involved. The AWBP, which winters on the central Gulf Coast of Texas including Aransas National Wildlife Refuge, and nests in Wood Buffalo National Park and vicinity, Canada, also migrates through Alberta, Saskatchewan, northeastern Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and Texas. A few whooping cranes in migration are occasionally in eastern Colorado. Under the Memorandum of Understanding on Conservation of the Whooping Crane, and various treaties, Canada and the United States share responsibility for conservation of whooping cranes. The above-mentioned states and regions of the USFWS are primarily responsible for initiating Plan actions. Other non-government participants may include numerous conservation groups, hunters and the public at large. Actions by provinces and the Canadian Wildlife Service (CWS) are described in a separate Contingency Plan for Canada.

ORGANIZATIONAL STRUCTURE

This Plan uses the existing organizational structure and lines of authority of the participating states, and USFWS regions. The Plan outlines a functional pattern for responding to the presence of whooping cranes in a variety of circumstances. One state employee and one federal employee, and alternates, have been appointed as the Key Contact individuals within each state (Appendix A, {24}). These federal and state individuals will work as a team within each state to inform others within their agencies, other government agencies, and other organizations as circumstances require.

PUBLIC EDUCATION AND OUTREACH

General Public

The following education and outreach activities are designed to increase the general public's ability to identify whooping cranes and to encourage the reporting of whooping cranes during migration. All Plan participants are encouraged to carry out these recommended activities.

1. Distribute media releases suitable for television, radio, magazines, newspapers and the internet which can include birding and hunting listserves and websites. These can include short public service announcements that show footage of whooping cranes and their sounds. The most appropriate timing for media releases is prior to the anticipated whooping crane spring and fall migration dates through an area.
2. The whooping crane coordinators and/or compiler of the whooping crane migration database should provide a draft news release to federal and state key contact persons each year in September. These news releases should stimulate public interest in the status of whooping cranes, describe whooping cranes and the difference between look-alike species, and encourage the public to report credible sightings to the nearest federal or state wildlife conservation agency office. Organizations should inform staff of the importance of immediately forwarding credible sightings to Key Contacts.
3. Publicize the availability of email addresses and/or any 1-800 toll free telephone reporting programs or other point of contact telephone numbers to encourage and facilitate the public's reporting of whooping crane observations to Key Contact personnel.

Anticipated Whooping Crane Migration Dates for Core 50% of Sightings*
(Peak by Median Date of Occurrence Shown in Parenthesis)

<u>States</u>	<u>Spring Dates</u>	<u>Fall Dates</u>
Montana	April 26 - May 6 (April 26)	Oct. 15 - Oct. 30 (Oct. 22)
N. Dakota	April 19 - May 7 (April 24)	Oct. 9 - Oct. 26 (Oct. 20)
South Dakota	April 17 - May 1 (April 21)	Oct. 16-Oct. 31 (Oct. 26)
Nebraska	April 3 - 18 (April 11)	Oct. 24 – Nov. 7 (Oct. 31)
Kansas	April 9 - 18 (April 14)	Oct. 20 – Oct. 30 (Oct. 30)
Oklahoma	April 2 - 9 (April 6)	Oct. 23 – Nov. 4 (Oct. 29)
Texas	April 7 - 11 (April 9)	Oct. 29 – Dec. 14 (Nov. 16)

As is true of most biological events, averages can be misleading and migration in some recent years has varied from average historical dates.

* Data from J. E. Austin and A. L. Richert. 2001. A comprehensive review of observational and site evaluation data of migrant whooping cranes in the United States, 1943-99. Unpub. Rep.

Migratory Game Bird Hunters

As the whooping crane population has increased, the chance that sandhill crane and waterfowl hunters will encounter a whooping crane has increased. Migratory bird hunters also are a significant source of whooping crane reports. Although the regulated hunting of today does not constitute a threat to the whooping crane population like uncontrolled shooting did 100 years ago, migratory bird hunters have accidentally shot whooping cranes. Below are some suggested educational tools that can minimize the chance of accidental whooping crane shootings.

1. Initiate or expand programs designed to increase the competency of migratory game bird hunters in distinguishing whooping cranes from other similar appearing migratory game bird species, e.g., sandhill cranes, snow geese and tundra swans, and other look-alike species, e.g. white pelicans and wood storks. These efforts should diminish the likelihood that sportsmen might misidentify and shoot a whooping crane. In 2005, Texas created a DVD entitled “Be

Sure Before You Shoot". In 2005, Kansas developed an on-line test for sandhill crane hunters posted on the web at:

http://www.kdwp.state.ks.us/hunting/migratory_birds/sandhill_crane/online_test_for_sandhill_crane_hunters_and_other_information

This test informs crane hunters about whooping cranes and tests their ability to distinguish whooping cranes from sandhill cranes, snow geese and other migratory game birds. This test will become mandatory in 2006 for sandhill crane hunters in Kansas.

2. Consider distribution of media releases regarding the occurrence of whooping cranes in a particular province or state prior to opening of waterfowl and sandhill crane hunting seasons.
3. Distribute and post where appropriate WARNING/REWARD posters that illustrates whooping cranes, snow geese and sandhill cranes, notes that whooping cranes are protected; and mentions availability for a reward for information leading to the conviction of anyone shooting, harassing or attempting to take a whooping crane. This serves to notify hunters of the anticipated or recent occurrence of whooping cranes in areas open to hunting of look-alike migratory game bird species.
4. Put information on the appearance of whooping cranes in comparison with look-alike migratory game bird species in state hunting regulation booklets.
5. Distribute to hunters obtaining sandhill crane permits information that describes the traditional time periods and areas where whooping cranes are likely to occur (should be state specific). Describe differences between whooping cranes and migratory game birds that appear similar in flight and outlines penalties for shooting or attempting to take an endangered species. Information could be distributed as printed materials and/or in the form of a link to a web page on a website. As state agencies move towards online license sales and point-of-sale licensing, distribution of brochures becomes more difficult. Sandhill crane hunters should be directed toward a USFWS or state website with information about whooping cranes (<http://www.fws.gov/migratorybirds/issues/SandhillCrane/SandhillCraneHunters.htm>).
6. Continue distribution of the Central Flyway Council publication *Waterfowl Identification in the Central Flyway*, which includes a section about whooping cranes and other similar-appearing species.
7. Distribute WARNING/NOTIFICATION posters to state and federal facilities that regularly have whooping cranes in their region stating a specific area is temporarily closed to hunting because whooping cranes have been using the area. Posters could be used to post private (voluntary by the landowner) and public land temporarily to prohibit hunting if considered necessary to minimize the potential for accidental shootings of whooping cranes.
8. Utilize ongoing state programs, such as Operation game Thief or Report a Poacher, to help make the public aware that it is illegal to shoot whooping cranes.
9. Have available for distribution and/or on-line the pamphlet entitled "Whooping Cranes: The Road to Survival" that has been updated in draft form in 2005. Kansas in 2005 has developed a new brochure.

RECORDS MANAGEMENT CENTER

Since 1975, Region 6 of the USFWS in their Grand Island, Nebraska Endangered Species office has maintained records of whooping cranes sighted during migration between the Texas coast and the Wood Buffalo National Park, Canada. Federal and state Key Contact personnel from each state (Appendix A.10{p.24}) should send a 1-page standardized form (Appendix C) to the Records Center describing the circumstances of each credible whooping crane sighting. Contact Martha Tacha for information (Appendix A.6, {p. 22}, Federal Records Center). In Canada, reports are compiled by the Whooping Crane Coordinator and shared with the Nebraska office.

RESPONSE DETAILS

Precise details of response to every possible situation that might involve a whooping crane in the wild cannot be listed in this document. The purpose of this Contingency Plan is to provide general guidelines for state and federal response, and to list for field personnel the names and phone numbers (Appendix A) of persons with special expertise in dealing with sick, injured, or dead endangered species. Each situation will require that field personnel use good judgment and consult appropriate personnel.

Whooping cranes require cautious decisions about their care because of their rarity and the interest the general public has in their well-being. They also must be handled carefully because the long neck and long legs are fragile, and these birds can seriously injure a person. Field personnel should make every effort to contact other appropriate individuals while deciding about how to handle situations such as capture of an injured whooping crane or a whooping crane in a potentially hazardous situation. The first concern of field personnel should always be the bird's well-being; the second concern should be phone contact with appropriate state and federal personnel. A quick response is sometimes essential for the well-being of the whooping crane in a hazardous situation and it may not always be practical to consult with others before action is taken. However, there will be many other situations where the delay in response required when one has to make phone contacts and involve several other people in the decision-making process will ensure that the best possible action is taken. USFWS and state conservation agency personnel may capture endangered species without a permit when necessary to aid a sick or injured specimen, or to salvage a dead specimen (see Appendix E).

CONTINGENCY PLAN

Sighting Definitions

A confirmed whooping crane sighting is an observation made by a qualified observer (wildlife professional or very experienced person expected to be competent in the identification of whooping cranes. A report of a whooping crane is defined as a probable sighting whenever the observer's physical description of the bird seems accurate, the location and timing of the sighting are reasonable, the number of birds seen is reasonable (more than 10 flying in a flock unlikely, although occasional groups of up to 20 have been on the ground together at stopover sites), behavior of the birds does not eliminate whooping cranes (i.e., swimming in a reservoir, 20 yards away from a busy road, etc.), and there is a good probability that the observer would provide a reliable report. Sometimes an untrained observer can provide such accurate sighting details and description of whooping crane behavior that a sighting can be considered as confirmed. This normally may occur when whooping cranes are present on the ground and not just seen in flight. An unconfirmed sighting is one which meets some but not all of the requirements of a probable sighting. It is important that Key Contact and/or the Records Management Center communicate with the observer to make an informed judgment on how to classify a sighting.

Receiving Reports of Sightings

Whenever a USFWS or state employee receives a report of a whooping crane sighting, he/she records the observer's name, address, and phone number; date, time, and location of sighting; number of birds; description of birds; behavior of the birds; and inquires about the observer's familiarity with whooping cranes and look-alike species. The last three questions are designed to gain some insight about the validity of the sighting report. They should be asked in a manner which does not lead the observer to specific responses, but encourages him/her to report exactly what they observed. The sighting report form (Appendix C) summarizes the information needed. All probable and confirmed reports are sent to the Records Management Center.

