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THE CONTINGENCY PLAN FOR FEDERAL-STATE COOPERATIVE PROTECTION OF WHOOPING CRANES

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Abstract: A "Contingency Plan for Federal-State Cooperative Protection of Whooping Cranes" was developed in 1985 to protect migrating whooping cranes (*Grus americana*). Thirteen states and the U.S. Fish and Wildlife Service implemented the plan in summer 1985. One state and one federal employee, and alternates, are appointed as the "key contact" individuals within each state. Reports of sightings of whooping cranes are forwarded to these key contacts and they coordinate the response to sightings. An important part of the plan is education activities designed to increase the public's ability to identify whooping cranes and to encourage the reporting of sightings during migration. Responses to sightings vary with the associated circumstances. Whooping cranes have been hazed from fields where they were feeding on pesticide-treated corn seed. Hunting activities have been temporarily closed in 4 states for several square kilometers around cranes until they continued their migration. Since the plan was implemented, there has been a 14% increase in confirmed sighting reports, a 29% reduction in losses of white-plumaged birds, and a statistically significant ($P < 0.01$) increase in survival of juvenile migrating cranes.

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Spring and fall migration, a period encompassing about 17% of an individual whooping crane's year, is when 60% or more of the mortality occurs among fledged whooping cranes (Lewis et al. this proceedings). Kuyt & Goossen (1987) noted that 23% of the juvenile cranes banded in July (1977-1984) died before reaching Texas Gulf Coast wintering grounds. Migrating cranes encounter many potential hazards (powerlines, disease, storms, contaminants, shooting, etc.) during their 4,000 km flight. Migration is obviously a period when additional efforts to protect whooping cranes are needed to accelerate recovery of the species.

This paper describes a contingency plan developed to help protect whooping cranes while they are migrating and during summer and winter wanderings. The plan was developed in 1985 by a committee consisting of the author and Jack Her-ring, New Mexico Game and Fish Commission, as cochairmen; Jeff Haskins, Harvey Miller and Wayne Wathen of the U.S. Fish and Wildlife Service; and Mike Johnson of North Dakota Game and Fish Department. The committee was originated under the auspices of the Technical Committee of the Central Flyway Council. Many other individuals helped develop the plan, and the assistance of each is gratefully acknowledged.

PLAN OBJECTIVES

The contingency plan describes guidelines 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 such as contaminants and disease. 2. To reduce whooping crane use of sites deemed to be a disease or pollutant hazard. 3. To reduce the likelihood of illegal shooting of whooping cranes. 4. 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.

ORGANIZATION

The plan is designed to improve protection of whooping cranes, particularly in areas through which they migrate. First operational for the fall migration of 1985, the plan is a cooperative effort by the U.S. Fish and Wildlife Service and state wildlife agencies in the 13 states where whooping cranes occur — Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah and Wyo-

ming.

One state employee and 1 federal employee, and alternates, are designated "key contact" individuals within each state. Reports of sightings of whooping cranes are forwarded to these key contacts and they coordinate a response. Federal and state personnel work as a team within each state and involve others in their agencies as circumstances require.

PUBLIC EDUCATION

The education element in the plan is designed to increase the public's ability to identify whooping cranes and to encourage the reporting of sightings during migration. Media releases suitable for television, radio, magazines and newspapers are distributed for use just before migration. Signs, pamphlets and audio and video public service announcements are distributed to increase the competency of potential observers in identifying whooping cranes and distinguishing them from other similar appearing species (white pelicans, sandhill cranes, snow geese and tundra swans). These efforts also diminish the likelihood that sportsmen might misidentify and shoot a whooping crane.

SIGHTING DEFINITIONS

A "confirmed" whooping crane sighting is an observation made by a qualified observer (trained ornithologist or birder with experience in identifying whooping cranes). A "probable" sighting is a report wherein the observer's physical description of the bird seems accurate, the number of birds seen is reasonable (more than 10 in a flock unlikely), behavior of the birds does not eliminate whooping cranes (i.e. swimming in a reservoir) and there is a good probability that the observer would provide a reliable report. An "unconfirmed" sighting is one which meets some but not all of the requirements for a probable sighting.

Whenever a federal or state employee receives a report of a whooping crane sighting he/she notes the observer's name, address and phone number; date, time and location of sighting; number of birds; description and behavior of the birds; and inquires about the observer's familiarity with whooping cranes and look-alike species.

SIGHTING RESPONSES

Probable sightings are 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 receive high priority for an immediate effort to confirm the sighting. Unconfirmed sightings are the lowest priority for investigation. Some sightings, because of characteristics (i.e. large numbers of birds or birds swimming), do not deserve followup efforts. Confirmed sightings are divided into 5 categories, each requiring a different response.

Category 1. Non-hazard—Whooping cranes are present where there are no unusual hazards to their well-being. The bird(s) appear healthy and their behavior normal. The site may be revisited later by a federal or state employee to check on the physical condition of the bird(s) and to ascertain that no problem has developed.

Category 2. Disease Hazard—A disease hazard exists where an avian disease outbreak is underway or there is a chronic disease problem. For example, avian cholera outbreaks periodically occur in the Rainwater Basin of Nebraska. If migrating whooping cranes attempt to utilize habitat where an avian cholera or a botulism outbreak is underway, the bird(s) is hazed from the vicinity. Personnel continue to monitor the hazardous site to ensure the crane(s) do not return.

Category 3. Contaminants Hazard—Examples of possible contaminants hazards are chemical pesticides recently applied to seeds, plants or insects the cranes might use as food, and oil or chemical spills in aquatic environments. 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. If it is possible to follow or find cranes which have been hazed from a contaminants site, they are observed for several days to determine if they have been affected by the contaminant.

Category 4. Hunting Hazard—Whooping cranes occur where hunting is underway or will soon begin for species that look similar to whooping cranes (i.e. snow geese and sandhill cranes). A hazard exists if the whooping cranes are using or are likely to use habitats where hunters might mistake them for other legal game. The birds are protected through informal actions such as: (1) spot closures; (2) working with private landowners who agree to voluntarily prohibit hunting until the crane(s) leaves (or the hunting season is over); (3)

daytime whooper-care duties shared by federal and state personnel; (4) land or road access control; (5) news releases; or (6) personal contact with people in the vicinity.

Closure of an area 3 by 10 km will suffice as soon as the bird's use area is identified. Until then it may be necessary to prohibit hunting with a 10 km radius of the birds (Howe 1987; Lockman, et al. 1987; Thompson 1986). Informal spot closure of a localized area permits a quick response and flexibility of action as the birds move about.

Hazing the birds from an area is less desirable and used only in extreme situations; it has not been used to date. In most circumstances it is better to allow the birds to initiate their own movement and habitat use patterns because whooping cranes should not be discouraged from normal use of stopover sites during migration.

Category 5. Sick, Dead or Injured Whooping Crane(s)—Each situation will require that key contact personnel use good judgment. The first concern of field personnel should always be the well-being of the bird(s). The second concern would be phone contact with other state and federal personnel. The federal key contact person notifies the nearest Fish and Wildlife Service law enforcement personnel, the National Wildlife Health Center and the whooping crane coordinator. Health Center personnel consult with veterinarians at Patuxent Wildlife Research Center or International Crane Foundation who are experienced in care of sick or injured whooping cranes.

Decisions to capture and treat sick or injured whooping cranes are made jointly by the Director of the state wildlife agency and by the Regional Director of the U.S. Fish and Wildlife Service in consultation with National Wildlife Health Center personnel.

PROGRESS TO DATE

Conservation Education

During 1986 and 1987, 30-second audio and video public service announcements were distributed to radio and television stations along the cranes' migration pathway. Production of the video tape was sponsored by Edison Electric Institute and National Audubon Society. The tapes were distributed by the U.S. Fish and Wildlife Service, National Audubon Society chapters, electric utilities and state wildlife agencies, and led to several confirmed sighting reports. In one instance, a

woman in Nebraska saw the video tape before driving her children to school, and while returning home she saw whooping cranes in a neighbor's field.

Sandhill crane hunters have received materials illustrating the distinctive features of whooping cranes and a phone number where they could make collect phone calls to report sightings. Those efforts have resulted in 8 to 20 sighting reports per year by hunters. The Central Flyway Council included in their bulletin, "Waterfowl Identification In the Central Flyway," several pages illustrating whooping cranes and other similar-appearing species. These bulletins have been distributed at many offices and wildlife management areas throughout the migration pathway. The National Audubon Society brochure entitled "Is It a Whooping Crane?" was also made available to the public at many offices and refuges. Now out of print, this brochure has been replaced by brochures printed by the U.S. Fish and Wildlife Service.

Premigration news releases have been distributed each fall to hundreds of newspapers and television and radio stations. The releases are distributed through U.S. Fish and Wildlife Service Public Affairs Offices and public relations branches of state wildlife agencies.

Hundreds of reward posters have been placed in post offices, store windows, sportsmen's clubs, checking stations, boat ramps and similar locations, illustrating whooping cranes, sandhill cranes and snow geese. They mention that whooping cranes are protected; note the reward for information leading to the conviction of anyone shooting, harassing or attempting to take a whooping crane; and provide a phone number where violations can be reported. No violation reports, however, have actually involved whooping cranes.

Response to Potentially Hazardous Situations

Contingency plan activities in the fall of 1985 are representative of the seasons since then. In September, a juvenile whooping crane struck a powerline in Idaho. Hunters found the crippled bird and delivered it to State of Idaho personnel. The contingency plan was used to coordinate medical treatment, but the bird did not survive.