Response to Sightings

Unconfirmed: It is unlikely that the sighting accurately portrays whooping cranes. Unconfirmed sightings are the lowest priority for investigation. Some, because of features of the sighting (i.e., large numbers of birds, birds swimming), will not deserve follow up efforts. Unconfirmed sightings that are clearly lacking substantial information need not be recorded. If there is a reasonable chance that the sighting was of whooping cranes, then a report should be filled out and kept on file by the Key Contact in case other reports come in that might substantiate the earlier report.

Probable: Probable sightings should be investigated, unless there are extenuating circumstances, to determine if whooping cranes are involved and if they are sick, injured, or in a hazardous situation. Probable or unconfirmed reports of injured, sick, or dead whooping cranes, or sightings in locations where the cranes may be exposed to unusual hazards, are those that would receive high priority for an immediate effort to confirm the sighting (Fig. 1). Reports of

birds in migratory flight (e.g. cranes high in the sky, soaring flight with tailwinds) may not need to be investigated since the birds have presumably left the area. Reports of birds in flight in the early morning or late afternoon may indicate birds remaining in an area and would merit investigation to try to confirm the sighting.

Confirmed: There are five general groupings of confirmed whooping crane sightings. Each requires a different response. Some hazard situations will require immediate action by field personnel, to ensure the safety of whooping cranes, before supervisors can be notified of the problem. In circumstances that permit and/or require more response time (e.g., recovery of injured or sick bird, etc.) USFWS law enforcement personnel, the U. S. Geological Survey's National Wildlife Health Center (NWHC), the state wildlife agency director or his designee, and the USFWS Regional Director or designee, will be notified and will participate in the decision-making process. Whenever the sighting involves a crane in a hazard situation, or a bird is sick, injured, or dead, field personnel will attempt to notify the Key Contact person for that State who will notify Tom Stehn, Whooping Crane Coordinator, or his alternates (Appendix A.3: Whooping Crane Coordinator). The Coordinator will keep the USFWS Regional offices informed and involved and provide technical advice to field personnel. News releases will be jointly coordinated by the state and the federal Region through their Public Affairs or Information-Education personnel. If the sighting involves an ongoing law enforcement investigation, USFWS policy is that only Law Enforcement personnel are notified and possibly a few other key personnel depending on the situation.

Category 1. Whooping Crane(s) in a Non-hazard Situation -- Whooping cranes are at a site where there are no serious hazards (e.g., disease outbreak, ongoing legal hunting of look-alike species, transmission lines nears birds, etc.) to their well-being. The bird(s) appear healthy and act normal. The sighting is reported to the appropriate state and federal personnel. The site should be revisited later, if practical, to check on the physical condition of the bird(s) and to ascertain that no hazard develops (Fig. 1).

Category 2. Whooping Crane(s) in a Disease Hazard Situation -- A disease hazard is defined as a location where a disease outbreak is underway or a chronic disease problem exists. Avian cholera problems periodically exist in the Rainwater Basin of Nebraska. The Nebraska Game and Parks Commission and the USFWS have an operational contingency plan which describes the actions to be taken if whooping cranes appear in the Rainwater Basin. The USFWS has disease contingency plans for refuges. These existing plans will be followed whenever whooping cranes appear at these sites when a disease outbreak is underway.

For example, if migrating whooping cranes attempt to use habitats where an avian cholera or a botulism outbreak is underway, they should be encouraged to leave the site. While hazing the bird, direct its flight away from power lines and other aerial obstacles. Hazing may be accomplished by personnel on foot, in aircraft, boats, or vehicles. Continue hazing only until the bird(s) leave the hazard area. Report the action to appropriate state/federal personnel. During weekday working hours, federal personnel should notify the **NWHC** at Madison, Wisconsin. **Dr. Josh Dein** is the principal NWHC contact for all matters involving living endangered species.

Secondary contacts are in the order listed in Appendix A.1 (p. 19, NWHC). These individuals are "on-duty" for such emergencies 24 hours per day throughout the year. In consultation with **Dr. Glenn Olsen** at Patuxent Wildlife Research Center or other veterinarians experienced in treating whooping cranes, NWHC staff will provide recommendations for emergency treatment of injured or sick birds or birds exposed to contaminants. See Appendix G for safety precautions when handling injured, sick, or dead whooping cranes. Continue to monitor the hazardous site as reasonable and/or use zon guns to ensure that the cranes do not return.

If other disease hazards exist at a location where whoopers are sighted, the Whooping Crane Coordinator will consult with NWHC personnel to identify the most appropriate response (Fig. 1). USFWS and the state will jointly decide on and carry out a plan of action.

Category 3. Whooping Crane(s) in a Contaminants Hazard Situation -- Examples of possible contaminants hazards are suspected mycotoxins in peanut fields (e.g., Texas and New Mexico where 5,000 sandhill cranes died in 1985), chemical pesticides recently applied to seeds, plants, or animals the cranes might use as food, and oil or chemical spills in aquatic environments used by whooping cranes. If the bird(s) appear sick, field personnel will respond as in Category 5 (page 12). If the bird(s) appear healthy, response options are to haze the birds from the site or to divert, confine, dilute, or remove the contaminant (Fig. 1). If hazing is attempted, direct the bird(s)' movement away from power lines and other obstacles. A quick decision and action by field personnel may be essential for the bird(s)' well-being. This may be a situation where field personnel do not have time to involve their supervisors in the initial decision-making process. Report the action to appropriate state and federal personnel (including NWHC and the Regional contaminants specialist), listed in Appendix A.12,(p. 19), Contaminants Specialists. NWHC and contaminants personnel will coordinate their responses with one another. Continue to monitor the hazardous site as long as necessary to ensure the cranes do not return if they have been hazed from the site. If it is possible to follow or to relocate cranes which have been hazed from a contaminants site, continue to observe them for several days to confirm that they are not affected by the contaminant.

Category 4. Whooping Crane(s) in a Hunting Hazard Situation -- Hunting hazards could occur when whooping cranes are present when legal hunting seasons are in progress for a species that looks similar to whooping cranes (i.e. snow geese, sandhill cranes, tundra swans). A hazard could exist if the whooping cranes are using an area where hunters of similar-appearing species could mistake whooping cranes for legal game. Each situation will require that field personnel evaluate the associated circumstances and use their best judgment to select a response that is most appropriate to the situation.(Fig. 1). Personnel should maintain open lines of communication and notify the appropriate state and federal personnel so that a process of joint consultation can be used to select and implement an appropriate plan of action. Normally, key contacts within the state play a key role in decision-making.

Several options exist for minimizing the potential for an accidental shooting of a whooping crane during an open hunting season involving a look-alike species. Suggested options to use, ranked in order from response to a minimal hazard to an extreme hazard, are as follows;

- (1) personal contact with people present in the vicinity. Often a reasonable plan of action is notification of the local state or federal law enforcement person who can make hunter contacts in the area the whooping crane is using. Sometimes warning signs can be posted at entry points to a hunt area.
- (2) news releases, often at the local level;
- (3) land or road access control;
- (4) working with private landowners who may agree to voluntarily prohibit hunting until the whooper leaves (or the hunting season is over);
- (5) informal spot closures;
- (6) daytime monitoring of the whooping crane shared by USFWS and state personnel;
- (7) hazing the bird away from the hazard;
- (8) formal closure of an area of a state by USFWS.

If whooping cranes are expected to have only minimal contact with hunting activity, then the situation could normally be managed through actions 1 and 2. Conscientious hunters aware of the presence of whooping cranes in an area should not pose a threat to them. Periodic monitoring normally provides a sufficient level of oversight of hunting activities that may potentially pose a risk to whooping cranes. News releases should usually just describe a general area where the crane(s) was sighted, and should use caution to avoid revealing exact locations. In situations involving numerous whooping cranes or heavy or concentrated hunting activity, or other extenuating circumstances that may contribute to an accidental shooting of a whooping crane, actions 3 through 5 may be recommended. Actions 6 and 7 are rarely employed and action 8 has never been used.

Actions 3, 4 and 5 all result in a type of spot closure limiting exposure of the whooping crane to accidental shooting. Option 4 can be done simply by the landowner agreeing not to let any hunters on his property until the whooping crane has departed. Option 5 involves posting an area of either private or public lands and is more labor intensive. In North America, normally only a few informal spot closures occur annually over most of the flyway. However, in a few traditional stopover sites with heavy whooping crane use during most fall migrations, spot closures may be considered when whooping cranes are present.

Informal spot closure of a localized area has the advantages of a quick response to a hazardous situation and flexibility in action as the birds move about. General guidelines for informal spot closure are listed in Appendix B. A spot closure involves temporarily prohibiting hunting within a small unit that will encompass the primary use area where whooping crane(s) may be exposed to hunting of look-alike species. The size of the closure area will depend on a number of factors that will need to be assessed for each individual situation. In Texas in early 1985, a whooping crane's movements were monitored and found to be primarily within an area 2.2 by 1.0 miles and an

informal closure was used to successfully protect the bird. Radio-tagging studies of migrating whooping cranes indicated local roost to feeding field movements of up to 6 miles. Such use areas might be described as a narrow rectangle. Spot closures in Wyoming in 1982 involved 2.3 square miles and in 1985 covered 5 square miles. These examples suggest that spot closure of an area 2 by 6 miles will suffice after the bird(s) use area is identified. Until the use area is identified, it may be necessary to close an area within a 6-mile radius of the bird. However, in Kansas 2 of 3 closures were ineffective when the whooping cranes moved outside the closed area and one of the closed areas encompassed about 20 square miles of private land adjacent to a National Wildlife Refuge where all hunting had been suspended. Thus, in some circumstances, informal spot closures are not effective.

A supply of the TEMPORARILY CLOSED TO HUNTING and WARNING/REWARD signs should be maintained at sites near anticipated whooping crane use areas within each state and province so they are available on short notice. Signs are available from **Tom Stehn**, Whooping Crane Coordinator (Appendix A.3, p. 21).

Hunting by conscientious hunters normally does not present a hazard to whooping cranes. However, in certain situations, whooping cranes may be considered to be in a high hazard situation. In these high hazard situations, hunting can continue when a whooping crane is present, provided all potential hunting parties can be contacted and made aware of the situation. For example, if the whooping crane is using private property that is hunted by a defined group of hunters, then contact with those hunters and landowners will suffice. If a whooping crane is using a state wildlife management area (WMA), then that WMA may be able to provide an orientation to all its hunters and continue with its public hunts. This arrangement seems to have worked well in the past, but communication and coordination efforts are of paramount importance. In many situations it isn't possible to contact all potential hunters, especially on private land or if the cranes are using multiple areas. An effort should be made to notify as many hunters as possible (website, phone messages, signs at public areas, hunter contacts) and educate the hunters enough before they go hunting so they should be aware and able to distinguish the look-alike species.

Some daytime monitoring (Option 6) may be necessary to define temporal and spatial movement and activity patterns for effective hazard assessment and response. Primarily when a bird is sick or injured, monitoring the bird regularly and/or throughout the day may be warranted. Intensive or continuous monitoring should be set up with a clear feasible objective and conducted as a joint cooperative state-federal action as determined by available manpower. Field personnel should consult with Key Contacts or other officials to determine the amount of monitoring that is warranted for a given situation.

Another option is to chase the birds from the hazard area (hazing). This approach would only be appropriate when the whooping crane is exposed to a severe enough hazard and the crane is near a nonhazard area to which it is likely to move (in its

migration pathway) if it is hazed from the hazard area. Whooping cranes should not be discouraged from normal use of stopover sites during migration. It is better in most circumstances to permit the birds to initiate their own movement and habitat use patterns. After whooping cranes are sighted, periodic monitoring and appropriate protective measures seem to be the safest actions until the birds voluntarily leave the hazardous situation. If hazing is the best solution, the birds may be hazed by zon guns or by personnel on foot, boats, vehicles or helicopter. Direct the birds' flight away from aerial obstructions such as power lines.

A less preferred option is formal closure of hunting in an appropriate portion of the hunt area by USFWS. In the U.S., closure and reopening action must be announced by publication in the *Federal Register* and therefore in most cases could not be initiated in a timely enough manner to be effective. Since the flexible informal spot closures likely provide adequate protection, more administratively cumbersome formal closures seem unnecessary.

Category 5. Sick, Dead, or Injured Whooping Crane(s) -- Each specific situation involving immediate hazards to whooping cranes will require that field personnel use sound judgment. The first concern of field personnel should always be the bird's well-being and safety of personnel (see Appendix G). The second concern would be phone contact with appropriate state and federal personnel as soon as possible. However, field personnel with limited experience in handling cranes are strongly advised to seek guidance from experts identified in the Appendices. USFWS policy already exists for this eventuality (Appendix F). USFWS personnel should initially notify the nearest USFWS Law Enforcement Office, the NWHC, and the Whooping Crane Coordinator. National Wildlife Health Center personnel should consult with **Dr. Glenn Olsen** of Patuxent Wildlife Research Center and/or other experts identified in the care of whooping cranes. Law Enforcement notifies the Regional Director. The Regional Director delegates other reporting responsibilities as noted in Appendix F. Decisions to capture and treat sick or injured birds will be made jointly by the State Wildlife Agency Director and USFWS Regional Director in consultation with NWHC and the Whooping Crane Coordinator. The Whooping Crane Coordinator will keep the USFWS Regional Office and CWS informed as the situation develops. Some information about capture and handling techniques is provided in Appendix D.

Public or media involvement is not recommended in the field when attempts are made to capture and provide emergency treatment to sick or injured birds. Whooping cranes are fragile, they may be further injured during capture, and are susceptible to going into shock when pursued and handled. To reduce stress on the bird, efforts should be made to keep the public away from the site and involve only the minimum number of personnel needed for safe capture and handling. Whooping cranes are more susceptible to being stressed before capture when large numbers of people are present.

Ideally, a veterinarian should be on hand whenever a sick or injured bird is captured. The veterinarian is needed to provide emergency treatment to keep the bird from going into shock, and to stabilize its condition. A local veterinarian with avian experience

should be able to provide that type of treatment (NWHC, in consultation with Dr. Glenn Olsen of Patuxent Wildlife Research Center and/or other crane health experts, can provide guidance in advance by telephone consultation with any local veterinarians who do not have experience treating wild cranes). If practical, even before the sick or injured bird is captured, the Whooping Crane Coordinator, in consultation with the NWHC and personnel at other captive whooping crane facilities, will decide upon the bird's transfer to an appropriate facility for the type of health problem being encountered.

A diagram for construction of materials and dimensions of transport crates is attached (Figure 2). The full-size plans are available from **Tom Stehn**, the USFWS Whooping Crane Coordinator. Key Contacts are encouraged to have a crate available at a central location within their state. The 42-inches-height crate is preferred for adult male whoopers, but some airline baggage compartments will not take heights greater than 38 inches. If airline service is limited in your area, you should modify the plans and build the crate 38 inches in height. If the crane is being transported solely by vehicle, a heavy cardboard box such as a refrigerator box cut down to size can serve as a crate.

When you contact airlines to arrange for transport of a live whooping crane, you must specify the dimensions of the crate and be certain the crate will travel upright within the baggage compartment. The storage compartment must be pressurized. After the crate is loaded on the aircraft, in a truck, or in any vehicle, check to ascertain the bird is still standing upright. If it is not, help it stand. A bird left lying in the bottom of the crate is more likely to injure itself and more prone to physiological complications. Personnel meeting the plane at the bird's destination should also immediately ascertain that the bird is standing.

Key Contacts should first contact federal and state law enforcement personnel when dealing with whooping cranes that are found dead. Whenever a dead or injured bird is found that may be involved in an active legal investigation, the carcass or live specimen should be treated as evidence. It can be shipped as determined by law enforcement personnel to either the National Forensics Laboratory or NWHC. Contact a USFWS Special Agent (Appendix A.1, p. 14) about maintaining a chain of custody record (Appendix H). Whooping cranes that are found dead in the field and determined by personnel not to be involved in legal investigations should be sent to NWHC for necropsy. If a legal investigation is determined to be warranted after submission to the NWHC a chain of custody will be immediately initiated. The Whooping Crane Coordinator should be contacted regarding disposition of whooping cranes that die after being taken into captivity. Immediate contact needs to be made with the NWHC staff to determine how the carcass is to be handled. A cooled carcass is better than a frozen one. "Blue" chemical ice packs work well since express shipments can be arranged to arrive in 24-hours. Dry ice is restricted in amount and requires special labeling and paperwork on all airline transportation and is not recommended.

Figure 1

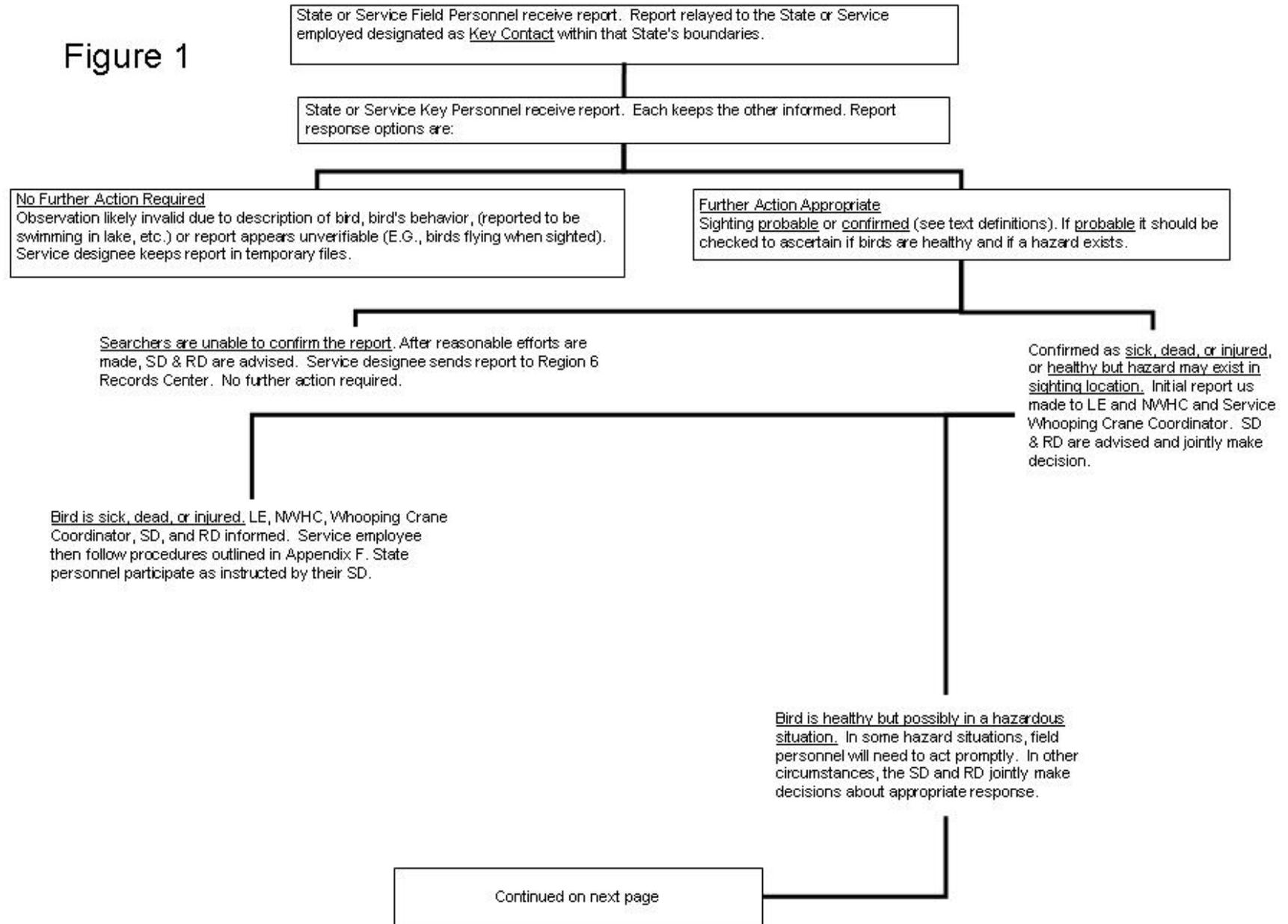


Figure 1
Continued from previous page

Bird is healthy but possibly in a hazardous situation. In some hazard situations, field personnel will need to act promptly. In other circumstances, the SD and RD jointly make decisions about appropriate response.