Two adults from the Rocky Mountain population migrated east of the Rocky Mountains in fall 1985, and stopped near Severance and Hudson, Colorado, respectively. The bird near Hudson was in an agricultural area where hunting pressure was insignificant and the bird confined most of its ac-

tivity to a single farm (the landowner was very cooperative). State and Fish and Wildlife Service personnel checked infrequently on the bird during its 7-week stay there.

The whooping crane near Severance stopped in a wetland/cropland complex managed by 5 duck hunting clubs. The Canada goose and sandhill crane hunting seasons were open during part of this bird's 5-week stopover, and the hunting clubs were asked, and responded positively, to voluntarily cooperate with an informal spot closure of hunting activity. Initially, 5 km were involved, but after the bird's movements were better known the closed area was reduced to 65 ha. This bird was monitored from dawn to dusk daily by state and federal personnel and volunteers. More than 1000 people made special trips to view the Severance bird during its stopover (Rogstad 1986). The birds at Severance and Hudson subsequently arrived safely in the Middle Rio Grande Valley wintering site.

Birds that stopped on Standing Rock Indian Reservation in South Dakota in 1985 were checked daily for 2 days until they departed. In another situation, also in South Dakota, birds were monitored through the daylight hours for 3 days and news releases alerted the public to the birds' presence.

Whooping cranes appeared in the southwestern Wyoming sandhill crane and Canada goose hunt area on 2 occasions in fall 1985, and the state responded with spot-hunting closures. A news release was issued to alert the public about another whooping crane in the Riverton area.

One whooper stopped at Las Vegas National Wildlife Refuge, in northeastern New Mexico, in 1985, outside the traditional wintering grounds, in an area which included a zone scheduled for hunting of Canada geese. The hunts were not modified, but included in the hunters' pre-hunt briefing was information about the whooper's presence, and identification brochures were placed in hunt blinds.

Reports of whooping cranes outside the traditional wintering grounds in Texas required searches on 5 occasions. Two whoopers were consequently confirmed near Brazoria in January and were monitored periodically by U.S. Fish and Wildlife Service refuge personnel for the remaining winter period. Local goose hunting guides and landowners were told about the whooping cranes' use-area, and news releases were issued about the matter. These birds were hazed repeatedly that March from fields where seed corn treated with

CAPTAN fungicide, Methoxychlor and Malathion had been planted and the field had been treated with Sevin 5 bait and Counter (a systemic insecticide and nematicide) (Lange 1986).

One whooping crane was injured (probably shot) in early January in the Middle Rio Grande Valley. Although severely injured, it remained alert and able to fly. The contingency plan was used to maintain communication lines as specified for an injured bird, and personnel monitored the bird on a regular basis until early March when recovery seemed almost complete. The bird then migrated safely to its summering site.

Aspects of the contingency plan were also implemented when a whooping crane was reported sick or injured at Belen State Wildlife Management Area south of Belen, New Mexico, and when sick sandhill cranes were reported near Los Lunas, New Mexico.

Effects of Plan Implementation

1. Sightings—In 1982-84, before the plan was implemented, the average population of the Wood Buffalo flock was 78 birds and an average of 20 confirmed sightings occurred each fall. From 1985-87, inclusive, the average population was 114 and the average of confirmed sightings was 32, a 46% increase in population but a 60% increase in sightings. The increased sightings were presumably a consequence of the efforts to encourage sighting reports.

2. Migration—The population going north in the springs of 1983 and 1984 totaled 145 birds and the losses totaled 7 birds or 4.8% of the population. The plan was in effect in fall 1985 but not in spring. The population going north in the springs of 1986 and 1987 totaled 205 birds. The losses of white-plumaged birds were 7 in 1986 and 0 in 1987, or 3.4% of the population. This 29% reduction in losses, from 4.8% to 3.4% of the population, was not statistically significant.

Sixteen, 21 and 25 whooping crane chicks reached fledgling age in the summers of 1985, 1986 and 1987, respectively, at Wood Buffalo National Park. In each of the subsequent fall migrations, all these chicks safely reached wintering areas in the southern United States. In the 3 summers preceding implementation of the plan (1982-1984), 38 chicks reached fledgling age and only 28 (73.7%) reached the wintering grounds. The survival difference experienced in these 2 periods was statistically significant at the 0.01 level.

DISCUSSION

It is unlikely that the contingency plan can be credited with all of the increased survival during migration. Habitat conditions were good in the nesting grounds in 1986 and 1987. Migration occurred later those years, so the young birds were larger and stronger when they initiated migration. Another factor contributing to greater survival may have been that late migrating birds were exposed to fewer hazardous hunting situations.

Implementation of the contingency plan has increased the number of sightings of whooping cranes during fall migration, and increased survival of fledged birds. It is achieving the goal of reducing losses during migration and, thereby, accelerating population recovery.

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