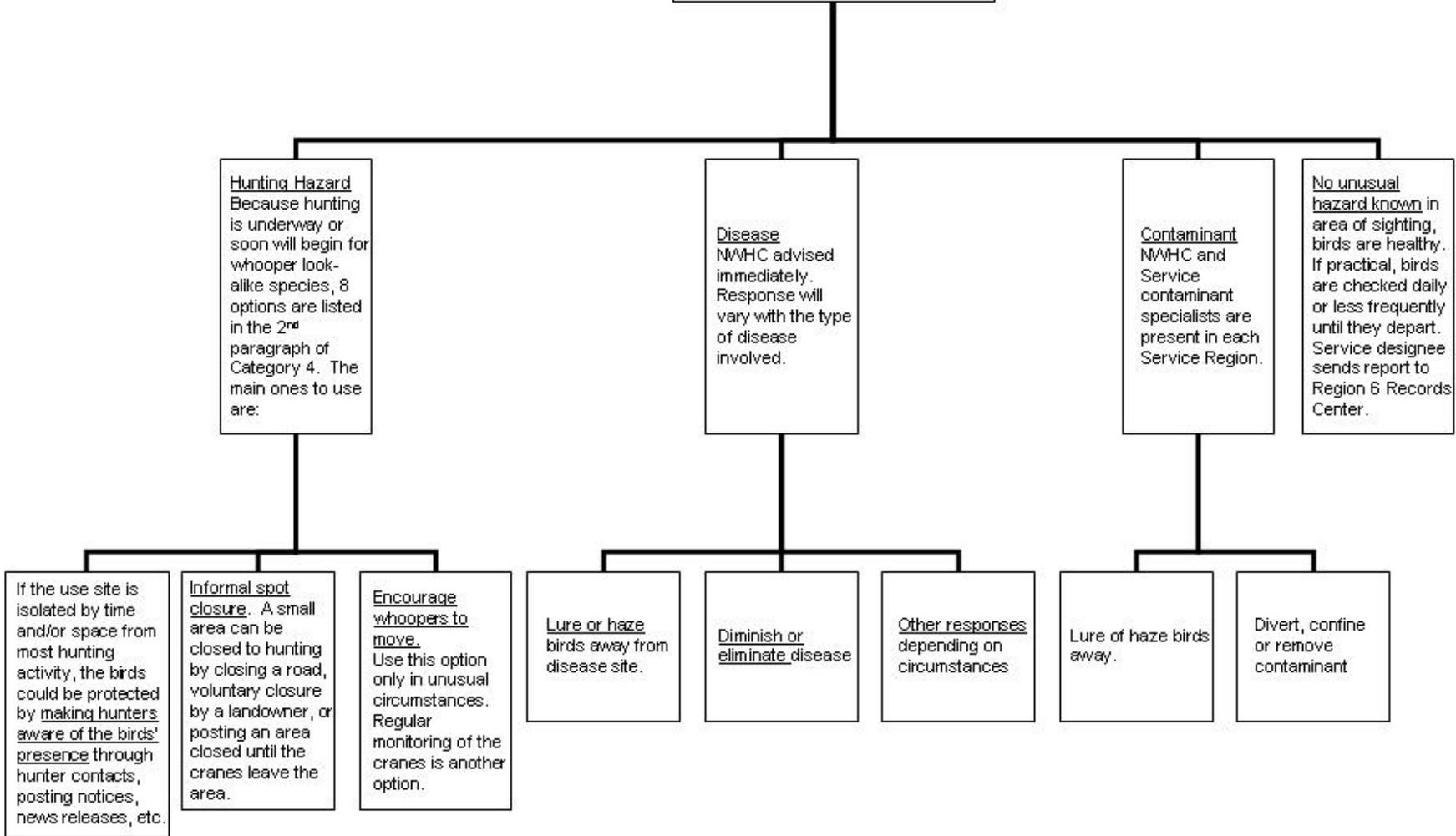
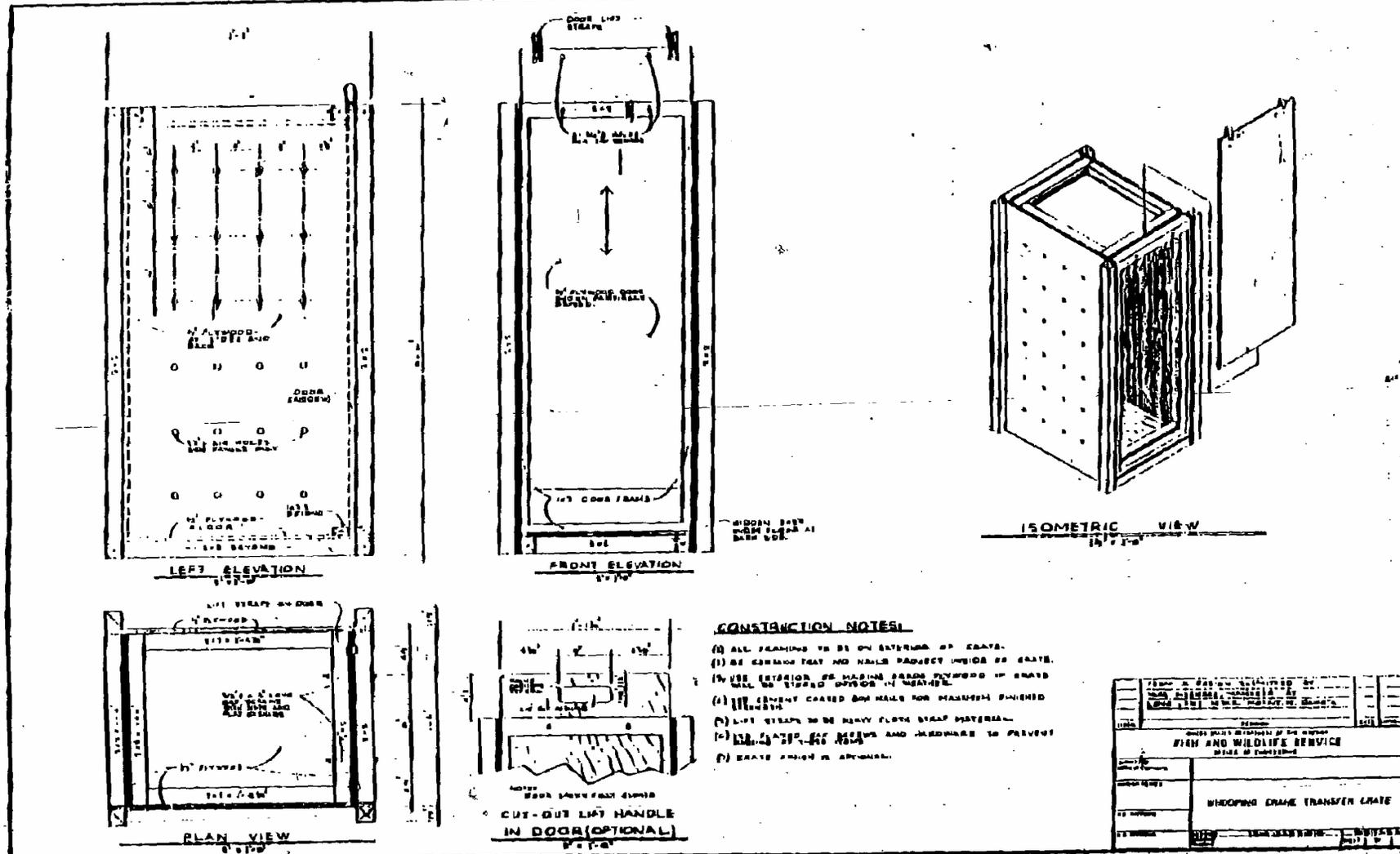


FIGURE 2 - TRANSFER CRATE DESIGN



APPENDIX A: PHONE NUMBERS AND ADDRESSES OF PARTICIPANTS

Names and numbers are listed in the following sequence:

1. Specialists in care of sick or injured whooping cranes.
2. Other veterinary assistance with extra training and experience in bird care.
3. Whooping Crane Coordinator (assists in contact with U.S. and Canadian personnel, provides guidance in response to hazardous situations).
4. Region 1, Federal decisions in response to contingency plan activities in Idaho.
5. Region 2, Federal decisions in response to contingency plan activities in AZ, NM, TX, and OK.
6. Region 4, Federal decisions in response to contingency plan activities in Florida.
7. Region 6, Federal decisions in response to contingency plan activities in CO, KS, ND, NE, MT, SD, UT, and WY.
8. Federal Records Center (sighting reports).
9. Federal Law Enforcement (for follow-up on all possible violations) Regions 1, 2, 4, and 6.
10. Contaminants Specialists (for follow-up on hazardous contaminant cases) Regions 1, 2, 4, and 6.
11. Flyway Representatives (information on hunting activities).
12. Key Contacts and Alternates.

1. Specialists in the care of sick or injured whooping cranes

National Wildlife Health Center (working hours) (608) 270-2400
Biological Resources Division
6006 Schroeder Rd.
Madison, WI 53711

Dr. Josh Dien
Work (608) 270-2450
Home (608) 286-8666
Cell (608) 444-4507

Dr. Tanya Hoffman
Work (608) 270-2406
Home (608) 270-2406
Cell (608) 444-4510

Dr. Kathryn Converse
(coordinates submissions and necropsies)
Work (608) 270-2445
Home (608) 238-1856
Cell (608) 239-9385

USGS Patuxent Wildlife Research Center
12100 Beech Forest Road
Laurel, Maryland 20708

Dr. Glenn Olsen
Office (301) 497-5603
Hospital (301) 497-5600
Home (301) 604-2646

International Crane Foundation
E-11376 Shady lane Road
Baraboo, Wisconsin 53913

Dr. Barry Hartup
Office (608) 356-9462, Ext. 150

Wisconsin Dept. of Natural Resources
101 S. Webster St./Box 7921
Madison, WI 53707-7921

Dr. Julie Langenberg
Office (608) 266-3143

2. Other Veterinary Assistance

The average veterinarian deals primarily with health problems of livestock, dogs, and cats. Birds present some unique care problems due to their hollow bones and differing digestive, reproductive, muscle, and skeletal features. Dr. Glenn Olsen provided the enclosed list of veterinarians with experience in bird care, who could be called upon to treat any sick or injured whooping cranes which might appear in your area during migration.

<u>STATE</u>	<u>VETERINARIAN</u>	<u>TELEPHONE NO.</u>
Texas Houston Zoo/Animal Hospital 113 N. Magregor Way Houston, Texas 77030	Joe Flanagan, D.V.M.	(713) 520-3275
San Antonio Zoo 3903 N. St. Mary's Street San Antonio, Texas 78212	Dr. Gary West	(210) 734-7184 Ext.125
Oklahoma Southside Dog/Cat/Bird Hospital 7020 S. Shields Oklahoma City, Oklahoma 73149	Roger Harlin, D.V.M.	(405) 636-1484
Colorado The Bird Hospital 5290 Manhattan Circle Boulder, Colorado 80303	Robert Irmiger, D.V.M.	(303) 499-5335
Kansas/ Nebraska College of Veterinary Medicine Kansas State University Manhattan, Kansas 66506	James Carpenter, D.V.M.	(913) 532-5690
South Dakota 805 E. 11th Street Yankton, South Dakota 57702	Nancy Saunders, D.V.M.	(605) 665-7411
North Dakota 1305 Business Loop E Jamestown, North Dakota 58401	Gary Pearson, D.V.M	(701) 252-9470

3. Whooping Crane Coordinator

Thomas V. Stehn
Aransas NWR
P.O. Box 100
Austwell, TX 77950

Work (361) 286-3559 Ext. 221
Home (361) 758-2354
Tom_Stehn@fws.gov

Alternate:

Wendy Brown, Endangered Species Biologist, Region 2

Work (505) 248-6664
Wendy_Brown@fws.gov

Alternate:

Charles L. Holbrook, Refuge Manager, Aransas NWR

Work (361) 286-3559 Ext. 225
Charles_Holbrook@fws.gov

4. Director, Region 2 (AZ, NM, OK and TX)

U.S. Fish and Wildlife Service
P.O. Box 1306
Albuquerque, NM 87103

(505) 248-6282

See home and office numbers for Whooping Crane Coordinator and his alternates listed above.

5. Director, Region 6 (CO, KS, ND, NE, MT, SD,)

U.S. Fish and Wildlife Service
P.O. Box 25486
Denver Federal Center
Denver, CO 80225

(303) 236-7920

Assistant Regional Director

(303) 236-8189

Ecological Services

Chief, Endangered Species Recovery

(303) 236-7398

6. Federal Records Center

Martha Tacha
U.S. Fish and Wildlife Service
Federal Building, Second Floor
203 West Second Street
Grand Island, NE 68801

Work (308) 382-6468 Ext. 19
Home (308) 382-3814
Cell (308) 379-6107
Martha_Tacha@fws.gov

7. Federal Law Enforcement

Region 2

New Mexico

Albuquerque Regional Office (505) 248-7889
Albuquerque Field Office (505) 346-7828

Oklahoma

Oklahoma City (405) 608-5251
Tulsa (918) 581-7469

Texas

Beaumont (409) 861-4436
Brownsville (956) 504-2035
Corpus Christi (361) 289-5037
Dallas/Fort Worth Airport (972) 574-3254
Fort Worth (817) 334-5202
El Paso (915) 872-4765
Houston (281) 442-4066
Laredo (956) 729-0617
Lubbock (806) 472-7273
McAllen (956) 686-8591
San Antonio (210) 681-8419
Victoria (361) 575-8608

Region 6

Colorado

Denver (303) 236-7540
Lakewood (303) 274-3560
Grand Junction (970) 257-0795

Kansas

Derby (316) 788-4474

Montana

Billings (406) 247-7355
Great Falls (406) 453-5790
Missoula (406) 329-3000

Nebraska

North Platte (308) 534-0925
Lincoln (402) 476-3747

North Dakota

Bismarck
Devils Lake

(701) 255-0593
(701) 662-8610

South Dakota

Pierre
Sioux Falls

(605) 224-1001
(605) 330-4318

8. Resource Contaminants Specialists

Region 2

Steve Robertson
(See address for Director, Region 2)

(505) 248-6669

Region 6

Larry Gamble
(See address for Director, Region 6)

(303) 236-7400 Ext. 261

9. Flyway Representatives Office of Migratory Bird Management

Dave Sharp
Central Flyway Representative

(303) 275-2386

U.S. Fish and Wildlife Service/DMBM
P.O. Box 25486, DFC
Denver, CO 80225-0486

10. Federal and State Personnel - Key Contacts and Alternates

REGION 2

Oklahoma

Ron Shepperd (Key)
Wildlife Biologist
Salt Plains National Wildlife Refuge
Route 1, Box 76
Jet, OK 73749

Work (580) 626-4794
Home (580) 327-5527
Ron_Shepperd@fws.gov

Jon Brock (Alternate)
Refuge Manager
Salt Plains National Wildlife Refuge
Route 1, Box 76
Jet, OK 73749

Work (580) 626-4794
Home (580) 395-2455
Jon_Brock@fws.gov

Mark Howery (Key)
Natural Resource Biologist
Oklahoma Dept. of Wildlife Conservation
1801 North Lincoln
Oklahoma City, OK 73105

Work (405) 521-4619
Home (405) 447-3641
mhowery@odwc.state.ok.us

Melynda Hickman (Alternate)
Oklahoma Dept. of Wildlife Conservation
1801 N. Lincoln
Oklahoma City, OK 73105

Work (405) 521-4616
Home (405) 329-3525
mhickman@zoo.odwc.state.ok.us

Texas

Tom Stehn (Key)
Aransas National Wildlife Refuge
P.O. Box 100
Austwell, TX 77950

Work (361) 286-3559 Ext. 221
Home (361) 758-2354
Tom_Stehn@fws.gov

Chad Stinson (Alternate)
Aransas National Wildlife Refuge
P.O. Box 100
Austwell, TX 77950

Work (361) 286-3559 Ext. 224
Home (361) 727-1182
Chad_Stinson@fws.gov

Lee Ann Johnson Linam (Key)
Texas Parks & Wildlife Department
4200 Smith School Road
Austin, TX 78744

Work (512) 448-4311
Home (512) 847-1226
lalinam@wimberley-tx.com

Mark Klym (Alternate)
Texas Parks & Wildlife Department
4200 Smith School Road
Austin, TX 78744

Work (512)389-4644
Home (512) 321-1256 or
(512) 308-5382
mark.klym@tpwd.state.tx.us

REGION 6

Colorado

Barbara Osmundson (Key)
U.S. Fish and Wildlife Service
764 Horizon Drive, Bldg. B
Grand Junction, CO 81506-3946

Work (970) 243-2778
Home (970) 241-3672
Barb_Osmundson@fws.gov

Pete Plage (Alternate)
U.S. Fish & Wildlife Service
Ecological Services/CFO
PO Box 25486, DFC
Denver, CO 80225

Work (303) 236-4750
Home (303) 666-9827
Peter_Plage@fws.gov

David Klute (Key)
Colorado Division of Wildlife
6060 Broadway
Denver, CO 80216-1000

Work (303) 291-7320
Home (303) 561-4380
david.klute@state.co.us

vacant (Alternate)
Colorado Division of Wildlife

Kansas

Gary "Pete" Meggers (Key)
Refuge Management Specialist
Quivira National Wildlife Refuge
Route 3, Box 48A
Stafford, KS 67578

Work (316) 486-2393
Home (316) 486-3173
Gary_Meggers@fws.gov

Daniel Mulhern (Alternate)
USFWS - Ecological Services
315 Houston Street, Suite E
Manhattan, KS 66502

Work (913) 539-3474
Home (913) 539-5027
Dan_Mulhern@fws.gov

Edwin J. Miller (Key)
Kansas Department of Wildlife and Parks
5089 County Rd. 2925
Independence, KS 67301

Work (316) 331-6820
Home (316) 331-7758
edm@wp.state.ks.us

Karl Grover (Alternate)
Area Game Manager
Cheyenne Bottoms Wildlife Management Area
R.R. 3
Great Bend, KS 67530

Work (316) 793-7730
Home (316) 792-7854
cheybott@wp.state.ks.us

Montana

Lou Hanebury (Key)
USFWS - Ecological Services
2900 4th Avenue North, Room 301
Billings, MT 59101

Work (406) 247-7367
Home (406) 252-3099
Lou_Hanebury@fws.gov

Elizabeth Madden
Medicine Lake NWR
223 North Shore Road
Medicine Lake, MT 95247-9600

Work (406) 789 2305 Ext 109
Home (406) 789 2266
Elizabeth_Madden@fws.gov

Jim Hansen (Key)
Central Flyway Migratory Bird Coordinator
Montana Fish, Wildlife, and Parks
2300 Lake Elmo Drive
Billings, MT 59105

Work (406) 247-2957
Home (406) 259-8698
jihansen@mt.gov

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Montana Fish, Wildlife & Parks
P.O. Box 200701
Helena, MT 59620-0701

Work (406) 444-5633
Home (406) 227-6422
rnorthrup@mt.gov

Nebraska

Martha Tacha (Key)
U.S. Fish and Wildlife Service
Federal Bldg., Second
203 West Second Street
Grand Island, NE 68801

Work (308) 382-6468 Ext. 19
Cell (308) 379-6107
Home (308) 382-3814
Martha_Tacha@fws.gov

Gene Mack (Alternate),
Project Leader
Rainwater Basin Wetland Mgmt. Dist.
P.O. Box 1686
Kearney, NE 68848

Work (308) 236-5015 Ext. 27
Cell (308) 627-6373
Gene_Mack@fws.gov

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Nebraska Game & Parks Commission
2200 North 33rd Street
Lincoln, NE 68503

Work (402) 471-5440
Home (402) 438-8098
Joel.Jorgensen@ngpc.ne.gov

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Nebraska Game & Parks Commission
2200 North 33rd Street
Lincoln, NE 68503

Work (402) 471-5419
Home (402) 488-3105
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North Dakota

Gregg Knutsen (Key)
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Long Lake NWR Complex
12000 353rd St. SE
Moffit, ND 58560
Gregg_Knutsen@fws.gov

Work (701) 387-4397
Home (701) 327-2190

Tim Kessler (Alternate)
Refuge Manager
Crosby Wetland Management District
P.O. Box 148
Crosby, ND 58730

Work (701) 965-6488
Home (701) 965-6832
Tim_Kessler@fws.gov

Mike Johnson (Key)
State Game & Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

Work (701) 328-6319
Home (701) 258-3039
mjohnson@state.nd.us

Mike Szymanski (Alternate)
State Game & Fish Department
100 North Bismarck Expressway
Bismarck, ND 58501-5095

Work (701) 328-6360
Home (701) 258-6924
Cell (701) 426-8826
mszymanski@state.nd.us

South Dakota

Jay Peterson (Key)
Wetland District Manager
Sand Lake National Wildlife Refuge
39650 Sand Lake Drive
Columbia, SD 57433

Work (605) 885-6320
Home (605) 397-2830
Jay_Peterson@fws.gov

Scott Larson (Alt)
USFWS - Ecological Services
420 South Garfield
Pierre, SD 57501

Work (605) 224-8693 Ext 32
Home (605) 224-4500
Scott_Larson@fws.gov

Eileen Dowd Stukel (Key)
South Dakota Dept. of Game, Fish & Parks
445 East Capitol
Pierre, SD 57501-3185

Work (605) 773-4229
Home (605) 224-5461
Eileen.DoudStukel@state.nd.us

Doug Backlund (Alternate)
South Dakota Dept. of Game, Fish & Parks
445 East Capitol
Pierre, SD 57501

Work (605) 773-4345
Home (605) 223-2451
Doug.backlund@state.sd.us

APPENDIX B: GUIDELINES FOR INFORMAL SPOT CLOSURE OF HUNT AREA

State and Federal Key Contact personnel should work with field personnel to identify ownership of the lands where the whooping cranes are feeding and roosting. Field personnel should communicate with landowner(s), explain the situation, request their cooperation in protecting the bird(s), in permitting land access by state and federal personnel who are protecting bird(s), and in temporarily restricting access by hunters and the general public.

If the whooping crane(s) appears to be confining its movements to properties owned by few landowners, and where access is restricted to a small number of individuals, then appropriate protection can be accomplished by communication with those few affected landowners and others who may be allowed access. If the whooping crane(s) is likely to move among tracts owned by several landowners. Then public notification should take place, using state Information and Education, and federal Public Affairs personnel to advise the public of a temporary, emergency spot closure of the hunt area. Information can be provided to local TV, radio, and newspaper outlets and posted to appropriate websites. Here is an example of the news release made by Texas Parks and Wildlife Department personnel in January 1985.

EL CAMPO -- Waterfowl hunters in Wharton County and surrounding areas are reminded by the Texas Parks and Wildlife Department that a juvenile whooping crane seen 15 miles south of El Campo last week still is in the area.

Ron George, sandhill crane program leader for the department, said the bird has been confirmed as an immature whooper which has been feeding with a flock of sandhill cranes.

The area around El Campo currently is open to waterfowl hunting and will open for sandhill crane hunting on January 12. "A complete hunting season closure, which would be permitted under the Federal Endangered Species Act, is not being considered at this time because the bird has confined its movements entirely to a closely-controlled area of private land with limited access and low hunting pressure," George said. "Local landowners, who originally reported the crane, have been very protective of the bird, and all other persons with access to the property have been advised of its presence."

Due to the limited private access to the land and the possibility of disturbing the bird, the general public is being asked to refrain from attempting to see the bird, George said.

"State and Federal wildlife personnel intend to `baby-sit' the bird and closely monitor its movements throughout the hunting season," he added.

The large white bird with black wing tips still has some rusty red juvenile feathers on its head, neck and tail. The whooper was banded as a chick at Wood Buffalo National Park

in Canada during the summer with a blue band on its left leg and a white band on the other.

"As well as can be determined, the juvenile became separated from its parents during their migration to the Aransas National Wildlife Refuge on the Texas Coast," George said.

The whooping crane is an endangered species protected by both State and Federal laws. The whoopers reached a dismal low of only 16 birds in 1941, but they since have made a slow comeback and currently number 84 birds in the Aransas flock.

"Since loss of even a single individual may be detrimental to the survival of an endangered species, absolute protection of all whooping cranes is essential," George noted.

Other means of notifying the public include:

1. Posting announcements at local country stores, gas stations, and U.S. Post Offices.
2. Notifying the officers of local hunting clubs.
3. Contact with landowners and tenants who live on lands bordering properties where the whooping crane is presently in residence.
4. "Warning" signs posted in the area closed. Spot closure signs have been distributed from Region 2 to the States and other Regions. Additional copies are available by request to Tom Stehn (address page 20).

After the bird(s) leave the area, the reopening of local hunting would be announced by recontacting local landowners, tenants, and officers of local hunt clubs, removing announcements and signs posted earlier, and by media releases.

Local Monitoring

The purpose of continuous daytime monitoring of the bird(s) in a hazardous hunt situation is to minimize the likelihood of a whooping crane being mistaken for a legally hunted species of similar appearance, to prevent shooting by vandals, and to prevent disturbance of the bird(s) by the general public. Daily monitoring in a hunt-hazard situation requires dawn to dusk observation of the bird(s) by an officer or other agency personnel. USFWS and the state Key Contact should endeavor to share these monitoring duties. The Fish and Wildlife Service and State Key Contact personnel will jointly schedule and assign the monitoring work assignments. Hunter contact with the crane(s) should be prevented and other human contact or near approach should be discouraged. If the bird(s) flies, attempt to maintain visual contact and locate the subsequent use site. Each observer, upon putting the bird(s) to roost, should relay site-use information to the observer scheduled for the following day. If the crane flies and visual contact is lost, notify the Key Contact personnel.

APPENDIX C: WHOOPING CRANE SIGHTING REPORT FORM

State:
 Recorded by:
 Date:
 Phone Number:



FOR RECORDS CENTER ONLY Obs. Number Confirmed ____ Probable ____ Unconfirmed ____ State/County _____ Color Markings
--

If a whooping crane is sighted or reported, IMMEDIATELY notify your agency contact person. If you are unable to advise that person, please notify a contact person of the cooperative agency. Notify your immediate supervisor if you are unable to contact any of the people listed above. Complete this form whenever you receive a report of a whooping crane. Inquire about the observer's familiarity with whoopers and look-alike species. The question should be worded to gain some insight about the validity of the sighting report. Send completed form to: Martha Tacha, U.S. Fish and Wildlife Service, 203 West Second Street, Grand Island, NE 68801.

Observer's Name: _____

Address: _____

Phone number (home/cell) _____ Work _____

Other Observer(s) names and contact information _____

Date of observation _____ Time and duration _____

Number of cranes: Adults _____ Juvenile _____

Observation distance: _____ Binoculars or scope used? _____ Photos taken? Y N

Location : County: _____ GPS Coordinates (if available): _____

Legal description: _____

Direction and distance from nearest town (use only cardinal directions N,S,E,W, e.g., 3 mi. W and 2.5 mi. S of Denton): _____

Behavior of cranes (Circle appropriate descriptor: flying landed feeding loafing roosting)

Habitat/Other Species present: _____

Evidence of injury, sickness, or hazard? _____

Colored leg bands observed: Left _____ Right _____

Circumstances of sighting:

Description of the Birds (include characteristics seen to rule out look-alike species):

Birding experience of observer:

Recommendation for Classification (circle one: Confirmed Probable Unconfirmed)

Reported to Records Center: Date _____ via (circle) Phone Fax Email Mail

APPENDIX D: CAPTURE AND HANDLING TECHNIQUES

Two basic techniques have been used to capture whooping cranes partially disabled by illness or injury. One has consisted of daytime herding of the bird with aircraft, vehicles, or men to a point where its movement was confined and it could be captured with a long-handled net. The second involves capture at night while the crane is roosting (Drewien, R. C., H. M. Reeves, P. F. Springer, and T. L. Kuck. 1967. Backpack unit for capturing waterfowl and upland game by night-lighting. *J. Wildl. Manage.* 31:778-783). One man carries a backpack generator and directs a bright spotlight (Q-beam). A second man controls a long-handled net. The noise of the generator and the bright light help to confuse, blind, and discourage the bird from taking flight. The light and sound is sometimes used to herd the bird to the edge of a tall, dense stand of cattail, bulrush, or grasses where further movement away from the light is prevented. The net is placed over the bird, the bird's upper neck and feet grabbed and the wings held against the body. Have a wide roll of gauze, the elastic leg wrapping used by athletes, or Vet wrap (racing or shipping bandage which has a velcro strip on it), to wrap the bird's folded wings (wrap or brail each wing to itself). This wrapping prevents injury of the wings and the captors. Bind the wings snugly, but not so that circulation is impaired. Do not wrap the wings against the body. Leave the wings free from the body so the bird can maintain its balance and so that respiration is not inhibited.

The pointed bill and the feet are the crane's most effective weapons. Cranes tend to strike for the eyes, so wear safety glasses (See also Appendix H). Cranes are dangerous. An adult male sandhill crane was observed defending himself against a coyote. The coyote was killed when the crane drove his bill through the eye socket and into the skull. A former Fish and Wildlife Service employee was seriously injured while handling a sandhill crane captured for banding. The crane drove its bill through the septum of the man's nose. He might have bled to death, but his companions were able to quickly get him to the hospital. When capturing a crane, always hold the upper neck so the bird is prevented from striking with its bill. Control the bird's feet to avoid scratches and struggling that may cause injury to you or the bird. Cover the bird's head with an object that will not inhibit breathing, but will quiet the bird. Keep the public away from the bird. Do everything possible to diminish the likelihood of the bird going into shock such as: complete the capture as quickly as possible, minimize physical exertion of the bird, keep the bird and capture crate out of the hot sun, prevent the bird from viewing people, place it in a dark, confined space (the transfer crate), have a veterinarian assess its health status and administer emergency treatment if needed.

After the initial treatment and capture the bird may be placed in a room or cage for temporary confinement until it can be shipped to the optimum treatment facility. Do not place the bird in an area if the floor is a glazed tile or other slippery material where the bird will injure itself. Keep the wings individually wrapped or brailed so the bird will not fly against the wall, but check the wrappings to ensure that blood circulation is adequate. In one instance a bird was suitably confined in a room with a concrete floor and an area 6 by 10 feet enclosed by bales of straw. Water was provided in a flat pan. Instructions for

feeding and temporary care can be provided by National Wildlife Health Center and by the staff at Patuxent Wildlife Research Center.

Keep the bird in a darkened room. Remove any objects they might eat because in such situations they may swallow almost anything (pieces of leather, plastic, glass, metal). Place the birds in a clean environment. Do not confine them where other domestic or captive birds have been or are confined. Other captive birds frequently harbor diseases that cranes have not previously been exposed to and to which they are very susceptible.

The following is the list of equipment used to capture cranes. The firms mentioned have had these items in their inventory. We assume that several other firms also offer these items, perhaps at a better price.

1. TAS QEG-300 Portable Generator, 110a.c./12d.c., single phase, gasoline powered. Purchased from:

Coffelt Electronics Company Inc.
3910 S. Windermere Street
Englewood, Colorado 80110
(303) 761-3505

2. Freighter Backpack. Purchased from:

Ben Meadows Company
2601-B West 5th Avenue
P.O. Box 2781
Eugene, Oregon 97402
(800) 547-8813

3. Landing Net, 24" X 30". Purchased from: See # 4.

4. Q Beam Spot/Flood Light. Purchased from:

Items 3 & 4

Cabelas
812 13th Avenue
Sidney, Nebraska 69160
(800) 237-4444

APPENDIX E: FEDERAL REGULATIONS PROTECTING PERSONS HANDLING WHOOPING CRANES

*Title 50 - Wildlife and Fisheries, Chapter 1 - United States Fish and Wildlife Service,
Department of the Interior, Subchapter B, Part 17, Section 21 Prohibitions

Take.

- (1) It is unlawful to take endangered wildlife within the United States, within the territorial sea of the United States, or upon the high seas. The high seas shall be all waters seaward of the territorial sea of the United States, except waters officially recognized by the United States as the territorial sea of another country, under international law.
- (2) Notwithstanding paragraph (c)(1) of this section, any person may take endangered wildlife in defense of his own life or the lives of others.
- (3) Notwithstanding paragraph (c)(1) of this section, any employee or agent of the Service, any other Federal land management agency, the National Marine Fisheries Service, or a State conservation agency, who is designated by his agency for such purposes, may, when acting in the course of his official duties, take endangered wildlife without a permit if such action is necessary to:
 - (i) aid a sick, injured, or orphaned specimen; or
 - (ii) dispose of a dead specimen; or
 - (iii) salvage a dead specimen which may be useful for scientific study; or
 - (iv) remove specimens which constitute a demonstrable but non-immediate threat to human safety, provided that the taking is done in a humane manner; the taking may involve killing or injuring only if it has not been reasonably possible to eliminate such threat by live-capturing and releasing the specimen unharmed, in a remote area.
- (4) Any taking pursuant to paragraphs (c)(2) and (3) of this section must be reported in writing to the United States Fish and Wildlife Service, Division of Law Enforcement, P.O. Box 19183, Washington, D.C. 20036, within 5 days. The specimen may only be retained, disposed of, or salvaged in accordance with directions from the Service.
- (5) Notwithstanding paragraph (c)(1) of this section, any qualified employee or agent of a State Conservation Agency which is party to a Cooperative Agreement with the Service in accordance with section 6© of the Act, who is designated by his agency for such purposes, may, when acting in the course of his official duties take those endangered species which are covered by an approved cooperative agreement for conservation programs in accordance with the Cooperative Agreement, provided that such taking is not reasonably anticipated to result in:
 - (i) the death or permanent disabling of the specimen;
 - (ii) the removal of the specimen from the State where the taking occurred;
 - (iii)

the introduction of the specimen so taken, or of any progeny derived from such a specimen, into an area beyond the historical range of the species; or (iv) the holding of the specimen in captivity for a period of more than 45 consecutive days.

*U.S. Government. 1993. Code of Federal Regulations: Wildlife and Fisheries 50 Parts 1 to 199. (page 134). Government Printing Office. 658pp.

APPENDIX F: U.S. FISH & WILDLIFE SERVICE POLICY ON DISPOSITION OF DEAD, INJURED, OR SICK ENDANGERED AND THREATENED SPECIES

This appendix provides the content of U.S. Fish and Wildlife Service policy on handling and disposition of dead, injured, or sick endangered and threatened species.

It is Service policy that the following procedure be followed when dead, injured, or sick specimens of endangered and threatened species are found by, or brought to the attention of, Service employees. Each Regional Director (RD) is responsible for making this procedure known to all regional personnel and for issuing instructions as appropriate to ensure that a mechanism is in place to implement the procedure.

The primary objective in handling a sick or injured specimen is effective treatment and care. The primary objective when encountering a dead specimen is to preserve biological materials in the best possible state for later analysis of cause of death; preserving biological materials is also preserving evidence. In conjunction with treatment of sick and injured animals, or preservation of biological materials from a dead animal, the finder has a responsibility to ensure that evidence outside the specimen is not unnecessarily disturbed. Therefore, upon locating a dead, injured, or sick endangered or threatened species specimen:

1. Initial notification will be made to the nearest Service Law Enforcement (LE) office.
2. If there is an implication of human-caused injury or mortality, LE should provide specific instructions for preservation of potential evidence. LE is assigned the responsibility of notifying the RD after this initial contact by the reporting individual, and for pursuing any related investigations which are requested by the RD.
3. After LE is contacted, the reporting individual will contact the National Fisheries Center, Kearneysville, West Virginia, or the National Wildlife Health Center, Madison, Wisconsin, for fish and wildlife involvements, respectively. When contacting the Centers, the reporting individual should communicate any instructions received from LE.
4. The Centers are responsible for coordinating all activities involving clinical treatment and postmortem examinations of endangered or threatened species found by or brought to the attention of Service employees. This responsibility includes issuance of specific instructions and guidance for handling individual situations.

The Centers will also serve as an information repository, and transfer information regarding the current status and findings associated with cause of death investigations of specific cases to RD's directly, or through LE (as the RD requests) and to Washington Office Public Affairs. The Centers' activities will be closely coordinated with the RD of the Region in which the specimen was initially located; written interim reports regarding progress of analyses, etc., will be provided to the RD on a schedule consistent with the press of the situation, or as requested by the RD. The Centers will also provide a timely final diagnostic and analytical report to the RD.

5. The RD is responsible for submitting a preliminary report and a final report after all laboratory results are received. Responsibility for notifications and writing the reports may be delegated.
6. AFA is responsible for advising the Director, FWS, of reports received from RD's of significant instances of dead, injured, or sick endangered/threatened species. The AFA will also have overall responsibility for coordination of this procedure at the Washington Office level.
7. To ensure that proper control is exercised over the disposition of specimens, or parts of specimens, Law Enforcement Chain-of-Custody records should be maintained, even though there may be no indication of illegal activity.

APPENDIX G: SAFETY PRECAUTIONS WHEN HANDLING INJURED, SICK, OR DEAD WHOOPING CRANES

To: All Fish and Wildlife Service Supervisors and Managers

Subject: Collection of Animal Specimens

This bulletin serves to remind personnel involved with the collection of animal specimens that careful attention to safety and proper techniques are required to protect themselves, their families, and others. These precautions are required because of the wide variety of infectious disease agents transmissible from animals to man, potential hazards associated with contact with toxicants and other contaminants wildlife may have been exposed to, and physical damage that can be inflicted by live animals that are not properly handled. Station safety committee meetings should be used to discuss the contents of this bulletin.

Collecting animal specimens should be well planned, and the proper equipment should be used to minimize the risk from contact either with the specimens or with normal and abnormal hazards present in the environment; plans should also be made to prevent any pathogens or hazardous materials from being dispersed as a result from the collection, shipment, or storage of such animal specimens.

- I. Planning for animal specimen collection and shipment.
 - A. Consult with the Regional Environmental Contaminants Coordinator and the National Wildlife Health Center, (608) 271-4640, to ensure that specimens are collected in the manner required by the follow-up work to be performed in the laboratory.
 - B. Assemble required equipment, based on the type of area where animal specimens will be collected, and on the type of animal involved.
 - C. Make arrangements to ship collected specimens to the laboratory, including advanced notification for discussion of necessary controlled conditions during shipment or temporary storage. Provide refrigeration if needed, using leak proof plastic bags containing wet ice or sealed frozen substitutes such as "blue ice" placed next to the bagged specimens. Transport in an insulated container; inexpensive coolers made of heavy foamed polystyrene are preferred for final shipment as they will not be returned but will be destroyed by incineration to prevent any spread of contaminated materials. To avoid crushing during shipment, containers should be placed in sturdy cardboard boxes with newspaper or other packing. If shipment will take 48 hours or more, dry ice must be used.
 - D. If specimens have to be immediately frozen, follow proper techniques and apply relevant safety guidelines; with dry ice, prevent "cold burns" by handling dry ice with cotton gloves; if blocks have been broken up, wear a face shield or protective goggles; with liquid nitrogen, wear both heavy insulated gloves and face shield. When dry ice is used, the container cannot be sealed and must bear markings "Hazardous Shipment." The weight of the dry ice used must be listed on the outside of the container. Carriers can refuse to accept hazardous shipments and should therefore be contacted prior to shipping.

- E. Shipments must be identified as biological specimens.
- II. Actual collection of animal specimens.
 - A. Wear all the required protective equipment: impervious gloves (preferably of the disposable kind), knee-high, steel-toed rubber boots, hip-waders or disposable booties, safety glasses, and dust mask for protection against contaminated dusts.
 - B. Avoid use of bare hands to collect animal specimens. Pick up animal specimens or animal excreta or parts with gloved hands, shovel, pitchfork, or any appropriate tool to collect animal specimens. Attach identifying label to each animal specimen and place each specimen into a separate plastic bag after first wrapping in aluminum foil. Bagged specimens should be placed into a second plastic bag and individual specimens from a group into a large plastic bag, if feasible.
- III. Sanitation and personal hygiene.
 - A. If formaldehyde or any similar preservative has to be used, be sure to use it in a well ventilated area, preferably under a laboratory hood. Prevent contact with hazardous chemicals, particularly through breathing; wear adequate respiratory protection if needed. Consult Material Safety Data Sheet for specific chemical prior to use.
 - B. Careful observation of basic sanitation rules is required for yourself as well as that of your coworkers and family. Clean up and disinfect yourself after any collection of animal specimens; wash your hands with soap and water; disinfect shoes, boots, waders, etc., with germicide solutions such as dilute bleaches.
 - C. Refrain from smoking or consuming food and drink while conducting the collection activities, and do not consume food or drink until you have washed yourself and changed into street clothes. Similarly, wash your hands thoroughly before using toilets, and take shower at end of daily collection, if possible.

APPENDIX H: CHAIN OF CUSTODY RECORD (FORM 3-2063)

The Chain-of-Custody Record must be initiated by the officer who first transfers possession of seized property items to another person.

When completing the custody form it is useful to assign a unique number to each item seized. This allows the description of individual items being transferred to be indicated by item numbers in the transfer of possession blocks.

The original Chain-of-Custody Record **MUST** remain with the seized property items as they are transferred from one person to another. A preferred method would be to place the original Form 3-2063 inside a string-closure manila envelope cleared marked "CHAIN-OF-CUSTODY RECORD", and attach that envelope to one of the evidence packages or items.

Appendix H: Chain of Custody Record

DEPARTMENT OF THE INTERIOR U.S. FISH AND WILDLIFE SERVICE DIVISION OF LAW ENFORCEMENT				CHAIN OF CUSTODY RECORD		FILE NO. INV.	
DATE AND TIME OF SEIZURE:		DISTRICT:		EVIDENCE/PROPERTY SEIZED BY:			
SOURCE OF EVIDENCE/PROPERTY (person and/or location): ___ TAKEN FROM: ___ RECEIVED FROM: ___ FOUND AT:				CASE TITLE AND REMARKS:			
ITEM NO.		DESCRIPTION OF EVIDENCE/PROPERTY (include Seizure Tag Numbers and any serial numbers):					
ITEM NO:		FROM: (PRINT NAME, AGENCY)		RELEASE SIGNATURE:		RELEASE DATE	DELIVERED VIA:
		TO: (PRINT NAME, AGENCY)		RECEIPT SIGNATURE:		RECEIPT DATE	___ U.S. MAIL ___ IN PERSON ___ OTHER:
ITEM NO:		FROM: (PRINT NAME, AGENCY)		RELEASE SIGNATURE:		RELEASE DATE	DELIVERED VIA:
		TO: (PRINT NAME, AGENCY)		RECEIPT SIGNATURE:		RECEIPT DATE	___ U.S. MAIL ___ IN PERSON ___ OTHER:
ITEM NO:		FROM: (PRINT NAME, AGENCY)		RELEASE SIGNATURE:		RELEASE DATE	DELIVERED VIA:
		TO: (PRINT NAME, AGENCY)		RECEIPT SIGNATURE:		RECEIPT DATE	___ U.S. MAIL ___ IN PERSON ___ OTHER:

APPENDIX I – DEAD WHOOPING CRANE DATA SHEET FOR NATIONAL WILDLIFE HEALTH CENTER

Dead Whooping Crane Data Sheet

Contacts:

Aransas-Wood Buffalo Population/Central Flyway

<p>Kathryn Converse USGS National Wildlife Health Center 6006 Schroeder Road Madison, WI 53711 Work: 608-270-2445 Fax: 608-270-2415 Home: 608-238-1856 Cell: 608-239-9385 email: kathy_converse@usgs.gov</p>	
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Chill carcass (wet ice bag(s) okay to chill, ship birds with frozen blue ice packs). Contact Kathy or Marilyn and include this data sheet in package with carcass. Courtesy call to area USFWS Law Enforcement Agent if needed.

Agent name/number:

Submitter:

Cell Phone Number:

Date Collected:

ID Number:

FWS band:

Found Dead Yes No

Euthanized Yes No

Method?

Specific location where found including county and state:

Describe site features (vegetation, water, feathers, tracks, fences, roads, power lines).

Clinical signs? Any unusual behaviors or changes in physical appearance?

History:

Environmental Factors?

Additional Comments or Observations?

APPENDIX J – INSTRUCTIONS FOR COLLECTION and SHIPMENT of AVIAN and MAMMALIAN CARCASSES TO THE NATIONAL WILDLIFE HEALTH CENTER

Please follow these instructions for collecting and shipping carcasses to the National Wildlife Health Center (NWHC) to insure adequate and well preserved specimens.

1. More than one disease may be affecting the population simultaneously. When possible, collection of both sick and freshly dead animals increases chances for detecting most diseases. Collect and ship specimens representative of all species and geographic areas.

Obtain good specimens for necropsy. Carcasses that are decomposed or scavenged are usually of limited diagnostic value. Ideally, one should collect a combination of freshly dead animals and animals that were euthanized after their behavior is observed and recorded.

2. Collect animals under the assumption that an infectious disease or toxin is involved and other animals may be at risk. Remember to protect yourself as some of these diseases and toxins are hazardous to humans.

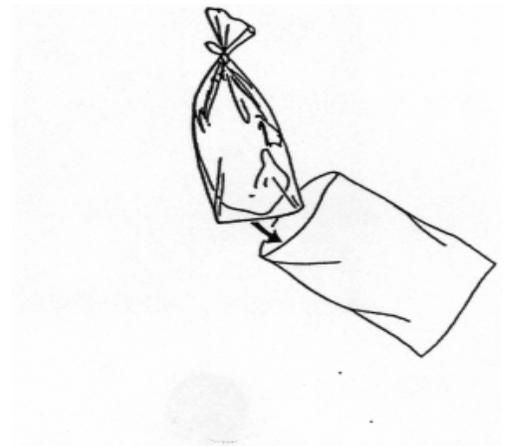
Use rubber gloves when picking up sick or dead animals. If you do not have gloves insert your hand into a plastic bag. Immediately attach a leg tag to each animal with the following information in pencil or waterproof ink:

- species
- date collected
- location (county/town)
- found dead or euthanized
- collector (name/address/phone)
- additional history on back of tag

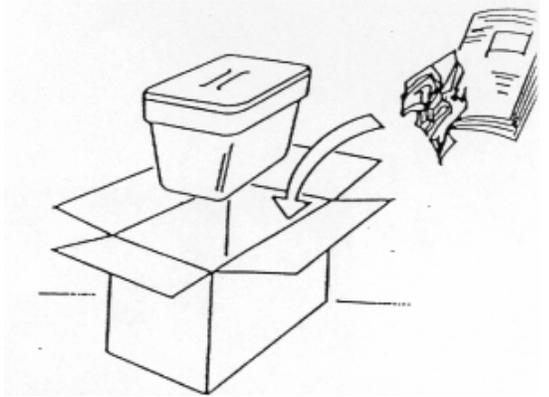


Place each animal in a plastic bag, tie shut, then place inside a second bag and tie shut (more than one individually bagged animal can be placed in the second bag). This system of double bagging prevents cross-contamination of individual specimens and leaking shipping containers that can contaminate vehicle surfaces and handlers during transportation. Contact the NWHC for assistance with collecting samples from animals that are too large to ship.

If you plan to collect animals, take along a cooler containing ice to immediately chill the carcass(es).

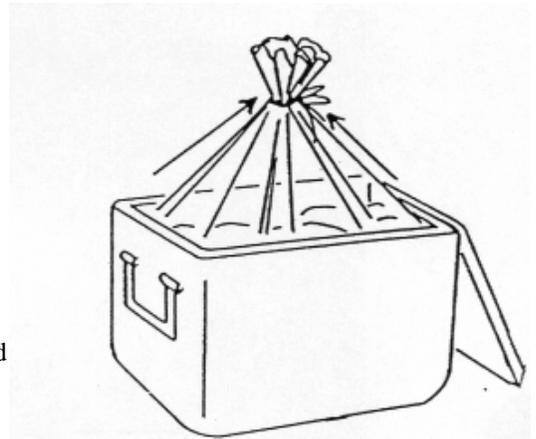


- Ship animals in a hard sided plastic cooler or a styrofoam cooler placed in a cardboard box. Unprotected styrofoam coolers break into pieces during shipment. *Stuff* newspaper in any space between the sides of the box and cooler. A shipping container can be made by lining a cardboard box with at least 1-inch thick pieces of styrofoam. Hard sided (plastic) coolers will be returned if labeled with your name and address in permanent ink.

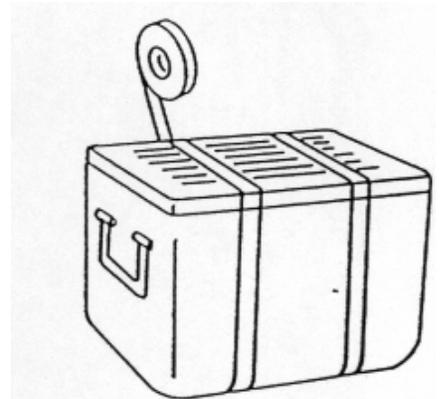


Line either type of cooler with a large plastic bag and pack the individually bagged animal(s) in the cooler with enough blue ice to keep carcasses cold. Blue ice (hardware or department store) is preferred to bagged wet ice to avoid leaking during shipment. Do not use dry ice unless instructed to do so. Place crumpled newspaper or similar absorbent material in the cooler with the bagged carcasses to fill unused space, keep ice in contact with carcasses, provide insulation, and absorb any liquids. Tape cooler or box shut with strapping tape.

Place a detailed history of the animal and circumstances associated with the mortality event in an envelope and tape to the outside of the cooler or FAX at 608-270-2415.



- Prior to shipping contact one of the following wildlife disease specialists: west of continental divide (Rex Sohn, 608-270-2447 or rsohn@usgs.gov) ; continental divide east to Mississippi River (Kathryn Converse at 608-270-2445 or kathy_converse@usgs.gov; or east of the Mississippi River (Grace McLaughlin (608-270-2446 or gmclaughlin@usgs.gov). Ship specimens by one day (overnight) service from Monday through Wednesday to guarantee arrival at NWHC before the weekend. If specimens are fresh and need to be shipped on Thursday or Friday please call NWHC to make special arrangements.



Freezing and thawing can make isolation of some pathogens difficult and damage tissues needed for microscopic examination. The NWHC prefers unfrozen specimens if they can be sent usually within 24 hours of collection or death. We will provide guidance on when or if to freeze samples on a case-by-case basis. If you are in the field and cannot call or ship within 24-36 hours, freeze the animal(s).

- Label coolers as follows.

- National Wildlife Health Center
6006 Schroeder Road, Madison, WI 53711**

In addition to the NWHC address, please write in the lower left corner

DIAGNOSTIC SPECIMENS -WILDLIFE

to cover federal shipping regulations and ensure delivery of coolers with specimens to our necropsy entrance.

Please make note of the tracking number
in case packages are delayed.